

Chapter 2. Description of the Study Area



This chapter describes the area of Study including: the four segments in the Study, the regional setting, the land use, and the municipalities within the Study area.

Description of the Study Area

The Missisquoi and Trout Rivers flow through mixed forests, working landscapes and small villages in northern Vermont. The Study rivers border the northern Green Mountains, some of Vermont's highest peaks.

The land use in the Missisquoi River watershed is 66% forested, 25% agricultural, and 6% urban. The Trout River watershed is 84% forested, 7% agricultural and 3% urbanized. Land use information retrieved from Vermont Center for Geographic Information (VCGI) land use layers.

The Missisquoi and Trout Rivers and their tributaries provide many resources to the communities through which they flow including cultural, scenic, recreational, and water resource values. For example, these rivers support a diverse fishery, with a mix of high elevation cold-water streams as well as slower-flowing warm water

The Study area includes 25 miles of the Missisquoi from Lowell to Canada, 25 miles of the Missisquoi from Richford to Enosburg Falls, and 20 miles of the Trout River from Montgomery to East Berkshire.

reaches. The varied fish habitat and relative ease of access to many sections of rivers and streams create significant opportunities for recreational fishing in the Missisquoi watershed. The Missisquoi River and its many tributaries are also popular for boating, swimming and wildlife viewing, and provide an important water resource for human use including drinking water and agricultural needs.

PUBLIC LAW 111–11 (MAR. 30, 2009) required the study of the following river segments:

[Segment 1] The approximately 25-mile segment of the upper Missisquoi from its headwaters in Lowell to the Canadian border in North Troy (including the East Branch of the Missisquoi River tributary).

[Segment 2] The approximately 25-mile

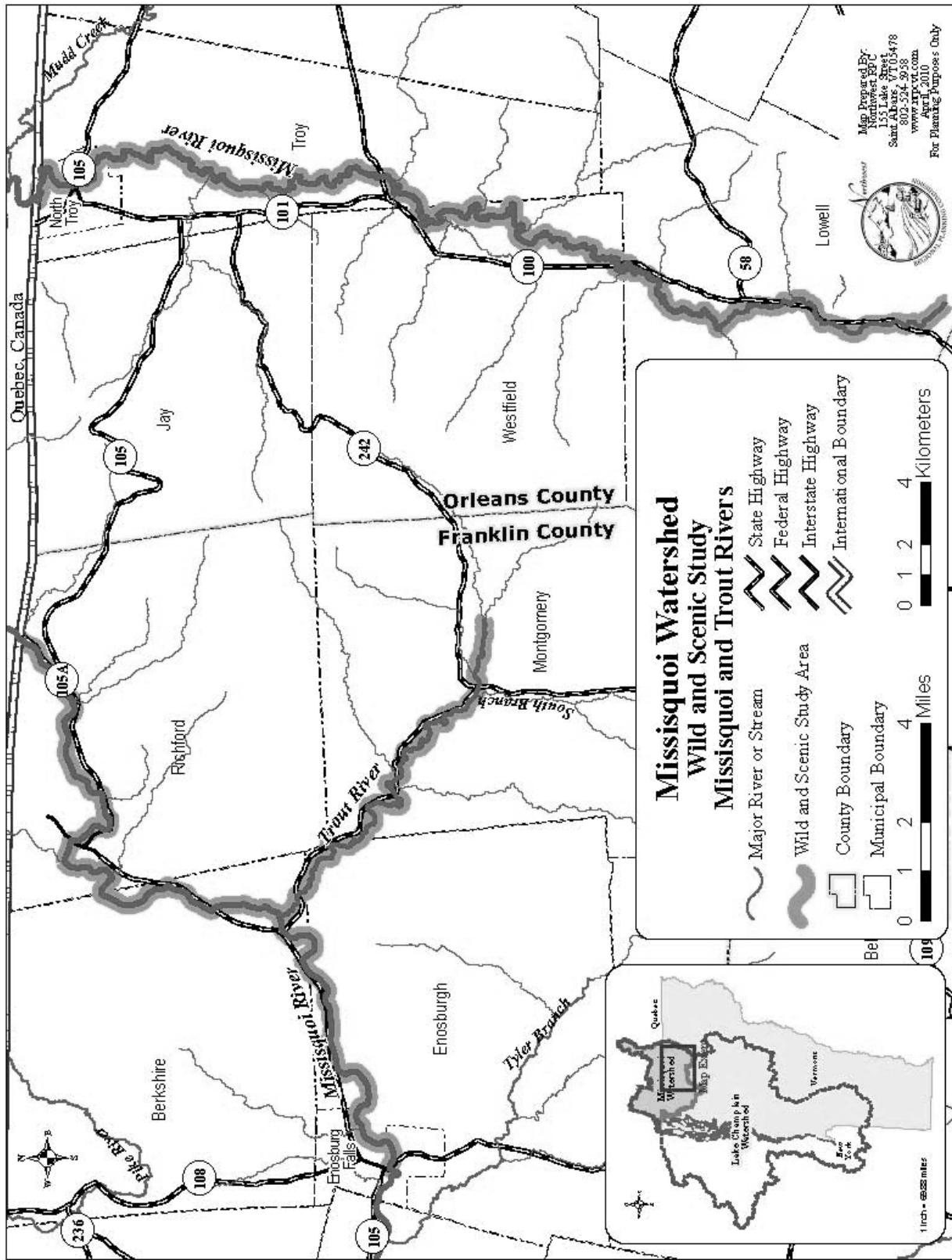


Figure 5. The Upper Missisquoi and Trout Rivers Wild and Scenic Study Area.

segment from the Canadian border in East Richford to Enosburg Falls (to the dam in Enosburg Falls).

[Segment 3] The 20-mile segment of the Trout River from its headwaters to its confluence with the Missisquoi River (including the South Branch of the Trout River tributary).

In addition, based on local interest of the Study Committee, local communities, and stakeholders, major tributaries (typically 3rd order and larger) were assessed for their water quality, contribution to potential ORVs, and management significance. Collectively, these tributaries of the upper Missisquoi and Trout Rivers, as detailed later in this Report, are referred to as Segment 4.

[Segment 4] The tributaries of the upper Missisquoi and Trout Rivers.

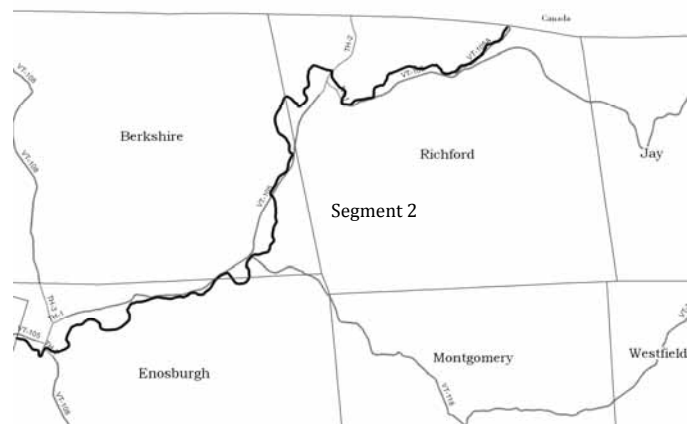
Segment by Segment Study Area Description

[Segment 1: Headwaters in Lowell to North Troy/ Canadian Border] The Study area begins in Lowell, VT, on the northern side of Hazen’s Notch Road. The Missisquoi River flows north from Lowell through the municipalities of Westfield, Troy and North Troy, VT. This section of the river meanders through agricultural fields and forests, and includes rare Serpentine bedrock outcroppings and silver maple floodplain



forests. There are several riffles and water features in this section, most notably Big Falls in North Troy. Big Falls is the largest undammed waterfall in Vermont and is part of Big Falls State Park. Once the river flows over Big Falls and through its gorge, it passes into Canada and eventually reenters the United States in Richford, VT. There are many points of access along the river in this stretch for recreation including boating, fishing and swimming.

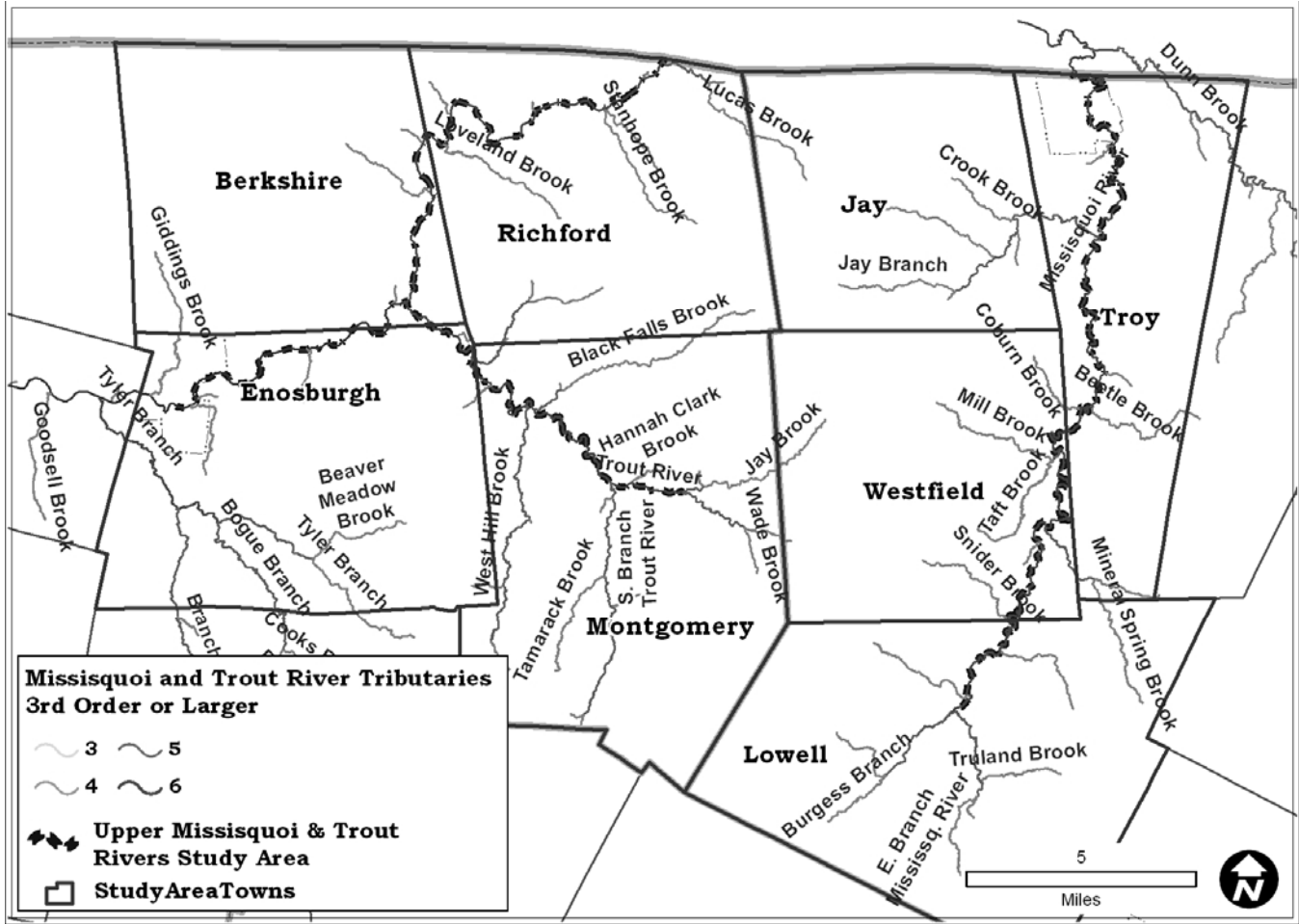
[Segment 2: Border/Richford to Enosburg Falls] The Study area also includes the Missisquoi River after



reentry into the U.S. from Canada in Richford, VT. The river is larger in this section, and predominantly flows through a working agricultural landscape and two downtown historic districts in Richford and Enosburg Falls. This segment also borders the Green Mountains as well as local farmlands. This stretch of the Missisquoi is also part of the Northern Forest Canoe Trail and has five official Trail access points. This section ends in Enosburg Falls.

[Segment 3: Trout River] The Trout River’s headwaters begin in the Town of Montgomery. It flows through Enosburg before it joins the Missisquoi River in East Berkshire. Agriculture is the dominant land use along the main stem of the Trout River, but the reaches upstream of Montgomery Center are mainly forested. This segment has a high density of waterfalls, swimming holes, and covered bridges.

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[Segment 4: Tributaries] Many portions of the Study rivers and their tributaries have been noted as exhibiting high water quality by the Vermont Agency

of Natural Resources. Because of their importance in maintaining the water quality in and providing valuable resources for the Missisquoi and Trout Rivers, the tributaries were included in the Study. In addition to maintaining the water quality of the region, they also include notable recreational, scenic and cultural features, including swimming holes, waterfalls, and covered bridges, which are potential Outstandingly Remarkable Values.

The Study Committee looked at the following tributaries in detail (listed by municipality):

- ≈ Berkshire: Berry Brook and Trout Brook
- ≈ Enosburgh/Enosburg Falls: Beaver Meadow Brook
- ≈ Jay: Jay Branch
- ≈ Lowell: Burgess Branch and East Branch of the Missisquoi River

- ≈ Montgomery: Black Falls Brook, Hannah Clark Brook, Jay Brook, South Branch of the Trout River, Tamarack Brook, Wade Brook and West Hill Brook
- ≈ Richford: Berry Brook, Black Falls Brook, Loveland Brook and Stanhope Brook
- ≈ Troy/North Troy: Beetle Brook and Cook Brook
- ≈ Westfield: Coburn Brook, Mill Brook, Mineral Spring Brook and Taft Brook.

The map on page 14 shows the tributaries to the Missisquoi and Trout Rivers which are 3rd order streams or larger.

Regional Setting - Relation to the Missisquoi River Basin; Linkage to Lake Champlain and the Missisquoi National Wildlife Refuge

The Missisquoi River is the primary tributary of Missisquoi Bay in Lake Champlain. Missisquoi Bay contains the Missisquoi National Wildlife Refuge, a 6,729 acre area on the Missisquoi River delta that provides important wetland and forest habitat for waterfowl, migrating songbirds, many species of mammals and other wildlife. Although this lower section of the Missisquoi is downstream of the Study area, the quality of water passing through tributaries and the upstream reaches of the Missisquoi River is critical for maintaining habitat supportive of these species not to mention human use.

Water Quality Characteristics - Missisquoi Basin Watershed Water Quality Management Plan

Watershed management is under the purview of the Vermont Agency of Natural Resources,(ANR) Department of Environmental Conservation's Watershed Management Division. The Division representatives worked in partnership with the Committee to provide the most up to date information on the watershed and water quality issues.

During the Wild and Scenic Study, the Watershed Management Division completed the *Missisquoi Basin Watershed Water Quality Management Plan*, which describes the current state of the Missisquoi River Basin, addresses water quality issues in the watershed

and outlines plans to improving both water quality and aquatic habitat. The Study Committee and Watershed Management Division coordinated efforts with the common goals of protecting water quality. More information may be found in Chapter 4 of this Report.

Study Area Municipalities

Franklin County

- Berkshire - The Missisquoi River flows through the Town of Berkshire that has a population of around 1,400 people (according to the 2000 Census). The current Town Plan was adopted in 2010 and describes Berkshire as located in the northeast corner of Franklin County, which is in turn situated in northwestern Vermont, and is bounded by the Province of Quebec to the north, the Town of Franklin to the west, the Town of Richford to the east, and the Town of Enosburgh and the incorporated Village of Enosburg Falls to the south. The Town of Berkshire covers more than forty-three square miles of land. Berkshire is predominantly a rural town lying within the eastern sub-region of the Northwest Region of Vermont. It is recognized within the Regional Plan as one of the most important agricultural towns in Franklin County.
- Enosburgh/Enosburg Falls - The Missisquoi River flows through the Town of Enosburgh (population around 2,800) and the Village of Enosburg Falls (population around 1,500). Enosburgh's current Town Plan was approved in 2008 and describes Enosburgh as located in the northwestern part of the State of Vermont in Franklin County and is bordered by seven towns: Montgomery to the east; Richford to the northeast; Berkshire to the north; Franklin to the northwest; Sheldon to the west; Fairfield to the southwest; and Bakersfield to the south. Enosburgh covers a total of 30,925 acres or approximately forty-eight square miles. The Village of Enosburg Falls is part of the Town for purposes of the Town Plan and vote at Town Meeting day regarding Wild and Scenic designation. The Enosburgh Town Plan states "The Village...is the primary social and

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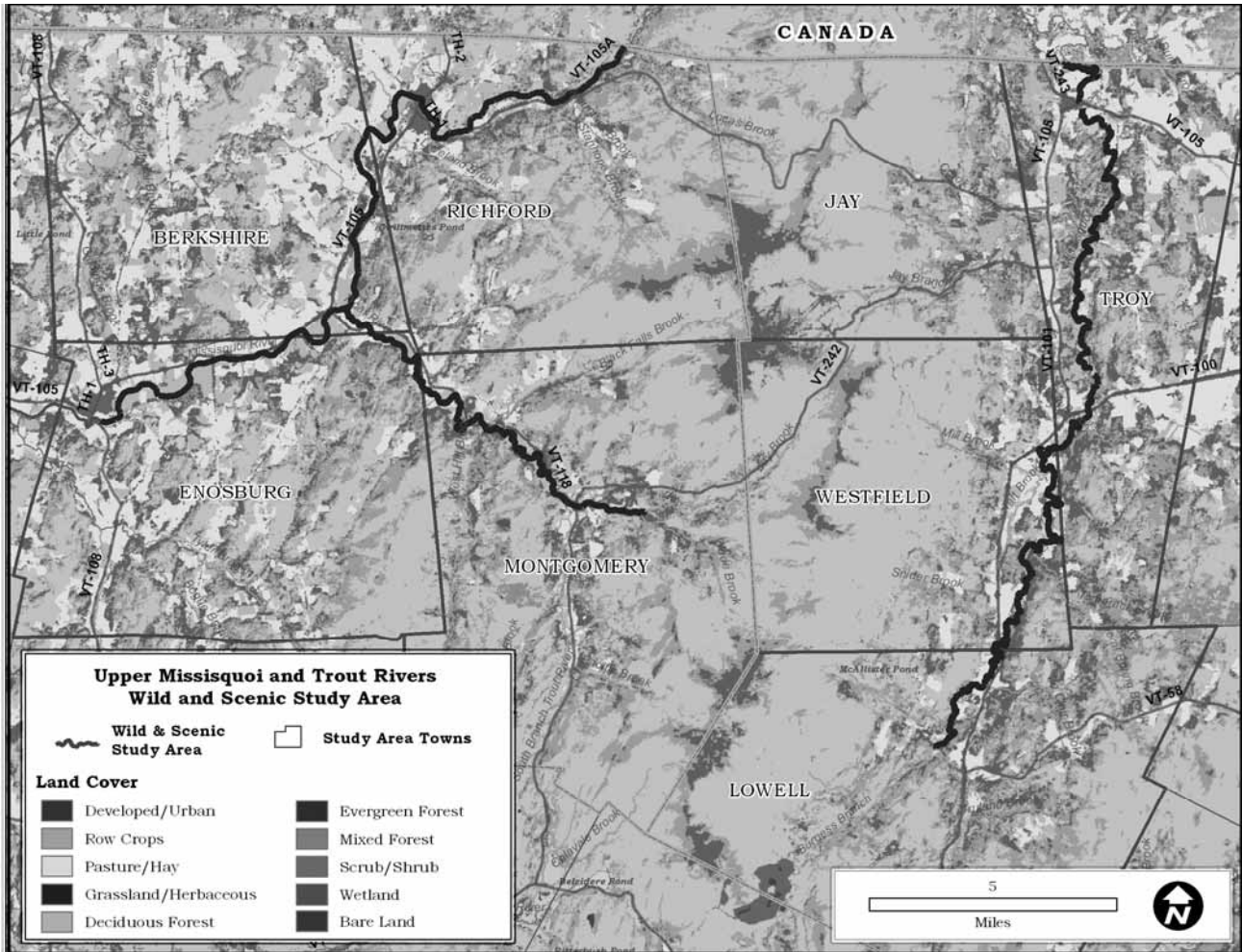


Figure 6. Land use in the Study area. 2006 data, available from NOAA: www.csc.noaa.gov/crs/lca/northeast.html

commercial center for the Town. Enosburg Falls has its own Municipal Plan and Planning Commission and conducts all its own business separate from the Town. Although a separate governmental entity, the Village is included as part of the Town for the purposes of the Town Plan.” The current Village Plan was also adopted in 2008 and describes Enosburg Falls as located in the northwestern corner of the Town of Enosburgh in central Franklin County. The Village is bounded by the Towns of Berkshire, Franklin, Sheldon, and Enosburgh. The Village occupies 3.6 square miles of land area.

- **Montgomery-** The Trout Rivers flows through the Town of Montgomery (population around 1,000). Montgomery’s current Town Plan was approved and adopted in 2010 and describes Montgomery

as located in the northwestern part of the State of Vermont in Franklin County. It is bordered by the following eight towns: Richford, Enosburg, and Bakersfield in Franklin County, Belvidere and Eden to the south, and Lowell, Westfield, and Jay to the east. Montgomery covers a total of 57 square miles.

- **Richford-** The Missisquoi River flows through the Town of Richford (population around 2,300). The current 2007 Town Plan describes Richford as around 43 square miles and located in the northwestern part of the State of Vermont in Franklin County and is bordered by five towns: Jay to the east; Westfield to the southeast; Montgomery to the south; Enosburgh to the southwest; and Berkshire to the west.

Orleans County

- Jay– Jay Branch, a major tributary to the Missisquoi River flows through the Town of Jay. Jay was included in the Study due to the significance of Jay Branch, and the Town’s location between all other Study area municipalities. Jay has a population of around 521 people (according to the 2000 Census). The current Town Plan was adopted in 2010 and describes Jay as a rural community of 34 square miles. The Town of Jay is bordered by Canada to the north and the town of Troy to the East, Westfield to the South and Richford to the West.
- Lowell- The headwaters of the Missisquoi River flow through the Town of Lowell that has a population of around 879 people and an area of 56 square miles. The current Town Plan was adopted in 2009 and describes Lowell a rural community where forestry is the predominate land use. The Town of Lowell is bordered by seven towns: Albany, Eden, Irasburg, Montgomery, Newport Center, Troy, and Westfield.
- Troy/North Troy - The Missisquoi River flows through the Town of Troy (population around 1,700) and the Village of North Troy (population around 620). Troy and North Troy have a combined Town Plan. This current Town Plan was approved in 2008 and describes these municipalities as located on the Canadian Border in North Central Vermont 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. Troy covers a total of approximately 36 square miles. The Village of North Troy is part of the Town for the purpose of Town Planning and voting on Wild and Scenic designation. The Troy Town Plan states “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 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.” The Town Plan describes North Troy as around 2 square miles.
- Westfield- The Missisquoi River flows through the Town of Westfield that has a population of around 536 people (according to the 2000 Census). Their current Town Plan was adopted in 2009 and describes Westfield as approximately 40 square miles bordered by five towns: Montgomery, Lowell, Troy, Jay, and Richford.

