TROY MUNICIPAL PLAN

Adopted March 16th, 2020 by the Town of Troy Selectboard

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INTRODUCTION

The original town plan was adopted on August 9, 1995. This updated version of the Troy Town Plan is an effort to adequately reflect the Troy existing today and effectively plan for its future. The town plan serves as a guidance document for the Select Board and Planning Commission, and as a resource for anyone interested in the future of the Town of Troy and the Village of North Troy.

Context of Troy

The Town of Troy is located on the Canadian Border in North Central Vermont. It lies in the Northwestern part of Orleans County. The Green Mountains lay to the west and the Vermont Piedmont lies to the east. The Towns of Jay and Westfield border Troy on the west; the town of Newport borders Troy to the East, and the town of Lowell borders Troy to the south. The town boundaries contain 22,617 acres.

History of Troy

The settlement of the town of Troy began about 1796-97. Most of the early settlers built their homesteads along the Missisquoi River where the soils were productive and small-scale agriculture was feasible. By 1802, enough settlers had arrived from Peacham and New Hampshire that a town was organized and called Missisco. The increased population brought industry such as the Iron Works south of Big Falls, a sawmill at Bakers Falls, a gristmill and wool-carding mill in 1816. The majority of the settlers farmed in south Troy, and it wasn't until the Railroad came through North Troy in the 1870's that the population center shifted to North Troy. In October of 1876 the Village of North Troy was incorporated and remains so today.

The accessibility of North Troy, as a result of the railroad, changed the town from an area more concerned with self-sufficiency to an area where industry could exist and export goods. The Blair Veneer Company was established in 1903 and employed a large number of residents throughout its existence under several owners. Over time the Village of North Troy continued to grow as the main commercial center while agriculture remained an important industry throughout the rest of Troy. Over the years, the Town and Village have seen a great variation in the number of local industries, commercial establishments, local farms, and rural agricultural-related businesses.

Today, the Village of North Troy and the Hamlet of Troy are the main activity centers within Troy. Both areas include a compact mixture of housing options, commercial enterprises, public facilities, and local services. The outlying areas are now a mixture of farms and rural homesteads, with a few rural businesses and properties under conservation scattered about town.

Objectives & Policies

The development of this plan has yielded the following objectives and policies. The objectives and policies are meant to be an overall guide for future decision making and have been developed through a mixture of planning analysis and citizen input.

1. This plan and the zoning bylaws shall be updated periodically to account for the changing needs of the town and surrounding towns.
2. Communication will be maintained amongst the Towns of Troy, Westfield, Lowell, Newport Center, and Jay. Issues such as the wastewater treatment facility, zoning regulations and adjacent zones will be discussed and coordinated.
3. An ongoing dialogue shall be further established and maintained between the town of Troy and the Northeastern Vermont Development Association.
4. Local citizens shall be encouraged at all times to be involved in and make decisions regarding the future of Troy and the planning process.
5. The Town Plan Maps will remain available to the public at the Town Clerk's Office so that the following applications can occur:
    a) The Planning Commission can utilize these maps for planning purposes.
    b) The Zoning Administrator can utilize this inventory to assess if a planned use of a parcel of land would adversely affect the community.
    c) The Troy Planning Commission can utilize this inventory to ascertain where they would foresee zoning changes.
    d) A property owner can utilize these maps to assess the resources on his/her land and plan accordingly what may be the best use for the land. If the property owner is considering a development, which requires Act 250 approval, these maps can be used for an initial overview of how the project may relate to Act 250.
    e) A Real Estate Agent can utilize this inventory to show a client the resources, which exist on a given piece of property or the proximity of the piece of property to other resources.
6. The town shall encourage energy conservation measures and supports weatherization and efficiency targets that further the statewide energy goals.
7. The town shall promote Troy's outdoor recreational opportunities.
8. The town will explore opportunities to protect the existing natural areas and special scenic areas.
9. The town will provide zoning densities to encourage settlement in existing population centers such as North Troy Village and the Hamlet of Troy.
10. The town will encourage commercial and residential development at the intersection of Route 101and 242, in such a way that strip development is discouraged.
    a) Encourage single entrances and exits to multiple enterprises or residences.
    b) Encourage appropriate landscaping where necessary. Encourage parking behind or to the side of the building rather than between the building and the roadway.
    c) Encourage development that is complementary to the existing residential areas.

11. Well protection zones shall be protected against any development, which would adversely affect the water quality.

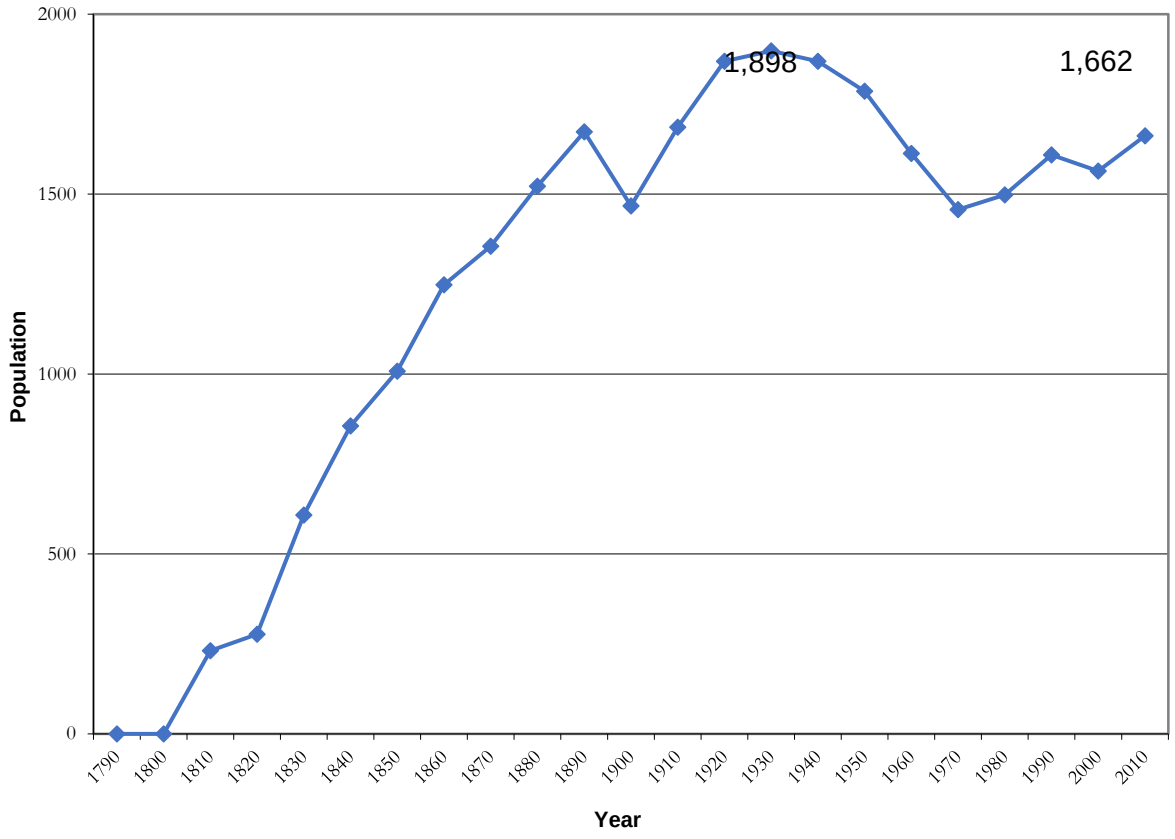
LAND USE

The town of Troy displays the traditional picturesque New England character. It has two distinct village centers surrounded by hillsides of mixed use open land and flanked by peaks of the Green Mountains. The town is located adjacent to Canada and the towns of Jay, Westfield, Lowell, and Newport. Troy's current development incorporates a mixture of residential and commercial areas surrounded by working farms and conserved lands with recreational opportunities.

Demographic Profile

The population of Troy reached its zenith in 1930 with 1,898 residents and since that time, the numbers have slowly declined to the present population of 1,662 (Chart A). In the 1960s and 1970s, the change in population was nearly at a 10% decline (Table 2). The 1980s and 1990s saw some gradual repopulation with an overall continuation of that trend through 2010.

Chart A: Troy Population 1790 - 2010



Population change trends in North Troy Village and the Town of Troy as well as in the immediately surrounding towns are shown on Table 1. Although the 2010 Census results showed growth in the Town and Village population since 2000, the latest estimates from the Census Bureau indicate a drop in population Town-wide to below 2000 levels. (Table 2).

Table 1: Troy and Surrounding Towns Population Change 2000- 2017				
Town	**2000 Pop.**	**2010 Pop.**	**% Change 2000-2010**	**2017 Pop. Estimates**
Town of Troy	1,564	1,662	6.27%	1,445
Village of North Troy	593	620	4.55%	617
Newport Town	1,511	1,594	5.49%	2,234
Lowell	738	879	19.11%	767
Westfield	503	536	6.56%	562
Jay	426	521	22.30%	677
Orleans County	26,277	27,231	3.63%	26,951
Source: U.S Census Bureau 2010; American Community Survey 5-Year Estimates 2013-2017				

According to these estimates the Village has retained most of its population gain realized in 2010, while the Town's overall population is estimated to have dropped 13.1% since 2010. The overall population in Orleans County is estimated to have dropped 1.0 % from 2010 to 2017, and an additional 0.16% through 2018 (2018 population estimates are only available at the county and state level).

Table 2: Troy, North Troy & Orleans County, Vermont Population Change 1950-2017								
Year	**Troy Population**	**% Change**	**N. Troy Population**	**% Change**	**Orleans Co. Population**	**% Change**	**Vermont Population**	**% Change**
1950	1,786	-4.44%	N/A	N/A	21,190	-2.43%	377,747	5.14%
1960	1,613	-9.69%	N/A	N/A	20,143	-4.94%	389,881	3.21%
1970	1,457	-9.67%	774	N/A	20,153	0.05%	444,731	14.07%
1980	1,498	2.81%	717	-7.36%	23,440	16.31%	511,466	15.01%
1990	1,609	7.41%	723	0.84%	24,053	2.62%	562,767	10.03%
2000	1,564	-2.80%	593	-17.98%	26,277	9.25%	608,827	8.18%
2010	1,662	6.27%	620	4.55%	27,231	3.63%	625,741	2.78%
2017	1,445	-13.1%	617	-0.5%	26,951	- 1.0%	624,636	-0.18
2018	NA	NA	NA	NA	26,907	-0.16%	626,299	0.27

Land Use Types

Agricultural

Throughout Troy's history, farming has been an important resource. Over the past 50-100 years, dairy farming has been very important to the economy. However, in the past 20-30 years, most of the farms have been abandoned and the land has been subdivided for homes, hayed by other farmers, or left to revert to woodland.

The shift away from agriculture in the town of Troy is illustrated by the decrease in farms over the past 50 plus years. In 1953, there were 89 dairy farms, in 1967, there were 47 dairy farms and in 1990 there were approximately 20 dairy farms. The average size of the dairy herds increased during the 1950s and 1960s from 30.2 to 47.2 which had reached a high of 950 head in 1995, illustrating the current trend in dairying toward larger herds on fewer farms.

As can be seen in Table 3, this trend of fewer but larger farms has been maintained in Orleans county over the decades from 1997 to 2017. The total land area dedicated to farming has decreased 9.75% from 1997 to 2017, from 142,252 acres to 128,388 acres. The estimated market value of the land and buildings on these farms continues to increase, which adds to the pressure of putting the farms up for sale.

Table 3: Orleans County Farm Data: 1997 through 2017					
	1997	**2002**	**2007**	**2012**	**2017**
Land in farms (acres)	142,252	132,240	130,308	130,445	128,388
Number of Farms	649	583	635	638	558
Percentage of overall land area in farms	31.90%	29.60%	29.19%	NA	NA
Average size of farm (acres)	219	227	205	204	230
Average per farm estimated market value of land and buildings *(adjusted for inflation to 12/2017)*	$397,220	$532,733	$556,923.	$533,911	$623,033
Average per acre estimated market value of land and buildings *(adjusted for inflation to 12/2017)*	$1,901	$2,093	$2,714	$2,611	$2,708
Source: Census of Agriculture, Vermont County Data, USDA National Agricultural Statistics Service					

Industrial & Commercial

Troy is home to a few small manufacturing plants, including Appalachian Engineered Flooring and Rozelle Cosmetics. However, Troy is still trying to attract additional industrial development at this time. Most of the industrial development is scattered throughout town. For the future Troy would like to concentrate industrial development within the Village and Hamlet, especially within the established industrial park in North Troy. The park currently hosts two operations, including a solar panel array, and has a nearby water and sewer connection. It is also surrounded by residential property and its development would help create a work-live type of community in the Village.

Historically, industrial use in the Hamlet has been limited and should remain a minor land-use. Properties, such as the former Cheese Factory, have great potential for industrial reuse as it already has water and sewer allocation. There is also easy access to truck routes, a stable local workforce, and affordable housing. Beyond these sites, new industry may be appropriately located along Route 101 and areas adjacent to the Hamlet.

Commercial development is currently concentrated on Main Street in the Village and along Route 100 within the Hamlet of Troy. There are also a number of rural-based businesses that are scattered along the major routes throughout town. For the future, Troy would like to concentrate people-oriented and service-type commercial development along the centralized areas of the Village and Hamlet and allow for some larger scale rural-based and tourism-based businesses to locate in more convenient "hub" areas, such as at the intersection of Route 101 and 242. More specifically, these businesses should be encouraged within or adjacent to the existing village and hamlet. Laliberty Trucking and Couture Transportation are an example of this type of development, and their operations require more room than traditional small-scale commercial enterprises, but as major employers in town, their location in the village and hamlet complements the work-live atmosphere of these areas.

Open Space & Conserved Lands

Outside the Village and Hamlet, Troy maintains a visual landscape full of open fields on rolling hills. Some of these fields are in productive use for farming purposes and others remain open due to conservation easements or current use restrictions. The Vermont Land Trust uses conservation easements as a way to preserve prime agricultural lands, protect natural areas, and limit the amount of subdivision that can occur on a parcel. Conservation easements may be placed on a property title when the property owner requests to conserve an area or sells the development rights. Conservation easements are a permanent element within a property's title and are maintained through property transfer. They may only be removed through the permission of the land trust, which usually requires swapping for other land and a detailed case as to why the property now needs to allow development. The majority of Troy's conserved land sits adjacent to Route 100, Route 105 East, and the Newport Town border.

Current use restrictions, unlike conservation easements, can be removed from a property at any time. Current Use restrictions allow property owners to reduce their property taxes by enrolling in the Vermont Current Use Program. The program allows property owners to pay property taxes based on a reduced per/acre amount set by the state for agricultural or forestry use. The Vermont Department of Taxes reimburses municipalities for property tax revenue not collected from persons enrolled in the Current Use Program through "Hold Harmless" payments. If the property is ever taken out of current use or developed, then the property owner must pay a Land Use Change Tax, which is 10% of the fair market value of the property. In most cases this is a hefty sum, which ultimately encourages land to maintain its current use. This program helps to subsidize farmland and forestland in the state and reduces the loss of these valuable lands to residential development. In 2010, Troy had approximately 6,500 acres of land enrolled in the Current Use Program, approximately 28% of Troy's total acreage. By 2018, the number of acres enrolled in Current Use in Troy had increased to 9,035, with 5,277 acres enrolled as forestland and 3,758 enrolled as agricultural land.

With a Conservation Overlay in the zoning bylaws, the Town of Troy can provide a more simplified way of conserving important natural environments in town, without some of the drawbacks of conservation easements and current use restrictions. Conservation Overlays are an extra coverage over smaller parts of regular zoning districts that can impose extra precautions for development in those areas. This is usually accomplished by making development a conditional use. Conditional uses are subject to design review prior to being permitted. Design review may protect natural habitats by limiting the amount of clear-cutting that can occur on a site; encourage the preservation of open space by requiring home sites to be established near the perimeter of the property; and, even lessen the impact on watersheds by requiring vegetative buffers along waterways. The best part of a Conservation Overlay is that it can be tailored to the specifics of a town's values, whether it is protecting existing forested areas, higher elevations, watersheds, prime agricultural soils, or important wildlife areas. As a part of the zoning bylaws, overlays are also not necessarily permanent; zoning regulations can be changed in the future if needed.

Priority Forest Blocks and Habitat Connectors

The Vermont Fish and Wildlife Department published a guide in 2018 entitled *Mapping Vermont's Natural Heritage*. The guide is accompanied by a set of seven maps centered on each Vermont town that features the ecological, biological, and physical resources of each town. These maps are

also available online with the Biofinder tool. The series of maps depict the areas that are conserved by various entities, the type of landcover, the forest pattern, physical landscape features, water features, community and "species scale" resources, and State and Regional conservation priorities. The maps attached to this Plan depict areas identified by the State as "highest priority" and "priority" interior forest blocks, as well as priority habitat blocks and connectors, as rated by the state. The Town base map depicts areas that are conserved through easements or ownership.

Fragmentation of large forest blocks makes it more difficult to conduct traditional forestry operations, and can have a negative impact on the diversity of habitat. Wide-ranging species need to have access to large forest blocks, so wildlife crossings are important to allow movement from one forest block to another.

Lands that are enrolled in current use as forest land are required to maintain a forest management plan. These plans are an important tool in maintaining healthy forest blocks.

In addition to regulatory tools, such as the previously described conservation overlay, there are non-regulatory actions, such as public education, that can forward the goal of minimizing forest fragmentation and maintaining the health of forests.

Land Use Trends

The Town of Troy has not yet felt major development pressures, which has allowed the Town to focus on planning for possible future development. However, Troy remains a major transportation route between Newport City, Canada, the Town of Jay and the Jay Peak Ski Resort, making the town very attractive for commercial ventures and second-home buyers. This growing development attraction is evident in the increased number of inquiries regarding building permits and the increased rate of farm land-to-residential turn over. In the coming years, Troy's development pressure is expected to grow due to continued expansions at the Jay Peak Ski Resort. In the past ten years, Jay Peak Ski Area has added ski trails, an ice arena, an indoor water park, two new ski lodges, an 18-hole golf course, a recreation center, recreational fields, an amphitheater, employee housing, and a 176 suite hotel and conference center. There is also new residential and commercial development in the Village of Jay, located just across the Troy town line on Route 242.

Troy anticipates some secondary development due to the increased activity in these neighboring communities. Especially likely is growth attracted to the expanding tourism market and second-home market of the Jay area. A rise in vacation properties in Jay, and subsequently the property values, may require Troy to meet majority of the affordable development needs associated with ski resort expansions, such as worker housing. Much of this development will aim to locate in areas where town infrastructure is already available (water and sewer capacity), such as along Route 105 West, Route 101, Route 242, and around the Hamlet.

Because of this forecasted increase in development pressure the Town should look to guide the development to appropriate areas, that will maintain the character of Troy, foster economic development, maintain a mixture of uses in the village and hamlet, and protect local natural resources.

Future Vision

The Town of Troy and the Village of North Troy are welcoming an increase in development. Both communities are still recovering from the loss of major employers several decades ago. While attracting replacement industries has proven to be difficult, there now is significant potential to build upon the local tourist industry as the Jay Peak Ski Resort expands.

Facing this new growth, the community would like to maintain several goals for the town and village. Primarily, both communities feel it is important to concentrate growth in the Village of North Troy and the Troy Hamlet. The village still has a significant amount of development potential and needs new development to lessen the tax burden on village residents. The current design of the village as a high-density, pedestrian friendly, civic and commercial center will attract future businesses that utilize the image of Vermont downtowns. Therefore, the village would like to maintain its traditional design through small-lot sizes, mixed building uses, pedestrian elements (such as sidewalks and cross walks), and neighborhood green space. In-fill development and adaptive reuse is also encouraged, so as to revitalize neglected properties before adding on to existing neighborhoods. The village would like to see the commercial sections of Main Street become a popular public gathering area with additional shops, restaurants, and service businesses. As the village grows, areas for new residential blocks and streets should be designated to attract development that will fit in with existing neighborhood design and require less municipal infrastructure and resources in the future.

The town has similar goals for the Troy Hamlet; however this community is slightly different from the village in that it is traditionally smaller in scale with its commercial and civic uses concentrated on the Common. The town would like to maintain the hamlet as a busy residential area with a few amenities and also encourage reuse of vacant commercial and industrial property. The Common is currently much more automotive oriented and would like to continue to accommodate through-traffic, but also incorporate safety features for pedestrians and bicyclists. Overall the hamlet would like to maintain its mixture of uses (mostly residential) and small-lot sizes (1 acre or less).

Besides the village and hamlet, Route 101, 105 and 242 are seen as areas that will receive the most development pressure related to growth in Jay. The town would like to accommodate for new rural and tourism-oriented businesses within a limited area along these Routes, more specifically the intersection of Route 101 and 242.

Throughout the rest of town, there is a mixture of large agricultural corridors, residential properties on small to large lots, recreation land, wetland areas, open space, forested areas, and a few commercial and light industrial enterprises. For the future the town would like to maintain the sense of rural open space. To accomplish this, residential development and other uses can continue to be allowed but encouraged to have the least impact on the surrounding landscape. To maintain natural, scenic, and environmentally sensitive areas the development permitting process should address these elements. Some of these sensitive areas identified by residents include the Missisquoi River and its floodways, traditional farming areas, prominent local hills, scenic view sheds, significant forest areas, and important wildlife habitats. As the town grows, these sensitive areas should not end up in isolated pockets due to residential sprawl, but rather maintained in corridors that complement the local landscape, encourage connectivity to the village and hamlet, and provide significant recreation opportunities.

Overall the future vision of Troy includes bustling village centers surrounded by a scenic rural landscape with all of the elements identified in this plan cooperatively working together to accommodate growth and ensure a rich quality of life.

Village Center Designation Program

The State Village Center designation program is one tool that can help the Town realize its vision for the Village of North Troy and the Troy Hamlet. The designation program provides incentives designed to encourage renovation and reinvestment in existing commercial buildings. Commercial buildings in a designated Village Center can benefit from an array of tax credits for physical improvements to the building, and the municipality earns additional points on certain grant applications. Village Center designation is appropriately located in the commercial/civic core, and a single town can have multiple designated Village Centers. The commercial areas of North Troy Village and the Troy Hamlet may be appropriate areas for Village Center designation.

Zoning

The existing zoning in the Town of Troy is guided by four district areas, which include a Rural District, Village District, Commercial-Residential District, and Industrial District. Although these zones have worked well over the past several years, Troy has re-evaluated the current zoning bylaws in light of future development and current land use trends. From this re-evaluation Troy recommends the following updates for the zoning bylaws to both reflect the values of the community and guide future community development.

Village District - The objective of this district is to maintain the village areas of Troy as the centers for commercial and social activities. All areas within the Village of North Troy and Hamlet of Troy are zoned Village District except where otherwise noted.

> **Recommendation**
> The Village District should continue to include the Village of North Troy and the Troy Hamlet. The boundary for the Village of North Troy should match the existing incorporated boundary of the Village, but the boundary for the Hamlet should be expanded to accommodate this area as a growth center for the Town. Both the Village and the Hamlet areas should encourage small lot sizes, density, and appropriate street design that support mixed-uses and alternative transportation modes. Parking regulations should be developed as well.

Commercial Residential - The objective of this district is to provide areas for residential and commercial development.

> **Recommendation**
> Due to the increasing traffic along Route 101 and Route 105 outside of the village areas, the Town would like to allow commercial enterprises within the "hub" area. This area will concentrate around the intersection of Route 101 and 242. This district aims to encourage both rural-scale and tourism-oriented businesses that will complement the existing residential development in these areas. The "hub" is envisioned as a way to better accommodate new development related to the Jay Peak Ski Resort expansion without

affecting the functionality of Route 105 and 101 as major thru-routes or compromising the future prosperity of the local village areas.

Industrial District - The objective of the industrial district is to increase the Town's tax and employment base by providing areas for the development of industrial uses. These areas are primarily in the village of North Troy.

Recommendation

In order to better accommodate industrial uses in both the Town and Village the zoning bylaws should concentrate on maintaining the Industrial District for "heavy" industry and allowing "light" industrial uses within other districts. The original purpose of an industrial district was to limit the intrusive affect industry had on the quality of life for local residents. However, as industry evolves there are more and more "light" industrial uses that prove to be less intrusive and may be appropriate within existing neighborhoods.

The Town should look into incorporating "light" industrial uses as a conditional use within the existing Village District. This way non-intrusive "light" industry will have more siting options. As a conditional use the planning commission will still be able to regulate its design based on intrusive aspects, such as noise, odors, lighting, truck traffic, and storage.

Rural District - The objective of the rural district is to provide medium density development of various types while maintaining the natural qualities and rural character of the Town. The area, which is designated as the rural district, is all areas outside of the Village of North Troy and the Hamlet of Troy.

Recommendation

The Rural District should remain relatively the same and continue to include all the remaining land areas in Town, outside of the other districts. The district should also continue to provide for medium-to-low density development that maintains the natural qualities and rural character of the Town.

The Town of Troy should also consider creating a Conservation Overlay for areas within the Rural District that might be extra-sensitive to development (as mentioned under Open space & Conserved Lands).

Land Use Goals & Strategies

Goals

- New development should complement traditional development patterns and land-uses.
- Traditional uses that maintain the rural character of Troy, such as farming and forestry, should continue to be preserved.
- Growth should be sustainable, orderly, and consistent with the future vision for the Town and Village.
- Land development should retain natural features and special scenic areas.
- Land development should minimize fragmentation of forest blocks and maintain important wildlife crossings

- Encourage community pride, reinvestment, and adaptive reuse in the Village of North Troy.
- Maintain the Village areas with high-density mixed use development that provides for a live, work & play environment.
- Earth extraction activities shall continue to be regulated under the Town's zoning regulations so as to ensure the proper restoration and preservation of the aesthetic qualities of the area.

Strategies

1. Update the Zoning Bylaws to allow for the implementation of the Town Plan.
2. Investigate the creation of a conservation overlay district as a means to protect historic land uses, natural features and special areas in town.
3. Collaborate with the Town of Jay and area towns in preparing for increased development and infrastructure.
4. Focus anticipated tourism-related development into the Hamlet, Village, and new "hub" area.
5. Allow for the development of small lots in the Village areas.
6. Concentrate residential and industrial development in areas where municipal infrastructure, such as water and sewer, is already available.
7. Seek Village Center designation
8. Collaborate with the VT Department of Fish and Wildlife to host an educational workshop on using BioFinder.
9. Employ the existing Planned Unit Development provisions in Troy's zoning regulations to protect forest blocks when land is developed.

HOUSING

Troy is a community of mixed-income residents. With the expansion of the Jay-Troy wastewater treatment plant, the towns foresee more development in the area. Increased commercial development will result in a need for more service sector employees who will fall in the low and moderate-income bracket. Traditionally, these people live in towns surrounding the resort community. Therefore, Troy sees potential population growth of low and moderate-income residents. Troy is committed to ensuring that these people can buy homes in the region.

Present Housing Status

As shown in Table 4, the population of Troy has seen fluctuations over the past forty years, which does not reflect the status in the county or Vermont. It is noted that census data for the Troy Census Designated Place (CDP) is not available prior to 2010, and is not included on the table. The boundaries of the Troy CDP roughly cover the area referred to in this Plan as the "Troy Hamlet," an area centered around the intersection of State Routes 100 and 101, bounded on the west by the Troy/Jay Town Line and on the south and east by the Missisquoi River (see Base Map).

Table 4: Population 1960 - 2017

	1960	1970	1980	1990	2000	2010	2017
Troy	1,613	1,457	1,498	1,609	1,564	1,662	1445
N. Troy Village	—	—	717	723	593	620	617
Orleans County	20,143	20,153	23,440	24,053	26,277	27,231	26,951
Vermont	389,881	444,330	511,456	562,758	608,827	625,741	624,636

Source: U.S. Census 1960 – 2010; American Community Survey 5-Year Estimates 2013-2017

A look at the housing stock in Table 5 shows that the majority of the buildings are holding one household unit. These table also shows that there are a significant number of vacant units. The American Community Survey (ACS) Table B25004 "vacancy status" indicates that 70 of the 218 vacant units in Town are used seasonally. It can be inferred that there is room for creating accessory units in the single-unit buildings as well as the ability to utilize more of the vacant units. Table 5 indicates that there is a tight housing market for owner-occupied units, especially in North Troy Village. However, according to the ACS estimates, the rental vacancy rate is quite high Town-wide. Healthy housing markets have vacancy rates closer to 5 percent. The high rental vacancy rate might be related to the age and condition of rental housing. According to ACS data, about 65% of renter-occupied housing units Town-wide was built before 1960.
A report prepared by the Vermont Agency of Commerce and Community Development (ACCD) in 2017 identified ways improve the quality and quantity of housing. This report acknowledged that there is an unmet need not only for low-income housing but for housing affordable to those earning 80%-120% of median income – an income group that earns too much to qualify for most housing assistance programs. The ACCD report noted that workforce housing is needed to support growth in the economy, but few developers are currently building housing that is affordable for much of the State's workforce.

Table 5: 2017 Housing Stock - Town of Troy & Village of North Troy				
	Town of Troy		Village of North Troy	
Total housing units	**868**	**% of total**	**335**	**% of total**
Occupied housing units	650	74.9%	271	80.9%
Owner-occupied	533	--	179	**--**
Renter-occupied	117	--	92	**--**
Vacant housing units	218	25.1%	64	19.1%
Homeowner vacancy rate	3.7%	--	0%	**--**
Rental vacancy rate	29.1%	--	12.4%	**--**
Units in Structure				
Total housing units	**868**	**% of total**	**335**	**% of total**
1-unit, detached	610	70.3%	200	59.7%
1-unit, attached	0	0	0	0
2 units	87	10.0%	77	23.0%
3 or 4 units	0	0	0	0
5 to 9 units	43	5.0%	32	9.6%
10 units or more	0	0	0	0
Mobile home	128	14.7%	26	7.8%
Boat, RV, van, etc.	0	0	0	0

Source: American Community Survey 5-Year Estimates 2013-2017

As shown on Table 6, over half (58.1%) of occupied housing units in Town are occupied by households who have moved in since 2000. This same trend is reflected throughout the county and state.

Table 6: Year Householder Moved Into Unit								
	Troy		N. Troy Village		Orleans County		Vermont	
	#	%	#	%	#	%	#	%
Occupied Housing Units	**650**		**271**		**11,498**		**258,535**	
Moved in 2015 or later	31	4.8	19	7.0	646	5.6	22,935	8.9
Moved in 2010 to 2014	161	24.8	61	22.5	2,889	25.1	68,399	26.5
Moved in 2000 to 2009	185	28.5	89	32.8	3,675	32.0	75,945	29.4
Moved in 1990 to 1999	125	19.2	28	10.3	1,890	16.4	41,169	15.9
Moved in 1980 to 1989	57	8.8	24	8.9	1,137	9.9	25,416	9.8
Moved in 1979 and earlier	91	14.0	50	18.5	1,261	11.0	24,671	9.5
Source: American Community Survey 5-Year Estimates, 2013-2017								

A look at historical data from 2000 to 2017 indicates a sharp jump in home values and rents from 2000 to 2010 in Troy, as well as in Orleans County and the State (see Table 7). From 2010 to 2017 home values and rents continued to rise State and County-wide, but changed little in Troy.

Table 7: Median Value of Owner-Occupied Units and Median Rent 2010 - 2017						
	2000 Median Home Value	2000 Median Rent	2010 Median Home Value	2010 Median Rent	2017 Median Home Value	2017 Median Rent
Troy	$68,500	$467	$132,900	$709	$135,800	$722
N.Troy Village	$62,000	$430	$105,600	$658	$104,500	$715
Orleans Co.	$78,800	$420	$149,200	$647	$161,100	$736
Vermont	$ 111,500	$553	$208,400	$809	$220,600	$945
Source: Census 2000 SF-3; American Community Survey 5-Year Estimates, 2006-2010; 2013-2017						

Data in Table 8 shows standards for evaluating substandard housing. Under 3% of occupied housing units would be considered substandard by Census standards.

Table 8: Substandard Housing 2017		
	Troy	**N. Troy Village**
Occupied Housing Units	650	271
Lacking complete plumbing facilities	19	7
Lacking complete kitchen facilities	0	0
No telephone service available	8	5
Source: American Community Survey 5-Year Estimates, 2013-2017		

Financial Characteristics of Population

Table 9 depicts the median household income and monthly housing costs for owners and renters in Troy and North Troy Village, and as a percentage of household income in different income categories. A household is considered cost burdened if it pays more than 30% of income on housing costs. Not surprisingly, lower income households are cost-burdened at a higher rate than upper income households, as shown on the table.

Table 9: Financial Characteristics of the Population		
	Troy	**North Troy Village**
Median Household Income, 2013-2017	$38,152	$35,750
…homeowner households	$41,458	$39,375
…renter households	$28,295	$29,318
Occupied housing units	**650**	**271**
Owner-occupied units	**533**	179
Housing Units with a mortgage	307	99
Housing Units without a mortgage	226	80
Median monthly owner costs		
Housing units with a mortgage	$1,143	$969
Housing units without a mortgage	$527	$500
Monthly owner costs as a percentage of household income	**Number of owner-occupied units**	**Number of owner-occupied units**
Less than $20,000	**117**	**38**
Less than 20%	0	0
20 to 29 %	18	6
30 % or more	99	32
$20,000 to 34,999	**111**	**44**
Less than 20%	32	21
20 to 29 %	8	0

30 % or more	71	23
$35,000 to $49,999	**83**	**31**
Less than 20%	42	5
20 to 29 %	33	18
30 % or more	8	8
$50,000 to $74,999	**104**	**34**
Less than 20%	62	23
20 to 29 %	22	9
30 % or more	20	2
$75,000 or more	**118**	**32**
Less than 20%	97	30
20 to 29 %	21	2
30 % or more	0	0
Renter-occupied units	**117**	**92**
Median monthly renter housing costs	$722	$715
Monthly renter costs as a percentage of household income	**Number of renter-occupied units**	**Number of renter-occupied units**
Less than $20,000	**30**	**30**
Less than 20%	0	0
20 to 29 %	8	8
30 % or more	22	22
$20,000 to 34,999	**8**	**8**
Less than 20%	0	0
20 to 29 %	0	0
30 % or more	8	8
$35,000 to $49,999	**14**	**14**
Less than 20%	0	0
20 to 29 %	12	12
30 % or more	2	2
$50,000 to $74,999	**24**	**20**
Less than 20%	11	7
20 to 29 %	13	13
30 % or more	0	0
$75,000 or more	**9**	**9**
Less than 20%	9	9
20 to 29 %	0	0
30 % or more	0	0
Zero or negative income	**8**	**8**
No cash rent	**24**	**3**
Source: American Community Survey 5-Year Estimates, 2013-2017, Tables S2503 and DP04		

People with Special Needs

People with special needs such as the elderly and disabled often require housing with more services. The only federally subsidized rental facility in town serving people with special needs is located on Pine and South Streets in the Village of North Troy. Pine Grove, which opened in 1981, has 14 units available for Section 8 rental assistance (income eligible). Six of these units are designed specifically for the elderly.

There are no mobile home parks in town. There are no residential care homes or nursing homes in Troy, although there are a few options in the neighboring town of Newport.

Statistically speaking it is possible that the Town of Troy needs more special needs housing – especially in light of the fact that about 17 percent of the Town's population (252 people) are 65 years and over.

Addressing Affordable Housing

Based on a recognition that a lack of affordable housing affects a wide range of income groups, the State of Vermont redefined affordable housing in 2017. Affordable housing, as defined in Title 24 V.S.A. Chapter 117, §4303(1) means either of the following:

(A) Owner-occupied housing for which the total annual cost of ownership, including principal, interest, taxes, insurance, and condominium fees, does not exceed 30 percent of the gross annual income of a household at 120 percent of the highest of the following:

(i) the county median income, as defined by the U.S. Department of Housing and Urban Development;
(ii) the standard metropolitan statistical area median income if the municipality is located in such an area, as defined by the U.S. Department of Housing and Urban Development; or
(iii) the statewide median income, as defined by the U.S. Department of Housing and Urban Development.

(B) Rental housing for which the total annual cost of renting, including rent, utilities, and condominium association fees, does not exceed 30 percent of the gross annual income of a household at 80 percent of the highest of the following:

(i) the county median income, as defined by the U.S. Department of Housing and Urban Development;
(ii) the standard metropolitan statistical area median income if the municipality is located in such an area, as defined by the U.S. Department of Housing and Urban Development; or
(iii) the statewide median income, as defined by the U.S. Department of Housing and Urban Development.

Neighborhood Development Area

One tool that can encourage the development of new housing that is in or adjacent to the Village of North Troy and the hamlet of Troy is the "Neighborhood Development Area" (NDA) designation. Like Village Center designation (discussed in the Land Use section of this Plan) Neighborhood Development Areas are designations made by the State Downtown Board, based on an application process. The Town intends to seek Village Center designation for areas in North Troy Village and the Troy hamlet as a means to revitalize these historic commercial centers. If these areas are designated, the Town then has the opportunity to apply for NDA designation for areas within and/or adjacent to the designated Village Centers. The State's objective in designating NDAs is to "create and maintain walkable neighborhoods that have a human scale, are pedestrian oriented, contain a mix of uses (both residential and non-residential), accommodate but manage vehicular traffic, provide a variety of public spaces, have a sense of identity or place, and are connected to adjacent neighborhoods and the downtown/village core." Benefits of NDA designation by the State are primarily incentives provided to the developer, although the benefit to the Town is an increased grand list and neighborhood revitalization.
NDA benefits include:

- Qualified "mixed income" projects are exempt from Act 250 regulations
- Act 250 projects not qualifying for the exemption receive a 50% discount on application fees
- Agency of Natural Resources fees for wastewater review are capped at $50.00 for projects that have received sewer allocation from an approved municipal system
- Exemption from the land gains tax
- Limitation on appeals of conditional use permits for residential development
- Municipalities receive priority consideration for state grants

In order to qualify, the residential area must be within ¼ mile of the boundary of a designated Village Center, and the residential development must be built to a density of at least four units per acre. In order to achieve this housing density, the area would typically need to be served by a municipal water and sewer system.

Housing Goals and Strategies

This Plan attempts to analyze present data and future trends to determine the levels and types of housing needed. Stable, affordable housing allows families to establish long-term community involvement. This plan, therefore, makes the following recommendations that will promote affordable housing opportunities to protect and enhance the quality of life in Troy:

Housing Goals

- Residents should have an adequate supply of safe, healthy, attractive and affordable housing, which satisfies activities of daily living.
- There should be a reasonable diversity of housing types and choice between rental and ownership for all citizens in a variety of locations.
- New housing units created within village centers should conform to existing and traditional patterns.
- The public should be made aware of housing needs within the community.

Strategies

1. Support a detailed housing needs assessment for the Town to guide future planning.
2. Identify the community infrastructure and services that could support affordable housing capacity.
3. Support projects that assist with meeting the housing needs for the Town of Troy, especially for those citizens of low or moderate income.
4. Collaborate with area housing agencies that provide safe and affordable housing, such as Rural Edge (formerly Gilman Housing Trust)
5. Support home ownership and property upkeep efforts of citizens.
6. Support the use and the renovation of historic buildings to meet various housing needs where feasible.
7. Investigate potential Neighborhood Development Areas for designation.

TRANSPORTATION

Existing Conditions

Located along the Canadian Border, Troy hosts a very important transportation network for Orleans County. The town is a port of entry for permitted trucking and railway shipments, as well as for Canadians visiting the region. State and local roadways also prove to be some of the most popular cycling routes in the region and some of the most scenic.

Road Network

Vermont State Routes 105 and 100 are the two major routes within town and carry the bulk of the town's through traffic. Route 105 runs east-west from Newport Town into the Village of North Troy and then south where it meets Route 101 and turns west into the Town of Jay (See the official Troy Base Map located at the Town Clerks Office). Route 100 is the other major east-west route and is located approximately 6 miles south of Route 105. East Hill Road, River Road, and Route 101 act as the north-south connectors between Routes 105 and 100. The remaining state roads include Route 242 and 243. Route 242 accesses Jay Village to the west of Route 101 and Route 243 is the main route across the Canadian Border in the Village of North Troy. According to the Traffic Research Unit of VTrans, Route 242 between the Jay Town Line and Route 101 had an Annual Average Daily Traffic (AADT) count of 1300. Route 243 between the Canadian Border and Elm Street had AADT of 2,300.

The remainder of the road network is comprised of rural local roads. The majority of these roads are gravel with the exception of East Hill Road, a portion of Loop Road, a portion of River Road, and the roads within the Hamlet of Troy and the Village of North Troy. Altogether there are 60.025 miles of roadways in Troy, including Class 4 roads. The Town maintains approximately 40.61miles and the Village maintains 5.051 miles of these roads. The rest are the responsibility of the State. It is the goal of the selectmen to maintain these roads in the best possible manner at the least cost to the taxpayer.

Table 10: Road Classification Breakdown (mi.)

Class	Town	Village	Total
State Hwy	12.329	2.035	14.364
Class 1	0	0.961	0.961
Class 2	6.020	0.290	6.310
Class 3	30.17	3.800	33.97
Class 4	4.42	0	4.42
Total	**52.939**	**7.086**	**60.025**

Route 100 from the hamlet of Troy to the junction of Routes 14 and 105 is in poor condition. Route 105 was recently repaved. The road is also part of a popular bicyclist route despite its continued lack of adequate shoulders for this activity.

There are 2 miles of legal trails in Troy.

The other major areas of concern for the town transportation network involve major intersections and issues with sight distance. Specifically the following intersections are cause for concern:

Intersection	Problem/Issue	Proposed Solution
Route 105 & Route 101*	Visibility to the right getting on 101 from 105 is poor. When traveling into Troy from Jay the stop signs for these intersections are located at the bottom of a hill and do not give drivers adequate warning to stop. Because of the high speeds, vehicles often run the stop signs.	Install "stop ahead" warnings to give adequate notice for motorists to stop.
Route 242 & Route 101		
N Pleasant St. intersections*	There are sight distance and speed issues with the intersections along N. Pleasant St. in the Village of North Troy making turning out onto N. Pleasant Street difficult.	Enforce village speed limits and maintain appropriate sight distances with ROW grooming.
East Hill Rd., River Rd. & Route 100*	The rolling hills of Route 100 cause sight distance issues for motorists turning onto Route 100 from East Hill Rd., River Rd., and area driveways.	Caution motorists, enforce speed limits, re-grade certain areas, and limit new accesses to areas with adequate site distances.
Route 100 & Route 101*	There is a sight distance issue for traffic traveling North on Route 100 from the Town of Westfield into the Hamlet. Approaching traffic does not have adequate distance to stop for vehicles waiting to make a left turn onto Route 101.	Investigate re-grading, traffic re-routing, or the creation of a left-hand turning lane to fix the problem.
School St. & Main St.	Main Street's unmarked lanes and excessive width cause confusion with some motorists.	Shoulders and parking areas should be painted.

*Identified as High Accident Locations (HAL) by the Agency of Transportation.

Speeding also seems to be a minor issue for the Village of North Troy and the Hamlet of Troy. Both areas receive a large amount of through traffic, seasonal traffic, and truck traffic. For these pedestrian areas the speed limits should be strictly enforced and pedestrian facilities, such as crosswalks and sidewalks, should be maintained.

Scenic Roads

While majority of the roadways in Troy are considered scenic, the Town would like to identify areas of significant scenic importance. These areas include:

Road	Scenic Area
Route 105 East	Heading both East & West between North Troy Village and Newport Center. This road has scenic views of rolling hills, farmland, the Green Mountains off to the West, and the Mountains of Southern Quebec.
Route 101	Traveling South along the Missisquoi Valley there are scenic views to the East.
Route 100	Looking South on scenic rolling hills and farms and Green Mountains.
East Hill Road	Looking West over the Missisquoi Valley, the Green Mountains, and Jay Peak.
Bear Mountain Road	Looking South the whole road offers a scenic vista of the Missisquoi Valley, the Green Mountain Range, Jay Peak and the Village of North Troy.
Sanville Road	There is a regional vantage point looking North, West and South along this road.

Truck Traffic

There is a considerable amount of truck traffic in town due to the Border Crossing and two large trucking companies, Couture Transportation and Laliberty Trucking. Route 101, 105, and 243 see the majority of the truck traffic in town. Route 105 is also part of the Vermont Truck Route

Network and doesn't require trucks under 72 ft. in length to have a permit. Trucking is an integral part of the local economy and should be taken into account when upgrading local infrastructure.

Budget & Maintenance Schedule

In the town of Troy, the maintenance of the road system is the second largest part of the municipal budget. Large amounts of capital are needed in order to maintain roads. In 2012, snow removal and maintenance cost the town a total of $370,166. At this time the Road Commissioner re-evaluates the road network every spring for maintenance needs and prioritizes projects for completion during the summer months.

Border Station

The North Troy station is presently considered a secondary border station in the region and mostly accommodates permitted truck traffic. The facility, located along Route 243, was rebuilt in 2005 and is currently meeting local demand. In the winter months the border receives an influx of passenger traffic from Canadians heading to the Jay Peak Ski Resort. The resort has added significant capacity in the past few years and is in the process of further expanding. According to the U.S. Border Patrol, customs and patrol agents will be increased to meet the new demands.

Bicycle Facilities

Troy is increasing in popularity for on road bicyclists due to its scenic roadways, low rolling hills, and proximity to Jay Peak and Newport City.

The regional cycling guide, *Vermont's Northeast Kingdom, A Collection of Cycling Tours and Routes* (last updated September 2017), notes five major bicycle rides through town. These include the North-South Link (#27), the East-West Link (#11), the Back Roads to Big Falls loop (#4), A Peek at Jay Peak loop (#1), and the North Troy to Lowell Spur (#23). The *Troy Bicycle & Pedestrian Master Plan* (June 2005) also identifies additional bicycle routes that connect major trip origins and destinations in town (See the Combined Bicycle Route Map). Together they include a total of 21 roadways promoted for bicycle travel.

Unfortunately, not all of the roads are considered suitable for this type of travel. Specifically, Routes 105 and 100 do not meet the standard guidelines put forth by the Vermont Agency of Transportation. Route 105 would require paved shoulders to safely allow this usage. The town is interested in accommodating traveling cyclists and hopes to expand this type of tourism in the future.

Pedestrian Facilities

At this time, the North Troy Village is the only area in town with pedestrian facilities, even though the Hamlet of Troy also has a significant amount of pedestrian activity. In 2005, the *Troy Bicycle & Pedestrian Master Plan* did an evaluation of the pedestrian facilities in the Village and found that most of the sidewalks were considered 'fair' or 'poor'. The plan goes on to recommend a prioritized set of improvements to be made in the Village and areas to place sidewalks and crosswalks in the Hamlet. Engineering designs for Phase 1 of the Hamlet project have been generated with the help of a Transportation Enhancement Grant. The town should seek additional funding to implement the recommendations. For a complete list of the prioritized improvements, see the *Troy Bicycle & Pedestrian Master Plan,* available at the Troy Town Clerks Office.

Air

The Newport State Airport, renamed the Northeast Kingdom International Airport in 2015, is the nearest airport to Troy and is located in Coventry VT, approximately 15 miles south-east of North Troy Village. The facility has expanded the runway in recent years, and additional improvements have been planned.

Rail

Troy contains one rail line that is an important connection for regional and international rail service. Locally the rail line runs east-west from Newport City to the Village of North Troy and then north into Canada. The line is currently owned by the State of Vermont and operated by Central Maine & Quebec Railway, Inc.. Heading north, the line connects to a freight yard in Farnham, Quebec where it can join the Canadian Pacific and Canadian National rail systems. Heading south, the line connects Newport City to White River Junction. This segment of the line is operated by the Washington County Railroad and ultimately joins the Green Mountain Railroad system and New England Central Railroad.

According to the *Northeast Kingdom Railroad Assessment*, the segment of railway located in Troy is a Class 2 railway and will need significant improvements in the near future to maintain the current level of freight service. At this time the railroad runs approximately five freight trains a week.

Public Transportation

There is currently no public transportation available in Troy. The nearest public route connections are located in Newport City and are run by Rural Community Transportation, Inc. However, RCT does schedule pick-up and drop-off services within their standard fees on an individual basis.

Transportation Goals & Strategies

Goals

- Maintain an adequate, safe, and efficient transportation network.
- Provide for and encourage the use of alternative modes of transportation.
- Minimize local road maintenance and snow removal expenses.

Strategies

1. Maintain gravel roads and utilize local gravel resources.
2. Address the safety concern areas in town with local maintenance or encourage state improvements and maintenance, especially along Route 105.
3. Practice access management for new drives along major through traffic routes.
4. Develop a capital budget plan for road maintenance and equipment acquisition.
5. Guide truck related business development along main truck routes.
6. Repair bridges in a timely fashion.
7. Maintain and replace equipment in a timely fashion.
8. Encourage dense development in and around the Village of North Troy and the Hamlet of Troy to support these multi-modal areas.
9. Develop a maintenance plan for pedestrian facilities.
10. In order to decrease road maintenance, roads with limitations on weight capacities should be posted as such.

11. Encourage adequate bicycle facilities (wide-paved shoulders) to be added when substantial roadwork is to be undertaken, especially for Routes 100 and 105.
12. Investigate opportunities to coordinate implementation of the *Troy Bicycle & Pedestrian Master Plan* (June 2005) with the Safe Routes to School – Bike and Walk to School Program; and revisit the Troy Common Planning and Feasibility Study (July 2006).

UTILITIES & PUBLIC FACILITIES

Existing Conditions

At this point in time, the town utilities and facilities include public water in the Hamlet of Troy and Village of North Troy, a wastewater treatment plant in the Village of North Troy, a wastewater treatment plant for the Hamlet of Troy, fire departments in the Hamlet and Village of North Troy, a library, Town and Village Offices, a municipal garage and recreational facilities. Each of these entities is functioning to provide the town with the necessary services. The employees and volunteers who service the town facilities are committed to the future of the Town and therefore the facilities are well maintained and provide an asset to the infrastructure of the Town.

The Town Selectmen should develop a capital improvement plan which prioritizes the utility and facility needs, and then, establish a phased plan as to when these needs will be met. With a capital improvement plan, the Town can project what increases in property taxes will be needed to maintain facilities and utilities. The Town will also have a clearer understanding of the costs of infrastructure and be able to make reasonable budget decisions.

Public Water

Public water is available to the residents of the Village of North Troy and the Hamlet of Troy. The sources of water for the Village of North Troy are from wells located south east of the Village along River Road that pump up hill to the reservoir. The Village demands approximately 150,000 gallons per day. At this time, the supply of water is not a limiting factor within the Village. However, the Village may have to add another tank or process water differently in order to meet the demand for additional housing in the near future. A lack of back-up power is another major concern for the Village, as blackouts shut down the pumps required to supply the system.

The Hamlet of Troy utilizes a well, which is just south of the Hamlet along the west side of the Mississquoi River. The well provides 120,000 gallons per day. The water is pumped to a tower north of the Hamlet on Route 101 from which it gravity feeds to the Hamlet inhabitants. This water system also lacks back up power. When there are large demands on this water supply, it recovers slowly. To address this issue, the town installed a telemetry system that runs the pump only when reservoir levels get low. This has proven to significantly improve the level of the aquifer. In addition, a filtration system has been installed to lower iron and arsenic levels in the water supply. The inhabitants of the outlying regions of the town utilize wells and springs for their water source. A new well to replace the old well was installed in July of 2016.

Sewer

The Village of North Troy is served by its own sewer treatment plant. It is located on the Missisquoi River south of Route 105 and has a capacity of 110,000 gallons per day. The present committed capacity of the plant is 70,000 – 80,000 gallons per day. Future growth in the Village would easily be accommodated with the current level of capacity.

A wastewater treatment plant located off Route 101 serves the Hamlet of Troy, portions of Route 101 and Route 242. The plant is jointly owned with the Town of Jay and has recently undergone an expansion. Currently the plant is operating at 150,000 gallons per day and is designed to accept 800,000 gallons per day. Troy's share is 110,000 gallons per day, although usage is not currently at this level. The added capacity is expected to be adequate for the planned expansions at Jay Peak, with additional capacity for related growth in Jay and the Hamlet of Troy.

The majority of the residents of Troy outside the Hamlet have private sewage disposal systems consisting of septic tanks and leach fields.

Telephone & Cellular Service

Consolidated Communications provides telephone service in town. Rural customers appear to be discontent with the service due to the high cost, restricted local calling area, and poor service response time. Cellular service has limited coverage and is provided by AT&T Mobility and Verizon Wireless.

It is preferred that the telecommunications infrastructure complement the existing character and aesthetics of Troy, by locating on local silos and within church steeples.

Electricity

The Vermont Electric Cooperative services the Town of Troy. There is a major transmission line running east-west through the Town, just south of Village of North Troy. See the Energy section for additional information.
Internet Access

Internet Access

DSL is available throughout the town, but high-speed connection is limited at this time. Areas with higher density of residences and commercial buildings are fairly well served, however buildings in the lower density areas of town struggle with hit or miss availability of fast, reliable, affordable service. Residents and businesses in this situation are often required to pay for the infrastructure installation, which is sometimes miles away.

Information on broadband service providers has been compiled by the Vermont Center for Geographic Information (VCGI) and the Vermont Department of Public Service. This information is available on the Department of Public Service website at ***https://publicservice.vermont.gov/content/broadband-availability***. Cable modem service is offered in some parts of Troy by Exfinity, and Consolidated Communications provides DSL service also only in certain areas. Several other companies provide fixed wireless to possibly half of town, and mobile wireless (mobile phone data) and satellite coverage is offered ubiquitously. Many factors, such as data upload/download needs and habits, data usage limits, adequacy of hardware and software used and high-traffic time periods affect whether or not residents and businesses find these available services adequate.

Town Garage
The Town Garage was built in 1984 to serve the needs of the Town of Troy. The garage houses the equipment owned by the town, which includes a grader, three dump trucks and a bucket loader.

Village Garage
The North Troy Village Garage serves the Village. It is located in the Village Office Building and houses a plow truck, and backhoe.

Town Office
The Troy Town Office is located in North Troy at 142 Main Street directly in front of the Elementary School. The town office is also designated to serve as the local Emergency Operations Center (EOC) for the town during local emergencies and natural disaster situations. The Town Office presently fulfills the needs of the Town Clerk.

Village Office Building
The Village Office Building located at 160 Railroad Street houses the Village Offices, Clerk's Office, Meeting Room, Rand Memorial Library, Community Room, Village Garage, and the Village Fire Department. The building was originally built in the 1950's, was given to the Village in 2000, and was renovated in 2002 to incorporate these facilities. The oldest part of the building, underneath the Clerk's Office and Meeting Room, needs the foundation enclosed for better insulation and to keep out animals.

Rand Memorial Library
The Rand Memorial Library is located in the Village Office Building and services the towns of Troy, Westfield, and Jay. The Library offers a variety of programs throughout the year, including story hour and discussion groups. In addition to the usual library volumes, the facility offers audio books, movies, large print publications, a Vermont section, and a computer lab with four computers. Inter-library loan is conducted through the VT Department of Libraries.
The library is run through a Board of Trustees and is supported mainly through the Village of North Troy and the Town of Troy, although the Town of Jay also contributes. At this time the facility adequately meets the needs of the library. The library has adopted an Integrated Library System.

Recreational Facilities
The town is fortunate to have a variety of recreational facilities. There is a multi-functional facility in the Village which provides a basketball court, skating rink, and tennis courts. The School also has multi-functional facilities for use by the public. The school ballpark is located off Dominion Avenue behind the American Legion. The park includes a baseball diamond, dugouts, and bleachers. The ball field is also lighted for night games. It is also configured for use as a soccer field.

A five-acre parcel of land off Dominion Avenue was given to the town in the Village of North Troy to be used for recreational purposes. Some work has been done to establish a trail through the property and a clearing for recreational purposes. The trails have been improved through a Promise Community Grant It is the hope of North Troy residents that more extensive cross-country trails can be developed.

Child Care Facilities

According to the Bright Futures Child Care Information System on the VT Department for Children and Families website, there are currently ten childcare providers in the Town of Troy, nine of which are rated with the STARS system. Three of these facilities have a "5 STAR" rating.

Seven of the childcare providers are "Registered Family Child Care Homes" and three are "Licensed Programs." The State defines a Licensed Program as "a childcare program providing care to children in any approved location. The number and ages of children served are based on available approved space and staffing qualifications, as well as play and learning equipment. A Licensed program must be inspected by the Department of Labor and Industry's Fire Safety Inspectors and must obtain a Water and Wastewater Disposal Permit from the Agency of Environmental Conservation. A Licensed program is considered a public building under Vermont Law. Types of licensed programs include: center based child care and preschool program, afterschool program, and licensed family child care home.

A Registered Family Child Care Home is defined as "A childcare program approved only in the provider's residence, which is limited to a small number of children based on specific criteria."

STARS is Vermont's quality recognition system for childcare, preschool, and afterschool programs. Families who use a provider that is accredited or has 3, 4, or 5 stars AND who meet the income guidelines may qualify for a low-income child and dependent care tax credit on their state income tax. In-Home Registered facilities are allowed to care for up to 4 school age children (part-time) in addition to 6 children below school-age. The definition "of school age" includes children from kindergarten up to the age of twelve, when typically they no longer require child care services. In the summer months, these facilities are allowed two additional school age children. In-Home registered facilities are also limited in the amount of infant care they can provide. Infant care includes children under the age of two and each facility can only have two children meeting this definition.

It seems that there is a considerable demand for childcare services in Troy at this time, particularly for young children under the age of two. There is capacity for total of 140 children in all 10 childcare locations in Town, and a check of the database in August of 2019 indicated only 8 vacancies, none of which were for infants.

Emergency Facilities and Disaster Response

Troy's emergency response facilities include two fire stations, the Town Office (EOC), and locally designated shelters. The Village of North Troy also includes a Federal Border Crossing Station along Rt. 243. The American Legion, Masonic Hall, and Troy School are the three primary shelters designated and VT Routes 100, 105, 243 and 101 are the designated emergency evacuation routes for the town. Missisquoi Valley Ambulance, located in Jay, provides local EMS service and is dispatched (along with fire and police dispatch services) through the Williston – Public Safety Answering Point. The Town Constables, Orleans County Sheriff Department, and Vermont State Police Troop B (Derby Base) all provide Troy with local policing.

Troy belongs to the State Police Troop B Terrorism District and Local Emergency Planning Committee (LEPC) 10, both of which coordinate emergency response and planning for the towns in Orleans County. According to the Local All-Hazards Mitigation Plan, Troy's biggest disaster

threats are from flooding, severe winter weather, ice storms, and chemical/biological incidents. In the past, there have been four FEMA disaster declarations and funding allocations due to severe flooding. Winter storms are another major concern, as they commonly knock out power, complicating emergency response, shutting down communications in town and limiting the Village and Hamlet water supply.

Troy Fire Station

The Fire Station is located in South Troy and services all parts of Troy to the south of Route 105, Veilleux Road (Town Road #12), Bergeron Road (Town Road #16) and Searles Road (Town Road #19). The Troy Volunteer Fire Department owns the facility and is also contracted by the town of Westfield to respond to calls within the entire town of Westfield. In an average year, the fire department covers approximately 45 calls with a dedicated group of 30 volunteers.
The department's equipment includes a 1998 Spartan Engine, a 2005 International/E-One 1800 gallon Pumper Tank, a 1991 Sutphen 100 Ft. Aerial Platform and a 2007 Chevrolet rescue van.

The Troy Volunteer Fire Department is currently dispatched through the Vermont State Police out of the Williston Barracks. The Department does have a generator and battery backup to maintain emergency communications in the event the town has lost power.

North Troy Fire Station

The North Troy Fire Station services the Village of North Troy and residents within the town living north of Route 105, and along Veilleux Road (Town Road #12), Bergeron Road (Town Road #16) and Searles Road (Town Road #19). In an average year, the fire department handles 18-25 fires including structure fires, brush fires, and automobile fires. The department has operated out of the Village Office Building since 2003. The new station adequately serves the needs of the 23 member department.

The equipment owned and used by the North Troy Fire Station includes a 1,000 gallon pumper, a 750 gallon pumper, one 1,000 gallon tanker and a utility van. The 1,000 gallon pumper and the utility van are the newest vehicles and were purchased by the department in 2003. Funding for the department comes from a combination of municipal funds, village funds, and department fundraisers.

Department volunteers are dispatched through the Williston Dispatch and belong to Orleans County Mutual Aid.

Utility & Facility Goals & Strategies

Goals

- Maintain and improve area utilities and facilities to meet community needs.
- The rate of growth shall not exceed the ability of the town and the area to provide facilities and services.
-

Strategies

1. Use the Municipal Lands information from the Base Map to:
    a. Guide future acquisitions and sales of land;
    b. Evaluate the impact of adjacent development on town lands;
    c. Propose zoning in relation to town lands; and

    d. Utilize “no-use” parcels for potential recreation/conservation sites.
2. Develop telecommunications regulations within the zoning bylaws.
3. Explore solutions for enclosing foundation underneath the Village Office Building.
4. Support Library enhancement projects.
5. Support the maintenance and development of the town’s Recreational Facilities.
6. Develop future forecasts for Town water and sewer capacity demand and plan upgrades accordingly.
7. Pursue the purchase and installation of generators for the most critical town utilities and facilities.
8. Investigate the grant funding potential to meet facility needs.
9. Develop a capital improvement plan to guide budgeting and expenditures for future infrastructure needs.
10. Support the establishment of additional local childcare services.

ENERGY

Introduction

This Energy section has been developed to address the enhanced Energy Planning Standards established by the Vermont Department of Public Service, pursuant to Vermont Act 174. While the VT Public Utility Commission (PUC) is directed to give Municipal Plans "due consideration" when reviewing applications for a Certificate of Public Good, those municipal plans that meet the enhanced energy planning standards are afforded "substantial deference" by the PUC. These standards are optional. A municipal plan can still meet the requirements for regional approval by containing an energy section that addresses the items specified in statute. "Substantial Deference" is defined in statute to mean, "…that a land conservation measure or specific policy shall be applied in accordance with its terms unless there is a clear and convincing demonstration that other factors affecting the general good of the State outweigh the application of the measure or policy."
While the conservation measures and policies described in this Plan don't have the weight of zoning, they provide guidance for projects being reviewed by the Public Utility Commission under Section 248, and by the District Environmental Commission under Act 250.
As per the Standards created by the Vermont Department of Public Service (DPS), a municipality may submit its adopted Town Plan to the Regional Planning Commission, which in Troy's case is the Northeastern Vermont Development Association (NVDA), for a "determination of energy compliance."

Regional and Municipal Targets for Generation

Targets have been developed by the State for each region in Vermont for the provision of renewable electrical energy generation, to work towards the State goal of meeting 90% of its energy needs through renewables by the year 2050.
Targets released in early 2017 provide an overall generation target of 564,962 of megawatt hours (MWh) for the Northeast Kingdom region. Since the region's existing renewable energy generation is 546,282 MWh, 18,680 MWh of new renewable energy generation is the target for the region. This generation target may be met by a variety of technologies, including wind, solar, methane, biomass and small hydro. Using this regional generation target, NVDA allocated a portion to each municipality in the region based on its population. The Town of Troy's allocated target is 469 MWh. Any existing generation online before 2017 does not count towards this target. This Plan demonstrates that this target is achievable for the Town.

This section relies on the methodology, usage data, and energy maps developed by NVDA.

Resources, Needs, Scarcities, Costs

Electricity
Today, all of Troy's electric needs are provided by the Vermont Electric Cooperative (VEC), which serves majority of Vermont's northern border communities.

Vermont Electric Cooperative's 2019 rates were as follows:

Residential service: available to all residential dwellings and optional for farms.
Customer charge - $17.22 per month
Usage: 0-100 kWh - $0.08728 per kWh
kWh in excess of 100 kWh per month - $0.1762 per kWh

Non-Demand General Service: available to non-residential members with demand lower than 500 kW per month and usage less than 15,000 kWh per month.
Customer charge - $18.26 per meter per month
Usage: $0.15840 per kWh

General Service with demand: available to non-residential members with demand lower than 500 kW per month and usage greater than 15,000 kWh per month.
Customer charge - $30.44 per meter per month
Usage: - $0.09066 per kWh

VEC's power supply is generated by hydro, wind, solar, farm methane, wood, nuclear, and natural gas/oil sources. The distribution of these power sources are shown on the VEC website. While most of VEC's power is provided through contracts with independent power producers, VEC has developed Kingdom Community Wind in Lowell in partnership with Green Mountain Power. GMP owns the wind farm and VEC receives the power generated at cost. VEC has also developed three solar projects in partnership with solar developers. These three projects total about 7.5 megawatts and are expected to produce about two percent of VEC's annual power supply needs. The largest portion of their power, approximately 57.54%, is provided from large hydro..

According to the U.S. Energy Information Administration (eia.gov), residential electricity rates in Vermont average .1739 per kWh, which is the 9th highest in the nation.

Troy contains minor elements of the region's electric infrastructure. A major transmission line, owned by Vermont Electric Power Company (VELCO), runs through town, and the Missisquoi River is home to two hydro-generation facilities.

Table 11: Electrical Energy Usage
2016-2018

Troy KWh Usage by Year			
Sector	**2016**	**2017**	**2018**
Commercial & Industrial	4,381,794	4,158,945	4,285,409
Residential	5,365,746	5,261,323	5,517,901
Total	9,747,540	9,420,268	9,803,310
Count of Residential Premises	823	830	827
Average Residential Usage	6,520	6,339	6,672
Source: Efficiency Vermont, July 5, 2019			

Heating Sources

The primary source of heating in Troy is fuel oil. The majority of the municipal buildings are heated by oil, with the exception of the Town Offices, which is partially heated by a baseboard electrical system. The basement storage area of the Town Offices is heated with propane.

Table 12: Occupied Housing Units by Heat Source 2013-2017

Fuel Type: Space Heating	All House-holds:	Owner HHs	Renter HHs	Total Average Use (annual)	% Use (all HHs)	% of use : owner-occupied	% of use : renter
TOTAL	650	533	117	58,091 MMBTUs	--	---	---
Bottled/Tank/ or LP gas	122	103	19	120,383 gallons	18.8%	18.6%	16.2%
Electricity	8	0	8	184,688 KwH	1.2%	0	6.8%
Fuel Oil, kerosene, etc.	377	287	90	241,406 gallons	58%	53.8%	76.9%
Coal/Coke	0	0	0	0	0%	0%	0
Wood	140	140	0	646 cords	21.5%	21.5%	0%
Solar Energy	0	0	0	0	0%	0%	0%
Other fuels	0	0	0	0	0%	0%	0%
No fuel used	3	3	0	--	0.5%	0.5%	0%

Source of data on types of fuels used: American Community Survey 5-Year Estimates, 2013-2017, Table B25117

In order to determine the amount of energy used for home heating, NVDA used Census Bureau data from the American Community Survey 5-Year Estimates, as well as the American Housing Survey, New England Division (AHS) to determine the total square footage of housing stock for *owner-occupied* and *renter-occupied* units. (On average, renter occupied units tend to be smaller than owner-occupied units.) Total square footage of housing stock was determined using the average number of persons per household, multiplied by the median square footage per person, multiplied by the number of households.

NVDA's estimates account for the age of the housing stock, since prep-1940 housing stock is less energy efficient and poorly insulated. NVDA assumed 80,000 BTUs per square foot for pre-1940 housing stock, and 45,000 BTUs for all other. According to ACS estimates, 28.7% of owned homes and 50.4% of rented homes in Troy were built before 1940.

Estimates for usage by seasonal housing units came from the Department of Public Service guidelines.

Energy usage is expressed in *British Thermal Units* (BTUs) and millions of BTUs (MMBTUs) in order to allow for comparison between different energy types. Energy expressed in units of different types of fuel (e.g., gallons, tons) are shown in Table 12. Based on the total households (occupied housing units) and the estimated number of seasonal units (70), NVDA estimates the total energy use for heating occupied households is 58,091 MMBTUs and 642 MMBTUs for seasonal households.

Non-residential Thermal Energy Usage

Based on information provided in the energy profile developed by NVDA, which uses data from the Vermont Department of Labor's Economic and Labor Market Information web site, the number of commercial buildings in Troy is estimated to be 26. With an estimated annual heating load per building of 775 MMBTUS, the total estimated annual heat energy consumption of commercial buildings is 20,150 MMBTUs.

Propane gas is slowly rising as a heating source. Electricity as a source of heat has been decreasing which reflects the increasing cost for electricity. However, electric heat pumps only use half the electricity used for electric resistance heating, and renewable sources such as solar or hydro can be used to generate electricity.

No scarcities of energy resources have been identified.

Transportation Energy Usage

The following transportation energy data was developed by NVDA using the Department of Public Service's worksheet. The total number of vehicles comes from American Community Survey (ACS) 5-Year Estimates. Average annual Vehicle Miles Traveled (VMT) is an NVDA estimate, which accounts for longer commutes and incidental trips in the rural region. Total vehicle miles travelled assumes an average fuel economy of 22 miles per gallon. Registered EVs was determined by the Vermont Energy Investment Corporation and uses the Dept. of Public Service's average of 7,000 VMTs per EV annually. Electrical energy used is based on 2 registered electric vehicles as of January 2017.

Transportation Energy Usage in Troy		
Total vehicles:	1158	
Avg. annual VMTs per vehicle:	14,000	
Total annual VMTs	16,212,000	
Energy Used		**MMBTUs**
Fossil Fuel	670,587 gallons	81,315
Ethanol	66,322 gallons	5,618
Electricity		16
Total Annual Transportation Energy Usage		86,949 MMBTUs
Source: Troy Energy Profile, prepared by NVDA 4.18.17		

Energy Efficiency/Conservation

Energy Efficiency and Conservation can significantly reduce the energy being used in local homes and businesses. Through the use of energy saving products, such as insulation, efficient appliances, and winter weatherization products, energy consumption can be significantly reduced. In addition, conservation can include shutting off lights when leaving the room, turning the thermostat down

at night, and utilizing low-flow water fixtures. Conservation should be taught and used at school, home, and in the workplace.

Efficiency Vermont, the state's energy efficiency utility, offers technical assistance and financial incentives to help Vermonters identify and pay for cost-effective approaches to energy-efficient building design, construction, renovation, equipment, lighting and appliances. They also provide technical and financial assistance to dairy farmers. Efficiency Vermont also provides tactics to reduce monthly energy costs.

New construction and renovation are commonly the optimum times to upgrade facilities with designs that maximize energy usage. Green Building Design principles provide simple building designs that can both reduce energy needs and maximize usage.

In 2016 the Troy School District completed an energy efficiency project including a new heating system and new windows for the school building.

Land Use Patterns and Energy Conservation

Homes that are located in close proximity to each other require shorter networks of streets and utilities. Shorter streets and electrical lines require less energy to build and maintain. In addition, with shorter electrical lines there is less line loss. This alone can result in a significant savings of money and energy.

Renewable Resources

Biomass and manure-methane generation offer the best potential to utilize renewable energy in Troy. The level topography has become home to many of the region's large farms, which may support the development of manure-methane generation facilities. Farms with 200 or more cows have the required volume of production to support a manure digester. The Chaput Family Farm, with approximately 1,900 head, has installed such a system. Digesters heat manure to optimum levels for methane production, then extract the methane to be burned for electricity generation on site. The resulting outputs from the process includes a dry product, which can be used as animal bedding, and a liquid fertilizer that has less water quality impacts and a significantly reduced odor. At this time, USDA Rural Development grants and loans exist to help farmers with the start up costs.

Farmers may also benefit from producing crops that are used for biofuels. Crops such as soybeans, rapeseed (canola), and sunflowers are now popular for the development of biodiesel. Biodiesel will have the most potential as a renewable fuel in Vermont, both through its incorporation into heating oil and transportation uses. Corn is a popular crop for the development of ethanol based fuels, another biofuel. However, ethanol-based fuels are less reliable for Vermont's colder climate. Local farmers may also gain from growing switchgrass, which is a relatively new resource that is used to produce pellets for heating. While grass-pellet heating is still in early-development stages, it has the potential to provide very economical heating. A 2016 report by UVM Extension provides an update on the state of technology of grass biofuels, *An Update on Solid Grass Biomass Fuels in Vermont*. This report notes that grass fuels "may be produced on otherwise marginal agricultural land, sometimes in perennial production and even in buffer strips offering environmental benefit. Additionally, fuel can be made by densifying agricultural residue or biomass harvested from idle

pasture or fields." The findings of the report indicate that while upfront costs of a heating system can be significant, a 75% fuel cost savings is possible, when compared to fossil fuels.

Advanced wood heating with wood pellets is also a good option in the region. Modern wood furnaces and boilers are up to 50% more efficient than models built pre-1995. Fully-automated wood pellet heating systems with home delivery of wood pellets makes this renewable energy source a practical alternative to fossil fuels.

There are currently a number of residential properties successfully employing solar technology for electric and hot water needs in Troy. With the increasing trend of rising heating oil and electric costs, solar power has a strong potential as a supplemental fuel source and should be considered viable as a renewable energy source in town.

According to the Vermont Environmental Research Associates' Wind Resource Maps, there are no suitable areas for commercial-scale wind development in Troy, but the neighboring towns of Lowell, Westfield, and Jay contain sites with classifications of six and seven (with 7 being the greatest potential). Land owners should look towards small-scale owner consumption towers as a feasible source of wind energy in town. It should be noted that Westfield's Town Plan states: *Westfield's high elevation lands are deemed unsuitable for large-scale commercial and industrial development, and only small-scale and mid-scale wind power generation is appropriate in the town*. Westfield's Plan defines Small-Scale Wind as systems with generating capacities up to and including 10kW; and Mid-Scale Wind as systems with generating capacities greater than 10kW (AC) and less than 1MW.

Targets through 2050

Residential and Commercial Thermal Efficiency Improvements

Targets for future energy use and generation were developed by the Vermont Energy Investment Corporation using a regional Lon Range Energy Alternatives Planning (LEAP) analysis. This analysis identifies pathways that a municipality can take in order to meet the statewide energy goal of achieving 90% percent of energy from renewables by the year 2050. Reduction of heat energy demand through weatherization is essential to meeting the goals for reduced energy use. Increased fuel switching from non-renewables to renewables will not compensate for lower weatherization targets. However, more aggressive weatherization strategies will reduce fuel-switching targets.

For heating, the primary options for fuel switching are modern, efficient wood heating systems and electric heat pumps. Even if the population grows, energy use can actually decline because of efficiency and electrification. Electrification of heating and transportation has a significant effect on the total projected demand, because the electric end uses are three to four times more efficient than the combustion versions they replace. This explains why even though wood heating continues to play an important part in the area's energy use, growth in electric heating (i.e., heat pumps) reduces overall energy use.

Thermal Efficiency assumptions: the table below estimates a 6% increase in number of housing units and commercial establishments over each period. Weatherization projects are assumed to achieve an average of 25% reduction in MMBTUs for residential units and 20% for commercial establishments, although some weatherization projects can achieve deeper savings.

Table 13: Residential and Commercial Thermal Efficiency Improvements			
YEAR	**2025**	**2035**	**2050**
Estimated number of households	689	730	774
% of households to be weatherized	19%	31%	31%
# of households to be weatherized	130	225	241
Estimated number of commercial establishments	28	29	31
% of commercial establishments to be weatherized	5%	9%	16%
# of commercial establishments to be weatherized	1	3	5
Source: NVDA, Troy Energy Profile			

Electrical Efficiency assumptions: since there are generally more utility customers than households, the projected number of households in each year is multiplied by 1.5. It can be assumed that the share of commercial businesses with upgraded equipment is comparable.

Table 14: Electrical Efficiency Improvements			
YEAR	**2025**	**2035**	**2050**
Estimated number of residential customers	1034	1096	1161
% of residential customers to upgrade electrical equipment	23%	34%	47%
# of residential customers to upgrade electrical equipment	236	371	543
Source: NVDA, Troy Energy Profile			

It is expected that in addition to heating with wood products, home-owners will also begin to utilize heat pumps. Heat pumps draw heat from the environment and brings it inside, or move it outdoors for cooling. Air-source heat pumps gather heat from the ambient air, while ground-source or geothermal heat pumps extract it from the ground. The projected numbers of homes utilizing cold-climate electric heat pumps assume an increase in affordable, renewable electricity generation and the construction of new homes designed to accommodate this technology.

Table 15: Thermal Fuel Switching Targets for Residential and Commercial			
YEAR	**2025**	**2035**	**2050**
New Efficient Wood Heat Systems in Residences	331	271	197
% of households with wood heat systems	48%	37%	25%
New efficient wood heat systems in commercial establishments	4	6	8
% commercial establishments with wood heat systems	16%	20%	25%
New heat pumps in residential units	98	207	263
% of households with heat pumps	14%	28%	34%
Estimated commercial establishments with heat pumps	2	3	5
% of commercial establishments with heat pumps	6%	11%	15%
Source: NVDA, Troy Energy Profile			

Transportation assumptions: The projected number of vehicles in the area is estimated to be roughly commensurate with projections of population and households. Estimates assume a gradual increase in EV fuel economy from 3 miles per kWh to 4 miles per kWh by 2050.

Table 16: Fuel Switching Targets for Transportation			
YEAR	2025	2035	2050
Projected number of light-duty vehicles in the area, by year	1305	1468	1652
Number of vehicles powered by electricity	138	440	947
% of vehicles powered by electricity	11%	30%	57%
Number of vehicles using bio-fuel blends	938	645	113
% of vehicles using bio-fuel blends	72%	44%	7%
Source: NVDA, Troy Energy Profile			

Electrical Energy Generation

Table 17: Existing Generation Prior to 2017				
Renewable Type	**Subcategory**	**Installation Date**	**Capacity in MegaWatts (MW)**	**Annual Production in MegaWatt Hours (MWh)**
Solar	Roof-Mounted PV	7/12/2004	0.0029	3.55
Biofuel	Anaerobic Digester	8/3/2010	0.300	1,600
Hydro	Large Hydro	1/1/2012	0.850	3,210
Hydro	Large Hydro	7/1/2013	0.370	2,600
Solar	Roof-Mounted PV	6/8/2014	0.007	8.59
Solar	Ground-mounted PV	1/12/2016	0.145	177.83
Wind	--	--	0	0
Total Existing Generation as of December 2016			**1.6749**	**7,599.97 MWh**
Source: www.vtenergydashboard.org/energy-atlas. Accessed 8.9.2019				

Different renewable energy sources have different capacity factors. For example, solar, which only produces energy when the sun shines, has a capacity factor of 0.14, while hydro has a capacity factor of 0.4.

Troy's target for energy generation is **469 MWh**. Generation facilities in existence prior to the development of the region's generation targets do not count towards meeting this goal; however, new solar energy generators have been installed in Troy since 2017. This new generation of 161 MWh is reflected on Table 18 below, and is counted towards the achievement of the Town's 2050 target for renewable energy generation.

Table 18: New Generation 2017 to December 31, 2018				
Renewable Type	Subcategory	Installation Date	Capacity in MegaWatts (MW)	Annual Production in MegaWatt Hours (MWh)
Solar	Roof-Mounted PV (farm)	1/13/2017	.0456	55.92
Solar	Roof-Mounted PV (residential)	6/7/2017	.004	4.91
Solar	Roof-Mounted PV (residential)	3/26/2018	.005	6.13
Solar	Ground-mounted PV (residential)	4/13/2018	.006	7.36
Solar	Roof-Mounted PV (residential)	6/12/2018	.006	7.36
Solar	Roof-Mounted PV (residential)	6/12/2018	.0036	4.42
Solar	Roof-Mounted PV (residential)	9/15/2018	.011	13.50
Solar	Roof-Mounted PV (residential)	9/28/2018	.0114	13.98
Solar	Roof-Mounted PV (residential)	10/2/2018	.0076	9.32
Solar	Roof-Mounted PV (residential)	10/9/2018	.0076	9.32
Solar	Roof-Mounted PV (residential)	10/16/2018	.010	12.26
Solar	Roof-Mounted PV (residential)	11/29/2018	.0076	9.32
Solar	Roof-Mounted PV (residential)	12/18/2018	.006	7.36
Total new generation			**0.1314**	**161.16 MWh**
Source: www.vtenergydashboard.org/energy-atlas. Accessed 8.9.2019				

Mapping of potential renewable energy generation

The energy maps developed by NVDA for the Town of Troy are included in the appendix to this plan. The maps depict existing and potential hydro facilities and potential areas for siting ground-mounted solar projects and small wind, as well as the presence of woody biomass resources. In addition, the rooftops of existing buildings, both residential and commercial, are a potential source of solar energy generation. Table 19 below shows the potential for future energy generation using various renewable types, and is based on an NVDA analysis. The analysis evaluated only prime areas (no known constraints) as shown on the maps.

Known constraints are areas containing one or more of the following: vernal pools; river corridors; FEMA floodways; significant natural communities; rare, threatened and endangered species; national wilderness areas; and Class 1 and Class 2 wetlands.

Possible constraints are areas that would likely require mitigation because they contain one or more of the following: agricultural soils; special flood hazard areas (outside the floodway); protected (conserved) lands; deer wintering areas; Act 250 mitigated agricultural soils; hydric soils; and highest priority forest blocks.

Rooftop solar is calculated at 10% of structures (including seasonal residences) and assumes .004 MW capacity for residential and .02 MW capacity for small commercial. NVDA is not planning for additional utility scale wind in the region, so wind is calculated assuming an average capacity of 9.5 kW (.0095 MW), based on the average capacity of small wind (residential scale) in the region. The NVDA estimate assumes no locally designated constraints, although it assumes a conservative estimate of 60 acres per 1 MW of ground-mounted solar to account for unsuitability of certain sites after site-specific evaluation.

Table 19: Potential Energy Generation		
Renewable Type	**Capacity in MegaWatts (MW)**	**Capacity in MegaWatt Hours (MWh)**
Residential rooftop solar	.36	437.6
Small commercial rooftop solar (<40,000 sq. ft.)	.052	63.8
Ground-mounted solar	20.44	25,067
Wind	.12	218.4
Hydro	.003	10.51
Total Potential Generation Capacity	20.975 MW	25,797.31 MWh
Source: NVDA, Troy Energy Profile		

Siting of Energy Facilities

While Troy does not propose to outright exclude any of the prime areas from energy generation potential, the Town has identified areas of scenic views that should be considered in a site-specific analysis of any energy project proposal. These areas are included in the table of scenic areas in the Transportation section of this plan. In addition, the Town may elect to establish screening requirements for solar installations in accordance with 24 VSA Section 4414 (15) to the same extent that Troy's existing zoning regulations apply screening requirements to commercial development as part of site plan and conditional use review.

Although sand and gravel pits are often preferred sites for solar panels, the large sand/gravel pit at the end of Starr Pit Road has some constraints: the portion of the site within the river corridor and flood hazard area adjacent to the Missisquoi River would not be appropriate for development.

The Town has not identified any particular sites that are preferred for the development of energy projects.

Energy Goals & Strategies

Goals

- Maintain an adequate, reliable, and secure energy supply in town.
- Encourage the efficient and conservative use of our energy resources.
- Minimize local energy expenses.

Strategies

1. Support the development of renewable generation systems and small-scale net-metered systems in town, through dissemination of information to residents through meetings and the Town website.
2. Encourage new buildings to have a high 'R' values and utilize low-flow fixtures.
3. Organize an "energy fair" in town where contractors can present information on products and services that can increase energy efficiency.
4. Provide a link to the Vermont Building Energy Standards on the Town website.
5. Maintain gravel roads and utilize local gravel resources.
6. Update the 2011 Energy Audits on all municipal buildings.

7. Investigate grants to support the establishment of electric vehicle charging stations in Town.
8. Identify existing or new lots that can be used as a park & ride to facilitate carpooling.
9. Provide information to area employers on resources available through the VT Department of Transportation's "GoVermont" program.

EDUCATIONAL FACILITIES

Existing Conditions

The town of Troy belongs to the North Country Supervisory Union, which is geographically the largest school district in Vermont. Local students commonly attend Troy Elementary up to eighth grade and then move on to the North Country Senior High School located in Newport City. High school students also have the option to attend the North Country Career Center, which provides vocational education in a variety of subject areas. The North Country Career Center also has adult education programs designed for both career advancement and personal enrichment.

Troy Elementary School

The Troy Elementary School servicing the Village of North Troy and Town of Troy is located on Main Street in the village of North Troy. The building was built in 1978 and has had only one addition, which provided an additional classroom. The Pre-Kindergarten is located in a manufactured building. Over the years, school enrollment has remained consistently between 150 and 170 students. Enrollment in grades Pre-K through 8 as of January 2019 was 179, with 18 students in Pre-K. Enrollment is expected to continue to remain stable over the next several years unless the town receives a major industry or new housing developments. At present the school building is in good condition and adequately serves the needs of the town.

The school provides the usual Pre-K-8 curriculum, with the addition of music, art, health, and computer classes. Students have the opportunity for instrumental instruction and school sponsored sports, including: softball, basketball, and soccer. The school also provides Special Education and Summer School Reading to those students who require it. After-school programs are available for students in grades second thru eighth during the school year and continue during the day in the summer months.

Funding

In FY 2018 Troy School District expenditures totaled $ 2,863,035 and revenues were $3,090,464.. The FY2019 "announced tuition" for Troy School was $13,500. "Announced tuition" is the tuition that a district receiving tuitioned students is allowed to charge.

The table below shows a comparison of population, school enrollment and tax rates in Troy and nearby school districts. The Homestead Education Tax Rate is based primarily on the education spending per equalized pupil of all the pupils residing in a town.

Table 20: Educational Tax Rate Comparison (FY2018)

Town	2017 Population	School	2018-2019 Enrollment	FY 2018 Education Tax Rate, Homestead	FY 2018 Education Tax Rate, Non-Residential
Newport	2,234	Newport Town (Pre-K-6)	98	1.4174	1.4266
Brighton	1,103	Brighton Elementary (Pre-K-8)	101	1.3674	1.3697
Coventry	1,027	Coventry Village (Pre-K-8)	148	1.3599	1.5021
Troy	1,455	Troy Elementary (Pre-K-8)	179	1.3746	1.4754

Sources: 2013-2017 American Community Survey 5-Year Estimates; Vermont Agency of Education; Vermont Department of Taxes

Education Goals & Strategies

Education Goals

- Ensure access to high-quality educational and vocational training opportunities.
- Maintain functionality of the Troy Elementary School building.
- Minimize educational expenses.

Strategies

1. Maintain a quality education that will prepare Troy's students for the future.
2. Make every effort to continue and improve upon the existing educational programs.
3. Help facilitate awareness of continuing education resources in the region.

NATURAL & HISTORIC RESOURCES

Existing Conditions

The inhabitants of Troy are committed to preserving the natural resources within the town. These resources are irreplaceable and important for the continued livelihood of the town. It is the intent of the town to ensure that natural resources, which benefit the town, in general can be protected without unjustly infringing upon the rights of individual property owners.

Table 21: Natural Resources (Acreage)	
Natural Resources	**Town of Troy**
Area of Land, Acres	23,072
Area of Water, Acres	0
Private Conserved Lands	3,921
Municipal Conserved Lands	29
State Conserved Lands	114
Total Conserved Lands	4,064
Percent Conserved Lands	17.6%

Source: Vermont Center for Geographic Information (VCGI), February 2020.

Topography

The topography of the town of Troy is characterized by the Missisquoi River, which runs from south to north. In the southeast portion of the town, undulating terrain lies above the Westfield flats, and rises to the east and the end of the Lowell Mountains. From the Hamlet of Troy (elevation 764 feet) to the village of North Troy (elevation 600 feet), the land slopes steeply up from the river to surrounding farmlands, which lie on moderately undulating terrain. The land to the east of the Missisquoi River slopes up towards East Hill Road and the hills on the Troy/Newport border. The land to the west slopes up towards Warner Hill and the Green Mountains.

Soils

Soils play a major role in ecology. The quality and the sustainability of our present standard of living can be attributed to the quality of our soil. The soil influences the quality of the water we drink for contaminated soil will contaminate ground water. The soil also has a direct effect on the nutritional value as well as the yield of food we gain from the land as a result of the levels of nutrients in the soil.

The town of Troy contains a complex array of soils due to its location along the Missisquoi River basin. Soil types in the town can be viewed online on the Vermont Natural Resources Atlas.

Missisquoi River Watershed

Troy lies in the headwaters of the Missisquoi River Watershed. This Watershed drains into Lake Champlain through the Missisquoi River. Lake Champlain has been affected by nonpoint source pollution. Nonpoint source pollution occurs when runoff - as rainfall or snowmelt moves over the land surface picking up man-made or natural pollutants and then depositing them into lakes, rivers, wetlands and even groundwater. The main nonpoint source contaminants are sediment, bacteria, nutrients, toxic chemicals and metals. Land uses such as agriculture, forestry, construction,

residential areas and septic systems are all potential nonpoint sources. The Vermont Division of Water Quality is working through the Basin Planning Program to assess streams and rivers for such pollutants.

The 2016 Tactical Basin Plan for the Missisquoi Bay notes that the bay has excessively high phosphorus levels due to phosphorus loading from the watershed, leading to frequent algal blooms. The main sources of the elevated phosphorus, sediment and pathogen levels include agricultural, urban and road runoff, and eroding river channels due to a lack of equilibrium in the river system. The focus of the Tactical Basin Plan is the identification of specific priority actions to reduce nutrient and sediment loading as part of the effort to meet the Lake Champlain Phosphorus Total Maximum Daily Load (TMDL) goals.

The VT Department of Environmental Conservation (DEC) classifies waters (rivers, streams, lakes and ponds) as Class A, Class B or Class B with Waste Management Zone. These classifications signify the management goals to be attained and maintained.

Most reaches of the brooks, streams and rivers within Troy are classified by the state as Class B water-ways, indicating that they are suitable for boating, swimming and drinking with treatment. These waters also consistently exhibit good aesthetic value and high-quality habitat for aquatic biota, fish and wildlife. They can also be used for irrigation and other agricultural uses.

The four categories used in Vermont's surface water assessment are "full support," "stressed," "altered" and "impaired." Waters that support designated and existing uses and meet Water Quality Standards are placed into the full support or stressed categories. Waters that do not support uses and do not meet standards are placed into the altered or impaired category.

The Tactical Basin Plan identifies two stretches of rivers/streams in Troy as "impaired" – a short segment of Coburn Brook in Troy hamlet and a larger stretch of Dunn Brook (Mud Creek), north of Route 105. The cause of this impairment is noted as "agricultural runoff" and "nutrient enrichment." The strategy to address these problems is the development of a subwatershed-specific Agricultural TMDL.

The Tactical Basin Plan also reports on DEC's estimate of "hydrologically connected roads" in each town. These road segments have the potential to be at risk of erosion and may be a source of sediment and phosphorus pollution to surface waters. Troy is estimated to have 19.1 miles of hydrologically-connected roadways. This estimated mileage, along with more detailed town maps, will help municipalities establish initial town road inventories and prioritize improvements. A road erosion inventory in Troy is scheduled to be completed in the summer of 2020.

The Tactical Basin Plan discusses the control of phosphorous from wastewater treatment facilities. There are two treatment facilities in Troy that are in the watershed of the Mississquoi River. The Troy/Jay system in the Troy hamlet is in compliance with the new TMDL-allocated wasteload, but the North Troy facility requires upgrades for phosphorous control.

Table 15 of the Tactical Basin Plan identifies the State's strategies to meet the goals and objectives of the Plan. These include:

- Complete surveys of farm needs;
- Increase USDA funds through Regional Conservation Partnership Program grant;

- Provide case managers to operators to assist with resource assessment and applications;
- Provide modeling analysis to identify most effective Best Management Practices;
- River Corridor protection;
- Riparian buffer/Floodplain restoration:
- Promote programs that protect riparian forests:
- Identify old logging roads and landings for remediation with high erosion potential.

Wetlands

Wetlands have traditionally been viewed as wastelands - areas with no inherent value which require large amounts of work to become "valuable" land which can be used for development or agriculture. However, current ecological studies have shown that these wet meadows, marshes, swamps, and bogs have important environmental functions for members of the communities which surround them. Wetlands have been found to be significant in control of flooding, reduction of erosion, protection of public and private water supply, protection of ground water, prevention of pollution, control of insect populations and protection of fisheries and wildlife. Recent studies also show that these wetlands can be "put to work" by utilizing them to process human wastes, to produce food, and conserve wildlife. Management rather than destruction of wetlands appears to be their most beneficial use in the future.

The town of Troy contains over 150 wetlands as mapped on the National Wetlands Inventory prepared by the United States Fish and Wildlife Survey. These wetlands fall into two categories: Riverine meaning those, which are associated with rivers and Palustrine meaning those, which are characterized by marshes. Many of these wetlands are associated with the Missisquoi River and its tributaries including marshes fed by springs which feed into streams and brooks, shore line reed and cattail swamps, beaver ponds, and man-made ponds. The water level in these marshes and wet meadows vary according to the season and help define what plants and animals will be found in the area. State wetlands are classified as Class I, II or III. Class I designations are reserved for those wetlands which are exceptional or irreplaceable in their contribution to Vermont's natural heritage. There are no identified Class I wetlands in Troy. The Vermont Significant Wetlands Inventory, developed by the VT Agency of Natural Resources, has mapped a significant number of Class II wetlands throughout the town. Class II wetlands, including a 50-foot protective buffer, are protected under the Vermont Wetland Rules. Any intrusion into the identified wetland or its protective buffer requires a Conditional Use Determination from the Water Quality Division of the Dept. of Environmental Conservation.

Well Protection Areas

The Village of North Troy and the Hamlet of Troy each maintain municipal water systems. It is a goal of the town to protect these water systems to ensure water quality and prevent costly treatment and purification, which would become necessary if the water was contaminated. The Water Quality division of the Agency of Natural Resources has mapped Well Protection Areas, which need to remain free of adverse impacts. There are two water systems in Troy – North Troy Water System (WSID 5205) with one well and Troy Water System (WSID 5206) with one well. Each of these wells has a three-zone source protection area delineated.

Flood Plains

Portions of the Missisquoi River, Beetle Brook and the Jay Branch have all been designated as flood hazard areas. Many of these areas are presently used for agricultural purposes and are not

severely impacted by seasonal flooding. However, Troy has had four FEMA flood declarations and has received a total of $162,860.00 in the past from the National Flood Insurance Program. Most of the flooding has been caused by undersized culverts, which are being actively replaced by the town. Two other flood problem properties are now owned by the town and were purchased in 2003 with the help of a FEMA Hazard Mitigation Grant.

The Town will be updating its Local Hazard Mitigation Plan in 2020 and will seek FEMA approval in order to qualify for FEMA Hazard Mitigation grants. The previous All Hazards Mitigation Plan lists severe flooding as a 'high' likelihood with a 'high' level of community impact. Because of this, the town should maintain its status as a member of the National Flood Insurance Program and review its Flood Hazard Bylaws in order to assure no inappropriate development is occurring within the Flood Plain. (See Flood Resilience section of Plan)

Unique Natural Features

Both the Missisquoi River and its tributaries such as the Jay Branch contribute to myriad of interesting geological features including gorges, waterfalls, cascades, and swimming holes. In 2014, 46.1 miles of the Upper Missisquoi and the Trout Rivers were designated as part of the National Wild and Scenic Rivers System due to their remarkable scenic, recreational, geologic, fish and wildlife, historic, and cultural values. Rivers in the Wild and Scenic system are managed through a partnership with the National Park Service, state government, and local communities and organizations. The Upper Missisquoi and Trout Wild & Scenic Committee is formed of town appointees and partner organizations. An annual "River Community Grants Program" provides funds to accomplish a variety of projects that forward the goals of the management plan. The entire reach of the Missisquoi River in Troy is included in the designation, excluding the property and project areas of the Troy and North Troy Hydroelectric Facilities.

The following Unique Natural features are labeled on the Town Base Map as Unique Features and include:

Big Falls - This waterfall is located on the Missisquoi River and can be accessed off the River Road (1.3 miles south of Route 105). It has the distinction of being the largest falls in Vermont, which is unaltered by a dam. The Missisquoi River is about 60-75 feet wide above the falls with clear and fertile water. Rapids with many channels bordered by low cliffs culminating in a large pool characterize the area above the falls. Three channels dropping 25 feet including a spectacular and loud middle channel constitute the falls. The area below the falls is a 75-foot long gorge with walls rising 60 feet high. Below the gorge, there is an area, which is good for swimming due to its deeper water and sandy beaches. The falls is also the site of 5 uncommon plant species making it an important botanical site as well. Due to its importance as the only large falls without a dam, as a major area for rare plants and an important recreational area, *The Waterfalls, Cascades and Gorges of Vermont Study* recommends that the falls be protected against any proposal to dam it. The Big Falls is now a Vermont State Park. The land, which includes 2,400 feet of frontage on both sides of the river, was donated to the State of Vermont by Citizens Utilities Company in 1996. The 2016 Tactical Basin Plan notes that the Big Falls of the Missisquoi River is a candidate for Outstanding Resource Waters (ORW) designation "in consideration of spectacular aesthetic value and swimming use." Depending on the values for which designation is sought, ORW designation may protect exceptional waters through permits for stream

alteration, dams, wastewater discharges, aquatic nuisance controls, solid waste disposal, Act 250 projects and other activities.

Bakers Falls - Bakers Falls is located approximately one mile north of Route 100 on the River Road (south of the Great Bay Hydro Dam). Several cascades ranging ten to twenty five feet exist below the dam.

Jay Branch Gorge & Troy Four-Corners Swimming Hole - This area is located to the east of Route 101 and is characterized by a 15-foot drop over a ledge. The banks of the stream are ledges and steep soil less than 15 feet high. Several pools are deep enough for bathing and the water is clean and cool. *The Waterfalls, Cascades and Gorges of Vermont Study* states this is a locally important natural area, which deserves further study.

Rare plant Communities

The Vermont Non-game and Natural Heritage Program through the Vermont Department of Fish and Wildlife tracks and monitors sites that have either been identified as state-significant natural communities or include rare, threatened or endangered plant or animal species. This information is reviewed in permitting processes such as Act 250.

Three sites[1] have been designated in Troy as areas of significant natural communities and rare plants. These sites are the only designated rare plant/animal/natural communities within the town of Troy. However, this does not mean that they are the only sites to exist. Other significant sites may exist but have not yet been mapped due to the small percentage of areas that have been inventoried. Due to this fact, the Planning Commission feels it would be unfair to restrict property owners' rights on certain properties simply because their property has been inventoried.

The Natural Heritage sites are protected information because of the sensitivity of the natural resource. If residents may think there are natural communities or animal species of great significance on their land, they can consult the Non-game Natural Heritage Program through the Vermont Department of Fish and Wildlife.

Historical Sites

The town of Troy has a rich historical past. The use of the Missisquoi River by the Abenaki offers interesting archaeological potential, and the agricultural and industrial history of the town offers historical landmarks[2]. Some of these important historical sites are as follows:

Known Archaeological Sensitivity[3] - Two archeological pre-contact sites are located within the town. The first site is situated on a high glacial terrace approximately 12-15m above the Missisquoi River, adjacent to River Road, several hundred feet north of the bridge. The second site is located on the east bank of the Missisquoi River several hundred feet south of Route 100.

[1] Source of maps - Maps are available from the Vermont Natural Heritage program of the Department of Natural Resources.
[2] Source of Information - Information concerning the Historical Sites in the town of Troy was generated from the *Vermont Rivers Study* as well as Nancy Boone, the Architecture Section Chief of the Division for Historic Preservation of the Agency of Development and Community Affairs of the State of Vermont.
[3] Complete Archeological Assessment conducted in August 2004 by Hartgen Archeological Associates, Inc.

River Road Covered Bridge - The Covered Bridge located on the River Road in Troy is listed in the National Register of Historical Landmarks: This bridge is the only covered wood bridge remaining in the town of Troy and its unusual trusses, structural variations, and its steep pitched gable roof with wide overhangs gives it a unique place among covered bridges in Vermont.

North Troy Border Station - This building had been determined as eligible for distinction in the National Register of Historical Places. This building was constructed in the 1930's of brick and represents the importance of Federal presence in small, rural towns where no other federal facilities existed. A simple Georgian Revival design, consisting of a two-story gable-roof core flanked by two one-story hipped-roof wings, built on a concrete foundation.

North Troy Freight Station House (Village Offices)– This is a circa 1873 station house, which was built when the railroad track joining Newport and Richford was built. It is listed on the Vermont State Register of Historic Places. It is now owned by the Village of North Troy.

Cemeteries

There are five cemeteries located in Troy[4]. One is on West Road with approximately 30 graves, dating from 1801 to 1895. The "Catholic Cemetery" on River Road, dates back to 1919 but only has 9 burials. The "Troy Cemetery" dates back to 1827; it has been kept in good condition while housing more than 500 graves. The "Evergreen Cemetery," located off Route 100 on the Loop Road, holds 75 graves and is in good condition, but is seldom used and dates back to 1840. The largest cemetery in town is the "North Troy Cemetery" with over one thousand graves. The first burial date is unknown, but the cemetery remains in very good condition. Adjacent to this protestant cemetery is the Notre Dame Catholic Cemetery.

Missisquoi Valley Historical Society

The Missisquoi Valley Historical Society opened its doors in the Village of North Troy in 1976. The origin of the building dates back to 1892 when John Currier donated it to become St. Augustine's Episcopal Church. The first service was held in 1893 as a mission church. As part of the town Bicentennial project in 1976, Mrs. Anne Butterfield contacted her nephew, Bishop Harvey Butterfield, who arranged to transfer the title of the little church to the Village of North Troy to be used as a museum to house memorabilia and artifacts of historic value. The village helped with the building's renovation and remodeling. Items which had been on display in the Troy Room at the Old Stone House in Brownington, VT came home. Many items connected with Troy's past continue to be donated. In the 1990s, the building was moved to allow a new foundation to be constructed, which allowed for more storage. In 2000, a handicapped accessible bathroom was completed with funding from a state grant. The maintenance of the building is funded by membership, donations and fund raisers. The building is insured by the Village of North Troy.

The goal of the Missisquoi Valley Historical Society is to discover, collect, print, disseminate and preserve information and material concerning the history of the Missisquoi Valley. The Society has a Board, Officers, and Memberships. The Society also has a membership with the Vermont

[4] Data originally prepared by Carrie St. Onge, North Troy, VT, September 15, 1973. Updated by Arthur Hyde, 1990.

Historical Society. The Society would like to construct a library in the entrance to the left of the building.

Goals & Strategies

Natural Resources Goal
Protect and manage Troy's natural resources and biodiversity for the benefit of current and future generations.

Strategies:

1. Identify and understand the natural resources within Troy and the regional significance to the surrounding landscape.
2. Conserve the natural resources through local conservation planning and land stewardship.
3. Encourage opportunities to raise community awareness about Troy's natural heritage through education.
4. Manage our municipal lands as models of land stewardship.
5. Work with regional and state agencies and private organizations to support natural heritage protection, conservation and restoration of degraded sites.
6. Collect and utilize maps and other data to identify important wildlife corridors, connective habitats and linkages.
7. The Town should help to improve the quality of water within the portion of the Missisquoi River which flows through the Hamlet of Troy by encouraging residents to hook on to the newly upgraded sewer lines where possible.
8. Identify appropriate projects that can enhance enjoyment and stewardship of the Missisquoi River and apply for a River Community Grant for funding support.

Historic Resources Goal:
Preserve the historical features of the community.

Strategies:

1. Encourage the maintenance of both public and private buildings of historic significance.
2. Explore the possibility of preparing a comprehensive history of the Town of Troy.
3. Explore the possibility of publishing a booklet illustrating the historic structures that have been preserved to date.
4. Support the efforts of the Missisquoi Valley Historical Society to inventory, educate, and collaborate on historic projects.

FLOOD RESILIENCE

Introduction

State statute directs that a municipal plan shall include a flood resilience plan that:

- Identifies flood hazard and fluvial erosion hazard areas based on State river corridor maps, and designates those areas to be protected, including floodplains, river corridors, land adjacent to streams, wetlands, and upland forests, to reduce the risk of flood damage to infrastructure and improved property;
- Recommends polices and strategies to protect the areas in flood and fluvial erosion hazard areas and to mitigate risks to public safety, critical infrastructure, historic structures, and municipal investments.

Troy is within Vermont Tactical Basin 6, the Missisquoi Bay watershed. (See description of watershed and references to the Tactical Basin plan in the "Natural & Historic Resources" section of this Plan

In addition to the FEMA-mapped flood hazard areas, which are the areas subject to Troy's flood hazard regulations, the State of Vermont Agency of Natural Resources (ANR) has mapped "River Corridors" throughout the State. The River Corridors, as defined by ANR, "encompass the area of land surrounding a river that provides for the meandering, floodplain, and the riparian functions necessary to restore and maintain the naturally stable or least erosive form of a river thereby minimizing erosion hazards over time." Since lands within and immediately abutting a river corridor are at higher risk to fluvial erosion, the State recommends that development within mapped River Corridors be avoided, and that a 50 foot setback be maintained from smaller streams.

As an incentive to encourage Towns to restrict new development within River Corridors, the State provides an increased State match under ERAF for Towns that adopt local flood regulations incorporating regulation of State River Corridors. The flood hazard map in the appendix depicts both the approximate location of the FEMA flood hazard areas and the State River Corridors.

<u>Infrastructure and Buildings at Risk</u>

Troy is developing a Local Hazard Mitigation Plan (LHMP). Once approved by FEMA, the Town Selectboard and the Village Board of Trustees will adopt the LHMP. The LHMP will identify the road infrastructure that have experienced damage in the past due to flooding, erosion, and stormwater runoff, and will identify proposed mitigation measures.

<u>ERAF</u>

The Emergency Relief Assistance Fund (ERAF) helps Vermont municipalities repair damaged infrastructure after a presidentially-declared disaster. ERAF funding typically covers half (12.5%) the required 25% non-federal match for approved projects. As of October 23, 2014 Towns needed to have four flood hazard mitigation measures in place in order to maintain level state funding in the event of such a disaster:

1) Adopt Flood Hazard Regulations that meet minimum standards for enrollment in the National Flood Insurance Program;
2) Adopt the most recent Agency of Transportation Road and Bridge Standards;
3) Adopt a Local Emergency Management Plan (LEMP); and
4) Update and adopt a Local Hazard Mitigation Plan and submit to FEMA for approval.

For municipalities that also choose to regulate river corridors as part of their flood hazard regulations, the State will cover 17.5% of the total project cost, and municipality would be responsible for only 7.5% of the total project cost.

Planning Considerations

Maintaining natural vegetation and limiting impervious surfaces in areas close to streams helps prevent potential sedimentation of streams and water bodies and reduce stormwater runoff that could contribute to downstream flooding. In addition to the recommended avoidance of areas within the statewide river corridors, it is recommended that a setback of 50 to 100 feet be maintained from of smaller streams.

The management of upland forested areas plays an important role in flood hazard management. As these areas are cleared and become developed, storm water, instead of infiltrating naturally into the soil, quickly runs off hard surfaces picking up pollution and carrying it to waterways. Increased flows during storms can destabilize stream channels and adversely affect water quality. Limiting the extent of disturbance and development of impervious surfaces on upland slopes helps to reduce the amount of storm water runoff, and helps to avoid overwhelming existing stormwater infrastructure, including roadside ditches and culverts. Avoiding steep slopes greater than 20% when clearing and developing land, and managing stormwater runoff from new development on-site will also help mitigate future flood hazards.

Wetlands provide an important floodwater storage function, storing stormwater runoff and flood waters that overflow riverbanks. As flood waters recede, the water is released slowly from the wetland soils. By holding back some of the flood waters and slowing the rate that water reenters the stream channel, wetlands can reduce the severity of downstream flooding and erosion.

The State regulates stormwater runoff for development projects involving over one acre of earth disturbance, and that create one acre of impervious surface. However, the stormwater from many developments of less than one acre can cumulatively cause flooding and pollution.

Areas adjacent to streams are subject to fluvial erosion. These areas, in addition to steep slopes, upland forests and wetland areas, can be protected through securing conservation easements in critical locations, and educating property owners of best practices.

Goals & Strategies

Goal
Reduce the risk of flood damage to infrastructure and improved property.

Strategies

1. Partner with DEC and other organizations to facilitate restoration projects in river corridors.
2. Encourage best practices to handle stormwater runoff from existing and new development.
3. Discourage development on steep slopes and within river corridors.
4. Create a capital improvement plan to address the mitigation projects identified in the LHMP, beginning with the highest priority projects.
5. Consider regulating river corridors as part of the flood hazard regulations in order to mitigate flood and fluvial erosion hazard risks, protect investments in streambank restoration projects, and receive a higher amount of funding under ERAF
6. Hold periodic education events to inform local residents how to mitigate flood and fluvial erosion hazards.

ECONOMIC DEVELOPMENT

Planning for economic development allows communities to intentionally foster the types of economic activity, businesses and employment opportunities they see as most complementary to their existing community character and their vision for the future.

Economic Profile

The economic base in Troy is primarily one of small businesses, with a handful of establishments which employ a proportionally large number of workers. The Troy Elementary School is the single largest employer, with approximately 46 faculty and staff. Economic activity in Troy is also driven by its location along major transportation routes between Newport City, Canada and the Jay Peak Resort. There are two trucking companies in town. Small manufacturing is important as well, with 17 positions at Appalachian Engineered Flooring, and 20 at Rozelle Cosmetics. Agriculture also continues to play part in commerce despite conversion and/or consolidation of farms over the past six decades. Percentage of land in farms has remained relatively steady at about 30% in the last decade. The small businesses that make up the remainder Troy's economy include three retail establishments, auto repair shops, one restaurant, 8 child care facilitites, some of which are pre-school certified; one tent rental business, three fuel oil dealers and gas stations as well as home-based businesses.

The majority of residents in the Town of Troy commute to neighboring communities to find employment. With this proportion of the labor force leaving their hometown for work, Troy can be considered a bedroom community. Those who commute do not generally travel an inordinate distance to their place of employment, with the average commute to work being 28.8 minutes. The majority of employment is found in the neighboring communities of Newport City, Derby, and Jay.

Some basic goods and services are available in town, at the community's three retail establishments. Newport City, Morrisville and establishments on the Derby Road are otherwise popular destinations for obtaining such needs. Littleton, New Hampshire and St. Johnsbury and Burlington, Vermont are accessed in some cases for a wider selection.

Troy is included in the service area of the Jay Area Chamber of Commerce, along with the communities of Jay, Montgomery, Westfield and Lowell. Troy is also served by the Northeastern Vermont Development Association, the region's economic development corporation.

Industrial & Commercial Development

In order to provide more employment opportunities in town, and especially create a work-live environment in the Village and Hamlet, the community would like to attract additional industrial and commercial development. The Land Use section of the Plan describes land use designation strategies to guide such growth into desired areas, such as the Troy Industrial Park, the "hub" at Routes 101 and 242, as well as the designation of existing land in the Village and Hamlet as the appropriate areas in town for commercial and industrial development. There are also direct incentives which create a more favorable business environment.

A primary way to attract industrial and commercial development is the use of special designated zones or benefit areas. Orleans County is part of three special federal district designations related to economic development assistance. These include a Rural Economic Action Plan (REAP) Zone, an Economic Development Authority (EDA) Economic Development District, and a Historically Underutilized Business (HUB) Zone classification. Each federal district addresses the issues of economic distress and works to alleviate the conditions of the areas designated, through grants and

Table 22: Selected Economic Characteristics

	Village of North Troy	Town of Troy	Orleans County
Mean Travel Time to Work (minutes)	20.9	28.8	24.2
Percent Working in County of Residence	95.4%	85.9%	82.6%
Worked at Home	6.1%	10.9%	7.9%
Median Household Income (dollars)	$35,750	$38,152	$45,664
Median Family Income (dollars)	$36,563	$45,208	$56,299
Per Capita Income (dollars)	$18,609	$21,877	$25,392
Unemployment Rate (%)	5.2%	3.5%	4.4%
People Whose Income is Below the Poverty Level	20.1%	16.9%	14.2%
Percent Households Receiving Food Stamps/SNAP Benefits	25.5%	14.2%	17%

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates, Tables DP03, S0801

funding programs. Troy should take advantage of the programs offered to support new industry in

the industrial park and recognize the federal designations in grant applications to receive a more competitive status.

Village Center Designation is another tool to attract new commercial and industrial development into Troy's population centers and should be pursued for the Village of North Troy. As a designated Village Center, new and existing businesses will be eligible for tax benefits, have priority for state grants, and locating state buildings.

Opportunities & Challenges

Recent and future proposed growth in the neighboring community of Jay is a very important opportunity for fostering economic development in Troy. Due in large part to expansions at Jay Peak Ski Resort, the community of Jay has seen greater population growth in the last five years than most of its neighbors. As mentioned in the Land Use section of the Town Plan, Troy can expect to see development as a bedroom community, providing housing for hospitality and other tourism industry workers. There is also interest in the community in generating additional economic activity in Troy by attracting Jay Peak guests and businesses which serve them.

Visitors destined for Jay Peak Ski Resort coming from the east must pass through the Town of Troy on Routes 100, 101, 105, 243 and 242. Troy is also en route to Newport City from the ski resort, Newport City providing the nearest downtown shopping district. Any increase in tourist traffic through Troy poses an opportunity to provide goods, services, lodging or other attractions which could generate revenue or local employment.

In addition to economic growth in Jay, tourism, and other commercial developments are planned for the nearby communities of Newport City and Coventry. Expectations for the effects of these changes on Troy and other surrounding communities is somewhat unclear at this time. Multiple communities have expressed concerns about planning for changes in property values, increased housing demand, subsequent public infrastructure and service expansions, adequate school capacity, and other impacts. As planning studies and projects are initiated to address these concerns, residents of Troy will be encouraged to provide information and feedback. Results and findings of these processes will be shared with the community, allowing well-informed consideration of the proposed developments' impact on Troy's long term economic and community planning vision.

With an increase in four-season visitors to the area, Troy has several assets which could be promoted to attract recreationalists and possibly outdoor recreation based businesses. The Missisquoi River and its falls are unique features in the region, and Troy's byways and gentle terrain have highlighted it as an ideal bicycling destination. Further description of these assets is provided in the Natural & Historic Resources and Transportation sections of the Plan.

Workforce development and Pre-k-12 education are important issues that the community would like to address while setting goals for economic development. The community would like to provide the opportunity for all residents to prepare themselves in skills important to any profession, as well as to develop the foundation necessary to seek specialized training. As mentioned in the Educational Facilities section, the Town of Troy provides k-8 education to resident children.

Improvement of high speed broadband internet and cellular phone service is also key to providing a favorable business and economic environment in the Town of Troy. As described in the Utilities and Public Facilities section, obtaining fast, reliable, and affordable service is quite challenging in some parts of town. As technology and transfer of information increasingly drive and facilitate the state, national and global economy, adequate service is more critical to economic participation. Rural areas also particularly stand to benefit if adequate service can be established, by accessing otherwise distant markets. E-commerce and other broadband economic development tools, such as online education and workforce training, present the opportunity to increase activity while maintaining tenets of rural character such as minimal land, building and infrastructure development, as well as smaller population levels.

Economic Development Goals & Strategies

Goals

- Encourage commercial and residential development at the intersection of Route 101 and 242, in an effort to discourage strip development along these corridors.
- Guide secondary development as a result of Jay Peak and Newport City growth to appropriate parts of town as described in the Land Use section of the Town Plan.
- Attract commercial development within the Village and Hamlet, Develop existing assets in the Town and Village which have the potential to attract a tourist market, both from visitors to Jay Peak Ski Resort and elsewhere (such as recreational assets)
- Encourage new economic endeavors that also build upon the growing local tourism industry
- Develop the commercial section of Main Street into a popular public gathering area, with additional shops, restaurants and service businesses.
- Support the trucking sector as an integral part of Troy's local economy by implementing related goals and strategies outlined in the Transportation section.
- Consider closer ties with Canada through international trade and commerce.
- Apply for Village Center designation

Strategies

1. Work with the economic development assistance programs and the Northeastern Vermont Development Association to attract and support new industry in town, as well as explore opportunities for Foreign Trade Zone utilization.
2. Access resources and ideas provided by the Jay Peak Area Chamber of Commerce and participate in the NEK regional marketing campaign (https://getnekedvt.com/) for development and promotion of outdoor recreation and tourism assets in Troy.
3. Encourage the expansion of telecommunications infrastructure in town to attract new business development.
4. Conserve or protect the natural, scenic, historical and other resources in town which can be harnessed as tourism assets.
5. Continue to develop and expand important collaborative relationships with representatives, such as the Missisquoi River Basin Association (MRBA) or other interested organizations.

6. Investigate the possibility of altering signage at the intersection of Routes 101 and 242 to direct motorists to Newport via North Troy. Alternatively, official business directional signs could be installed directing motorists to businesses in North Troy.
7. Enlist the assistance of a 3rd party facilitator (such as Vermont Council on Rural Development) to form an economic development committee comprised of representatives of the Troy Planning Commission, Village Trustees, Selectboard and interested property/business owners.
8. Work with partners to introduce cautionary signage at the access to the Big Falls State Park.

ADJACENT MUNICIPALITIES & THE REGION

Troy *2010 Census population = 1,662 Town*, 620 Village of N. Troy*

The unique geographical and topographical features of Troy's pie-shaped, rolling valley make this town a valuable transportation thruway as well as a scenic residential and agricultural landscape. Its length and narrow width mimics the shape of Vermont while mirroring the rural qualities enjoyed in this state. Troy is mainly a residential community with some industry and a few retail and commercial endeavors. Because of the short width of the town, the community is closely connected with its neighbors.

Troy is committed to working with the adjacent municipalities in solving the problems which affect the northwestern section of Orleans County. Over the past several years, Jay and Troy have successfully planned a joint wastewater treatment plant, which was constructed and completed in 2012. In addition, Jay shares a recycling facility with Troy which is located at the Jay Town Garage. The Troy Fire Department has also provided service to Westfield for many years. The small size of these communities requires cooperation and joint ventures.

**Town population includes Village population figures.*

Newport Town *2010 Census population = 1,594*

Troy shares its eastern border with Newport as well as Routes 100 and 105. Currently the land use along this border is mainly agricultural and residential. Newport Town adopted it's most recent version of a Town Plan in June 2015. This plan is consistent with the development plans of Troy. Newport Town wants to focus on village growth and acknowledges that their development trends are changing from agricultural to residential. Newport Town is considering establishing more zoning districts to reflect the different character and uses in town. Presently there is only a single zoning district in town. Much of the bordering property with Newport, both in Troy and in Newport town, is in conservation easements through the Vermont Land Trust. This will limit the amount of development pressures in this area.

Lowell *2010 Census population = 879*

Although Troy and Lowell only share a few miles on Troy's southern border which includes only one secondary road (Carter Road), the traffic generated through Lowell on Route 100 generally continues on through Troy into Newport or further north. Lowell's Town Plan adopted in August 2014 encourages the development along Route 100 that compliments and does not distract from the scenic quality of this route. The Plan also encourages "light, non-polluting" industry and business which is consistent with Troy's goals.

Westfield *2010 Census population = 536*

Troy shares the bottom half of its western border with Westfield and one of the State's major north-south routes. Route100 is the only significant road in Westfield and hence, is the source of most of the development in town. However, being a small, residential community, there does not appear to be any development pressures from Westfield. If development was to continue in the Jay Peak Resort area, it is possible that development pressures could increase in Westfield along Route 100, but this is yet to be seen. Westfield's Town Plan adopted in January 2019, points out that several farms along this corridor sold their development rights which will control, to some extent, the development pressures in this area.

Jay *2010 Census population = 521*

Troy's upper western border is connected with Jay. Troy acts as a major thruway for traffic going to Jay Peak. Route 242, the main route into Jay, spurs from 101 and has the potential to see much more development in the future. The Jay Peak Ski Resort has plans for future expansion in the West Bowl, in addition to completed expansions at the main base lodge area. Troy has been working cooperatively with the Towns of Jay and Westfield, the Jay Peak Ski Resort, NVDA, VTrans, and local businesses and residences to develop a transportation improvement plan to accommodate this growth. A study of the area projects an increase in traffic on Troy's roads and intersections due to this growth. It is also possible that the economic growth of the resort could bring more commercial and residential development to Troy. There is likely to be many more cooperative ventures like the transportation plan in the future.

The Jay Community Development Plan adopted in June 2017 points out that the Jay Peak Ski Resort greatly impacts the surrounding towns of Jay. In fact, the Town of Jay considers the operations of the Resort to be the single greatest impact on the development of Jay as well as the surrounding towns. Jay's Plan also recognizes that the development will increase along the Troy town line and on Routes 242, 105 and the Cross Road. This will require Troy to continually evaluate this development pressure.

Canada

Troy shares its entire northern border with Canada as well as one of the five border stations in the Northeast Kingdom. The border crossing enters Canada via Route 243 in Troy's northwest corner, with the rail line running parallel. These two transportation lines mostly connect regional and international trade traffic. There is a potential for development in relation to this international crossing route. However, presently the area is mostly rural residential and agricultural.

The headwaters of the Missisquoi River watershed run through Troy and enter Canada via the Missisquoi River and Mud Creek. Canada has been collaborating with the Missisquoi River Basin Association (MRBA) to create a watershed plan that incorporates all watershed communities. This could enhance future collaboration with Troy's Canadian neighbors.

The Northeast Kingdom *2010 Census Population = 64,764*

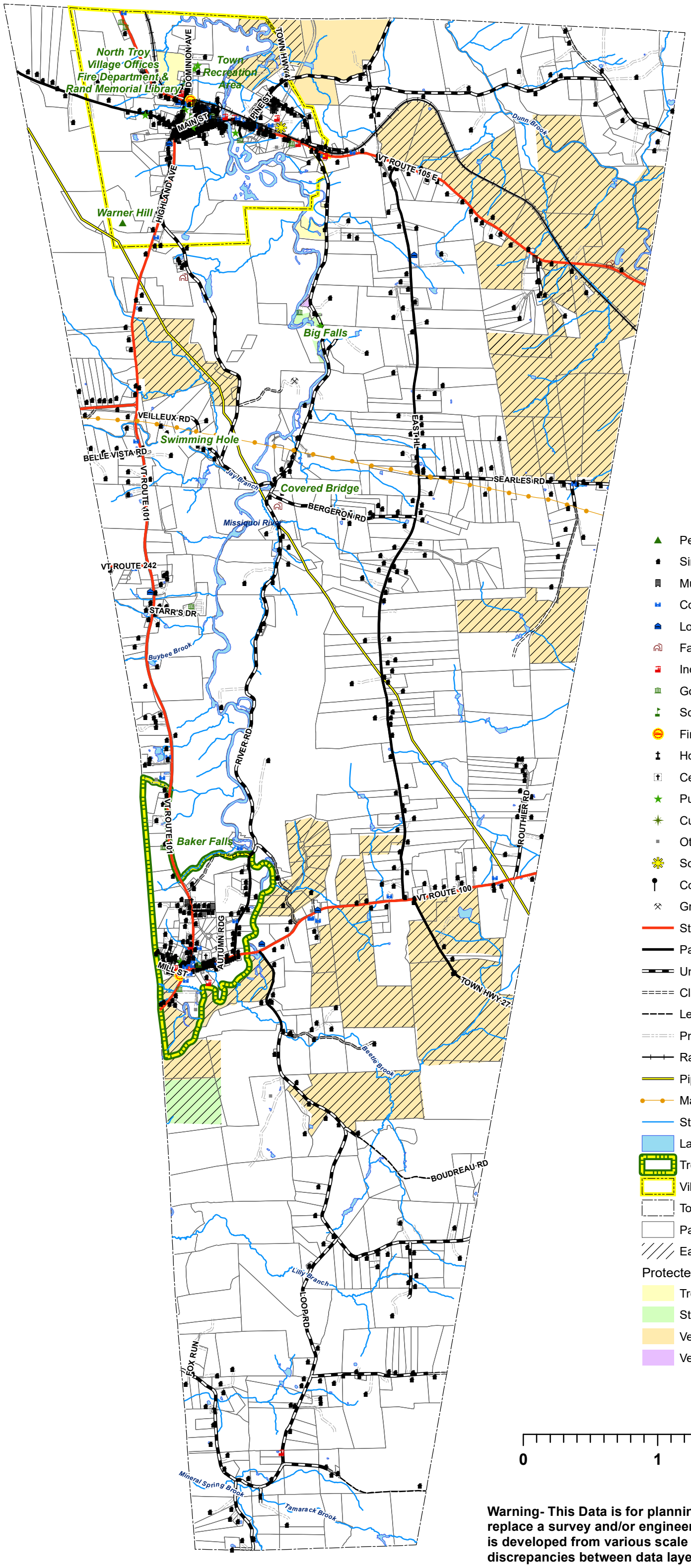
The Regional Plan was last updated April 26th, 2018. The Plan defines the Village of North Troy as a "service center", an "important center for commerce, services, employment and community life." It further explains that a service center is generally a bedroom community that does not provide enough employment to be completely self-contained, but does have capacity for industrial development. The land use patterns in these service centers, as seen in North Troy, remain relatively stable over time, with gradual changes. The top land use goal recommends that "Traditional development patterns should be maintained and new development should be encouraged to follow these patterns." Troy's Town Plan follows the Regional Plan goals and recommendations, as it will continue to serve as a "service center" for the region.

Appendix:

- Base Map (with insets)
- Land Cover/Use Map
- Zoning District Map
- Natural Resources Constraints Map
- Conservation Priorities Map
- Forest Block Map
- River Corridors & Flood Map
- Energy Map

Town of Troy, VT
Base Map

10/25/2019



- Peaks
- Single Family Home
- Multi-Family Dwelling
- Commercial Building
- Lodging
- Farm
- Industrial Building
- Government Building
- School
- Fire Station
- House of Worship
- Cemetery
- Public Gathering Place
- Cutural
- Other Building
- Solar Facility
- Communications Tower
- Gravel Pit
- State Highway
- Paved Town Road
- Unpaved Town Road
- Class 4 Town Road
- Legal Trail
- Private Roads & Driveways
- Rail Lines
- Pipeline
- Major Electric Transmission Line
- Streams
- Lakes, Ponds, and Rivers
- Troy Census Designated Place
- Village Boundary
- Town Boundary
- Parcel Boundaries - 2014
- Easement Only

Protected Lands

- Troy
- State
- Vermont Land Trust
- Vermont River Conservancy

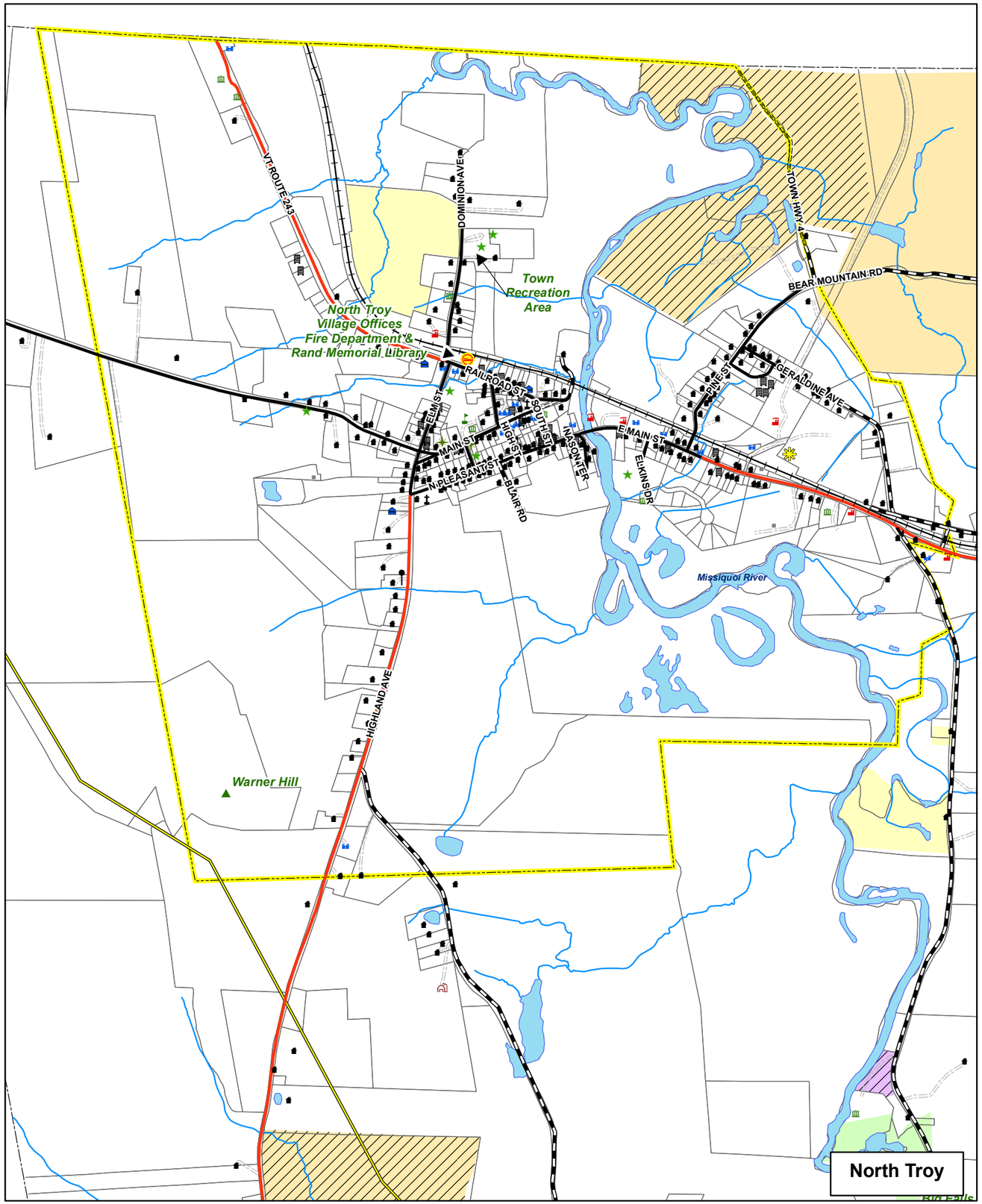
0 1 2 Miles

Warning- This Data is for planning purposes only and does not replace a survey and/or engineering study. Because this map is developed from various scale sources, there may be some discrepancies between data layers.

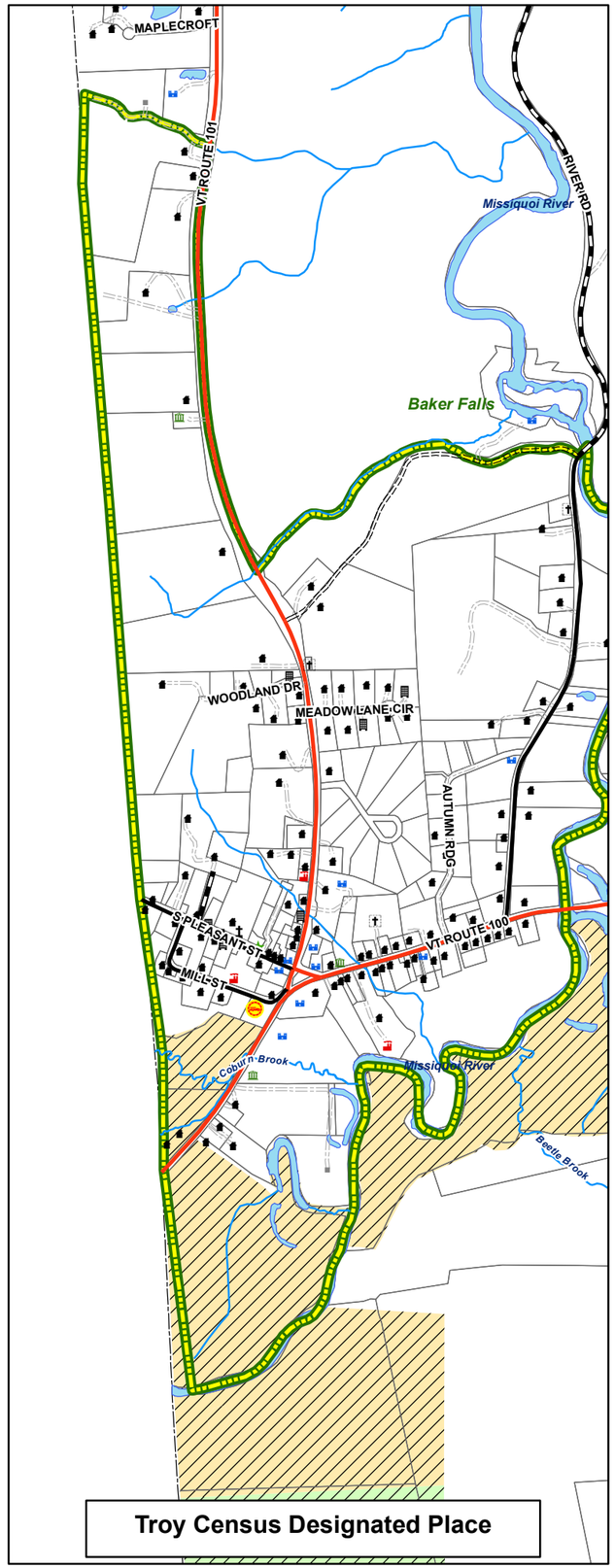
NVDA Northeastern Vermont Development Association

Town of Troy, VT
Insets Base Map

03/13/2020



North Troy



Troy Census Designated Place

- Peaks
- Single Family Home
- Multi-Family Dwelling
- Commercial Building
- Lodging
- Farm
- Industrial Building
- Government Building
- School
- Fire Station
- House of Worship
- Cemetery
- Public Gathering Place
- Cutural
- Other Building
- Solar Facility
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- Unpaved Town Road
- Class 4 Town Road
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- Rail Lines
- Pipeline
- Major Electric Transmission Line
- Streams
- Lakes, Ponds, and Rivers
- Troy Census Designated Place
- Village Boundary
- Town Boundary
- Parcel Boundaries - 2014
- Easement Only

Protected Lands

- Troy
- State
- Vermont Land Trust
- Vermont River Conservancy

0 — 0.5 Miles

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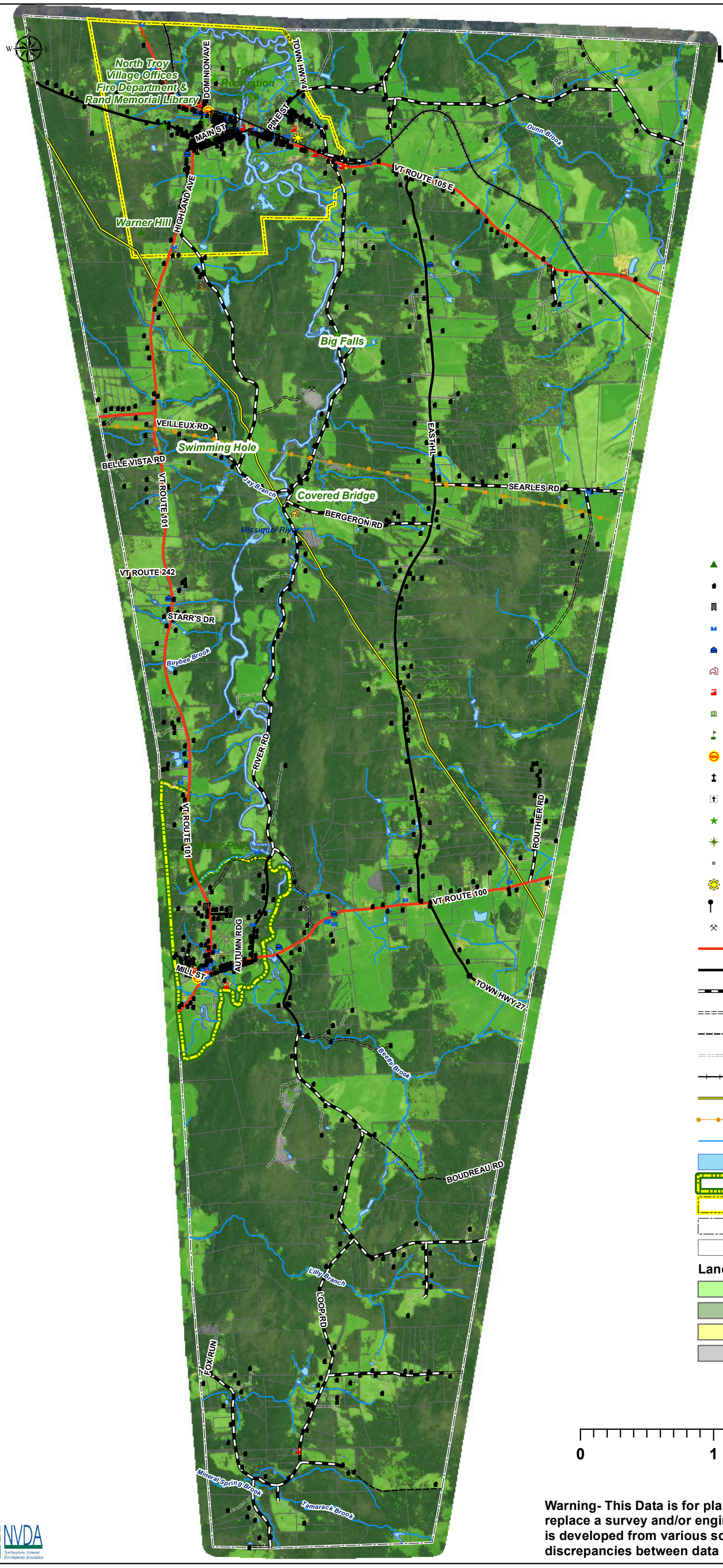
Town of Troy, VT
Land Cover/Use Map

10/25/2019



- Peaks
- Single Family Home
- Multi-Family Dwelling
- Commercial Building
- Lodging
- Farm
- Industrial Building
- Government Building
- School
- Fire Station
- House of Worship
- Cemetery
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- Unpaved Town Road
- Class 4 Town Road
- Legal Trail
- Private Roads & Driveways
- Rail Lines
- Pipeline
- Major Electric Transmission Line
- Streams
- Lakes, Ponds, and Rivers
- Troy Census Designated Place
- Village Boundary
- Town Boundary
- Parcel Boundaries - 2014

Land Cover Types

- Open/Agricultural
- Forested
- Developed
- Barren

0 1 2 Miles

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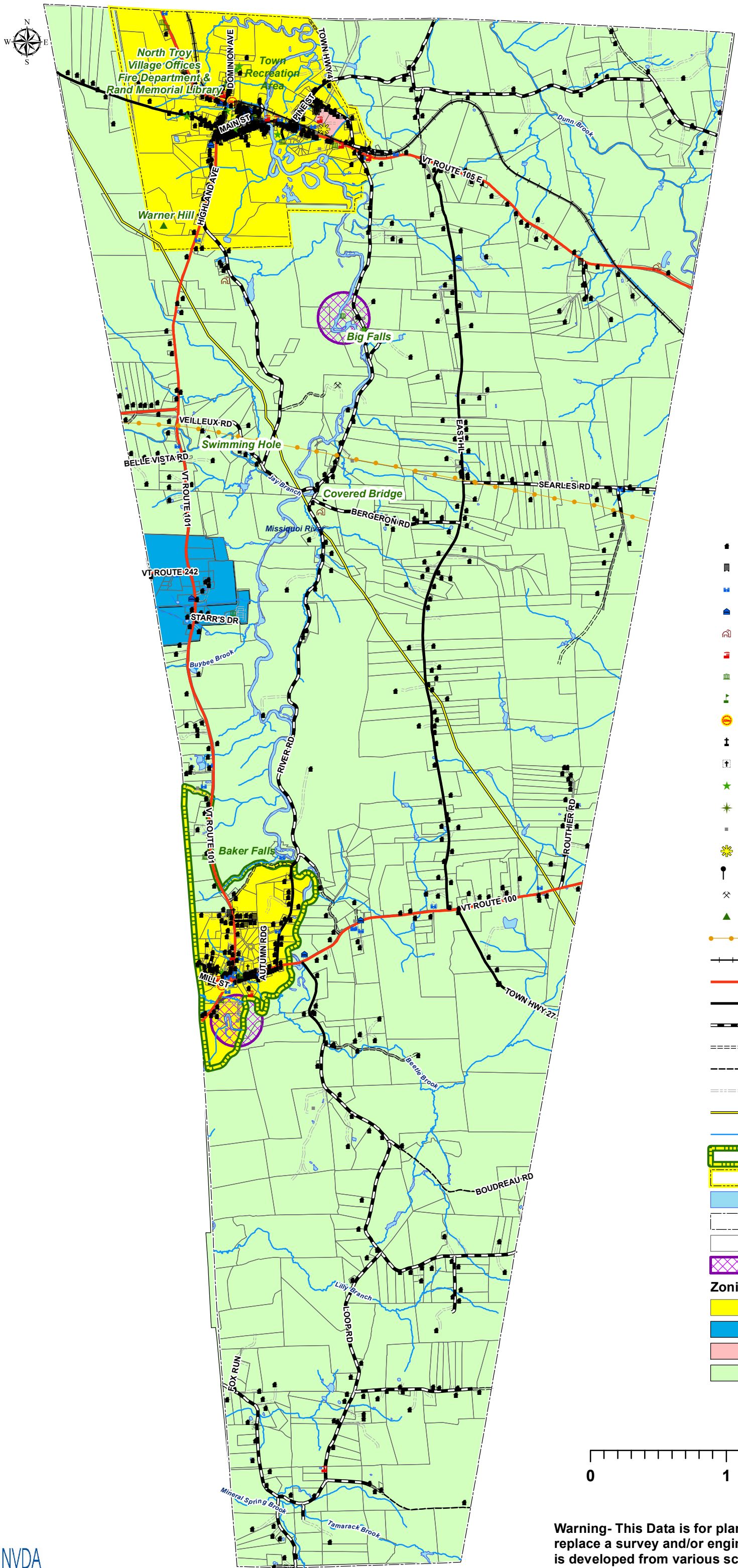
NVDA Northeastern Vermont Development Association

Town of Troy, VT
Zoning District Map

10/25/2019



- Single Family Home
- Multi-Family Dwelling
- Commercial Building
- Lodging
- Farm
- Industrial Building
- Government Building
- School
- Fire Station
- House of Worship
- Cemetery
- Public Gathering Place
- Cutural
- Other Building
- Solar Facility
- Communications Tower
- Gravel Pit
- Peaks
- Major Electric Transmission Line
- Rail Lines
- State Highway
- Paved Town Road
- Unpaved Town Road
- Class 4 Town Road
- Legal Trail
- Private Roads & Driveways
- Pipeline
- Streams
- Troy Census Designated Place
- Village Boundary
- Lakes, Ponds, and Rivers
- Town Boundary
- Parcel Boundaries - 2014
- Wellhead protection Overlay

Zoning Districts

- Village
- Commercial/Residential
- Industrial
- Rural

0 1 2 Miles

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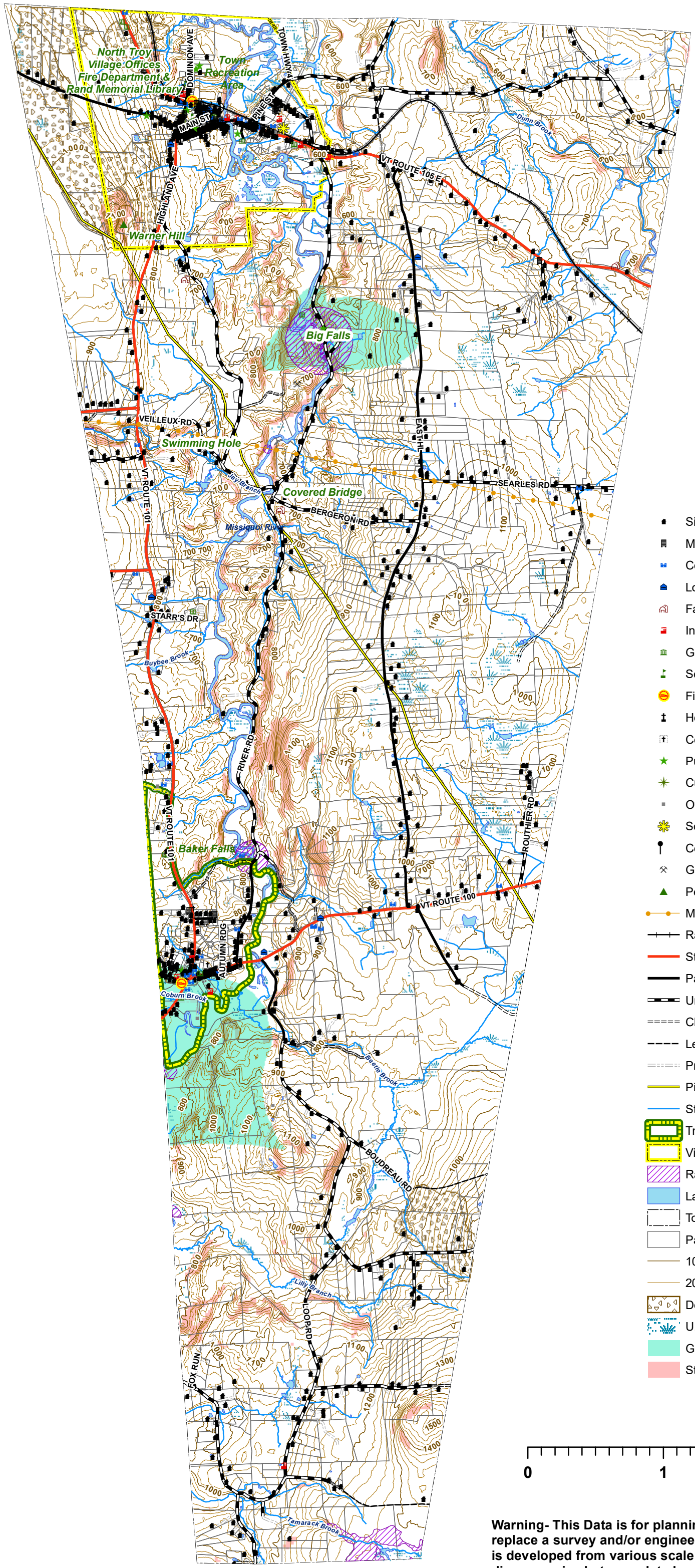
NVDA Northeastern Vermont Development Association

Town of Troy, VT
Natural Resource Constraints Map

10/25/2019



- Single Family Home
- Multi-Family Dwelling
- Commercial Building
- Lodging
- Farm
- Industrial Building
- Government Building
- School
- Fire Station
- House of Worship
- Cemetery
- Public Gathering Place
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- Other Building
- Solar Facility
- Communications Tower
- Gravel Pit
- Peaks
- Major Electric Transmission Line
- Rail Lines
- State Highway
- Paved Town Road
- Unpaved Town Road
- Class 4 Town Road
- Legal Trail
- Private Roads & Driveways
- Pipeline
- Streams
- Troy Census Designated Place
- Village Boundary
- Rare/Threatened/Endangered Wildlife Habitat
- Lakes, Ponds, and Rivers
- Town Boundary
- Parcel Boundaries - 2014
- 100' Interval Elevation Contours
- 20' Interval Elevation Contours
- Deer Wintering Areas
- U.S. & Vermont Wetlands
- Groundwater Protection Areas
- Steep Slopes - Over 20%

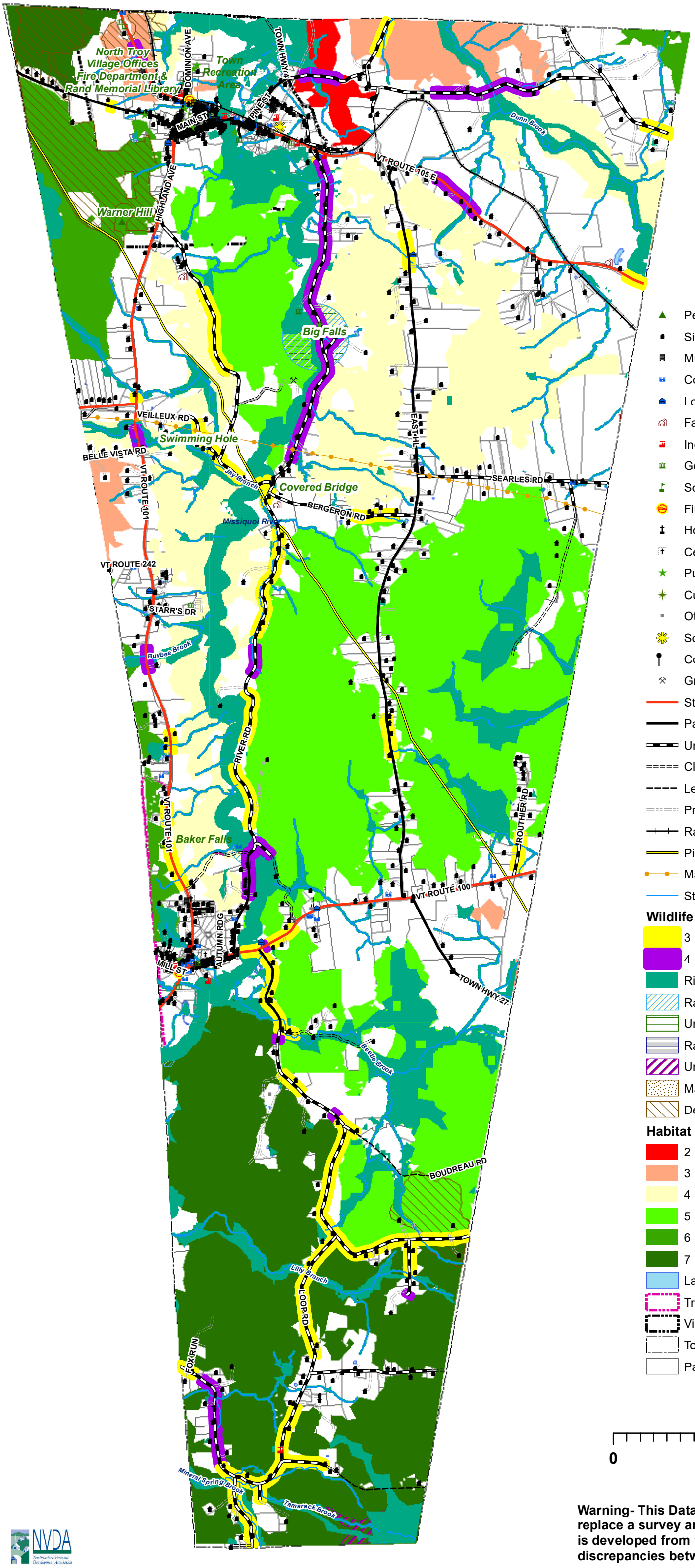
0 1 2 Miles

Warning- This Data is for planning purposes only and does not replace a survey and/or engineering study. Because this map is developed from various scale sources, there may be some discrepancies between data layers.

NVDA
Northeastern Vermont Development Association

Town of Troy
Conservation Priorities Map

10/25/2019



- Peaks
- Single Family Home
- Multi-Family Dwelling
- Commercial Building
- Lodging
- Farm
- Industrial Building
- Government Building
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- State Highway
- Paved Town Road
- Unpaved Town Road
- Class 4 Town Road
- Legal Trail
- Private Roads & Driveways
- Rail Lines
- Pipeline
- Major Electric Transmission Line
- Streams

Wildlife Road Crossings Score (worst to best)

- 3
- 4
- Riparian Wildlife Connectivity
- Rare Species
- Uncommon Species
- Rare Natural Communities
- Uncommon Natural Communities
- Mast Stands
- Deer Wintering Areas

Habitat Blocks Priority Rank

- 2
- 3
- 4
- 5
- 6
- 7
- Lakes, Ponds, and Rivers
- Troy Census Designated Place
- Village Boundary
- Town Boundary
- Parcel Boundaries - 2014

0 1 2 Miles

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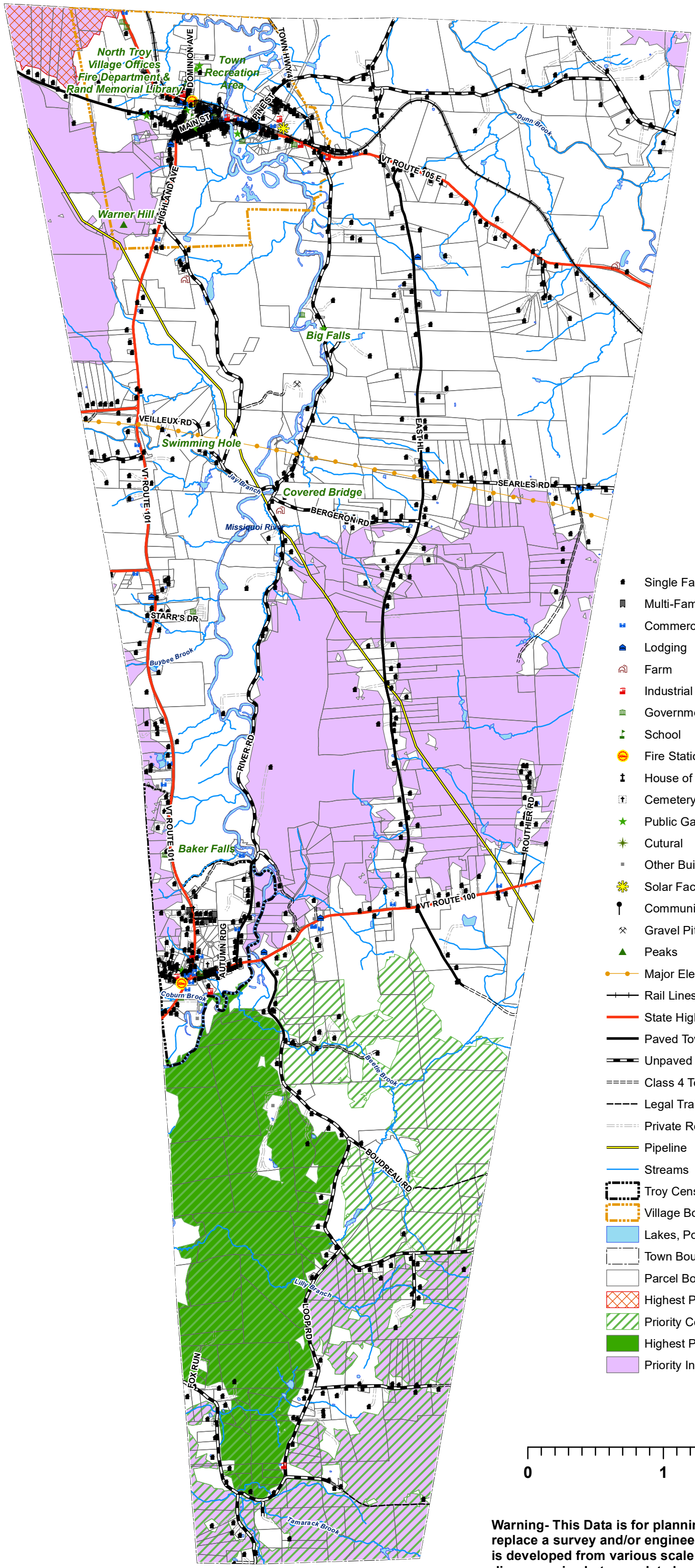
NVDA
Northeastern Vermont Development Association

Town of Troy, VT
Forest Block Map

10/25/2019



- Single Family Home
- Multi-Family Dwelling
- Commercial Building
- Lodging
- Farm
- Industrial Building
- Government Building
- School
- Fire Station
- House of Worship
- Cemetery
- Public Gathering Place
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- Other Building
- Solar Facility
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- Gravel Pit
- Peaks
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- Rail Lines
- State Highway
- Paved Town Road
- Unpaved Town Road
- Class 4 Town Road
- Legal Trail
- Private Roads & Driveways
- Pipeline
- Streams
- Troy Census Designated Place
- Village Boundary
- Lakes, Ponds, and Rivers
- Town Boundary
- Parcel Boundaries - 2014
- Highest Priority Connectivity Blocks
- Priority Connectivity Blocks
- Highest Priority Interior Forest Blocks
- Priority Interior Forest Blocks

0 1 2 Miles

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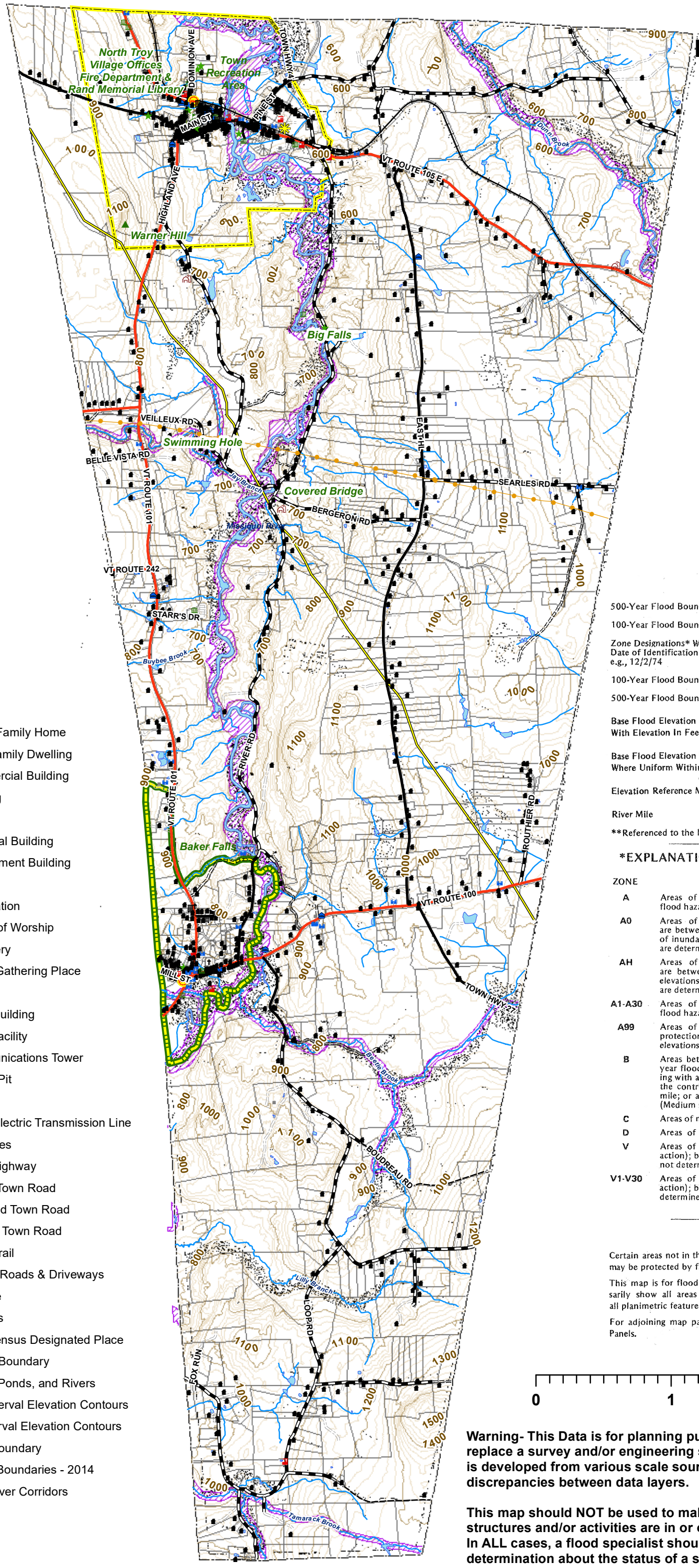
NVDA
Northeastern Vermont Development Association

Town of Troy, VT
River Corridors & Flood Map

10/25/2019



- Single Family Home
- Multi-Family Dwelling
- Commercial Building
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- Legal Trail
- Private Roads & Driveways
- Pipeline
- Streams
- Troy Census Designated Place
- Village Boundary
- Lakes, Ponds, and Rivers
- 100' Interval Elevation Contours
- 20' Interval Elevation Contours
- Town Boundary
- Parcel Boundaries - 2014
- ANR River Corridors

KEY TO MAP

500-Year Flood Boundary	ZONE B
100-Year Flood Boundary	ZONE A1 DATE / ZONE A5 DATE
Zone Designations* With Date of Identification e.g., 12/2/74	
100-Year Flood Boundary	
500-Year Flood Boundary	ZONE B
Base Flood Elevation Line With Elevation In Feet**	513
Base Flood Elevation in Feet Where Uniform Within Zone**	(EL 987)
Elevation Reference Mark	RM7 ×
River Mile	• M1.5

**Referenced to the National Geodetic Vertical Datum of 1929

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.

For adjoining map panels, see separately printed Index To Map Panels.

0 1 2 Miles

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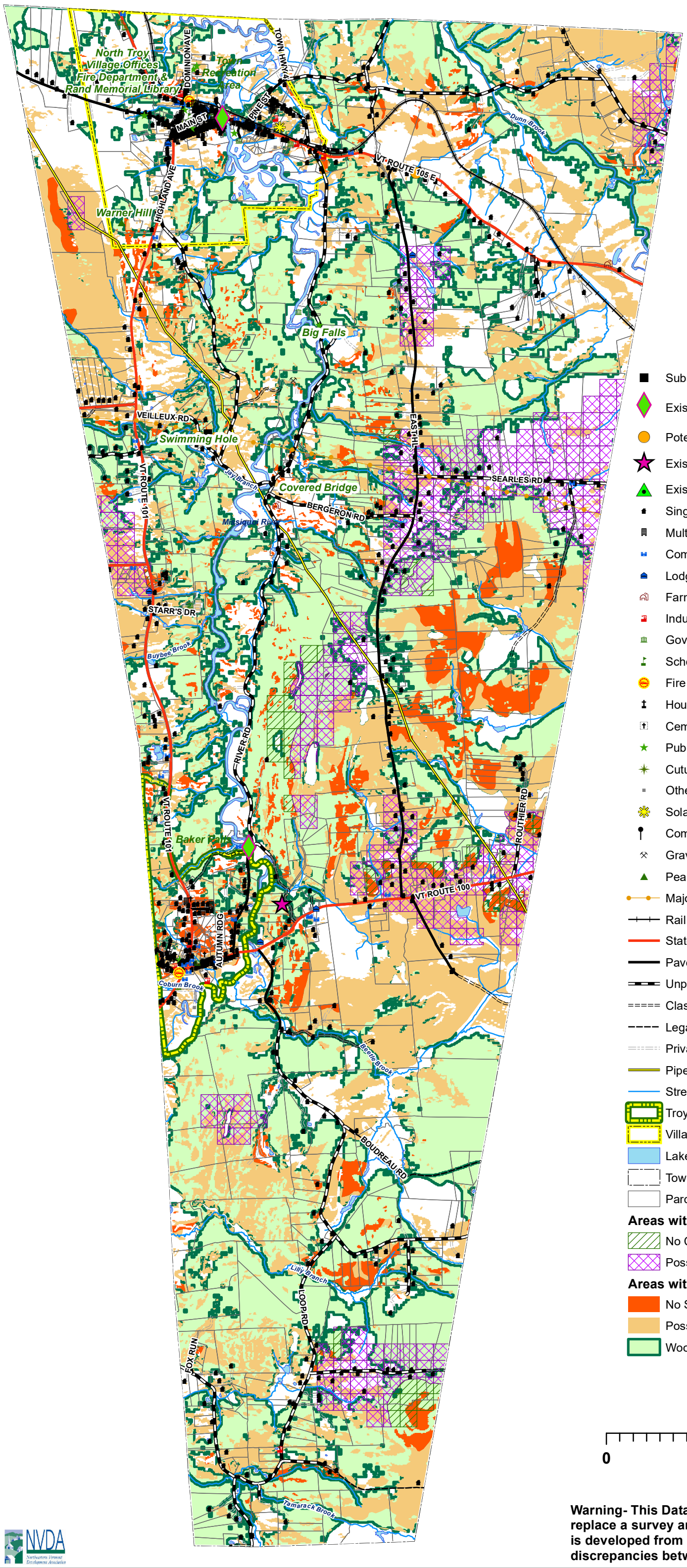
This map should NOT be used to make determinations about whether structures and/or activities are in or out of a flood hazard area. In ALL cases, a flood specialist should be contacted to make any determination about the status of a structure or proposed structure.

NVDA Northeastern Vermont Development Association

Town of Troy, VT
Energy Map

10/25/2019



- Substation
- Existing Hydroelectric Facilities
- Potential Hydroelectric Facilities
- Existing Solar Sites
- Existing Wind Power Site
- Single Family Home
- Multi-Family Dwelling
- Commercial Building
- Lodging
- Farm
- Industrial Building
- Government Building
- School
- Fire Station
- House of Worship
- Cemetery
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- Parcel Boundaries - 2014

Areas with good potential for wind power generation

- No Constraint
- Possible Constraint

Areas with good potential for solar power generation

- No State Constraint
- Possible State Constraint
- Woody Biomass Resource Areas

0 1 2 Miles

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NVDA
Northeastern Vermont Development Association