

**Chittenden County Regional Planning Commission
Town of Richmond**

**Vermont Route 2 Bicycle and Pedestrian
Scoping Report**

Existing Conditions



Submitted by:
Stantec Consulting

In conjunction with
**Broadreach Planning & Design
Heritage Landscapes LLC**

June 4, 2013

A. INTRODUCTION

1. OVERVIEW

The Town of Richmond has long contemplated a better bicycle and pedestrian link between Richmond Village and the Richmond Park & Ride on Route 2 close to Interstate 89 Exit 11. The Chittenden County Regional Planning Commission (CCRPC) has been able to assist with funding to study the feasibility of creating such a connection. The CCRPC staff is providing project management on behalf of the Town of Richmond.

With the assistance of the Town, the CCRPC organized a Steering Committee (SC) of local officials and citizens to provide direction for the study. The CCRPC selected a Consulting Team (CT) from their list of on-call consultants to help them with the feasibility study; the team is led by Stantec Consulting Service and supported by Broadreach Planning & Design and Heritage Landscapes LLC.

The Study Area for this project extends in the east from the center of Richmond Village and Bridge Street west to the Route 2 Checker Bridge over the Winooski River and from the southern edge of the Interstate right-of-way on the north to the Winooski River on the south. **Figures A1** and **A2** show the location of the project and the general extent of the Study Area.

This summary report is the first product of the work of the SC and the CT. The summary describes the existing conditions in the Study Area. The report is formatted for double-sided printing; blank pages are intentional.

2. PURPOSE AND NEED

The purpose of the Route 2 bicyclist and walker project is to create improved walking and bicycling conditions between Richmond Village and the Richmond Park & Ride, especially for commuters, and to consider better bicycling and walking access and connections to the other destinations within or adjacent to the Study Area, including the Richmond Elementary School and Camel's Hump Middle School.

Needs for the improvements include:

- The minimal shoulders and poor pavement conditions on Route 2 in the Study Area;
- The poor existing conditions for bicycle commuters which make the trip between the Village and the Park & Ride to reach the transit service there; and
- The lack of comfortable, convenient walking facilities along Route 2.

3. PROJECTED USERS

While the primary focus of the study is to make it easier for walkers and bicyclists to reach the Park & Ride, Richmond officials would also like to improve bicycling and walking conditions for people of all ages and abilities. This means that as much as possible, the improvements should be usable by school children, elderly citizens and those with disabilities, as well as experienced bicyclists and walkers.

The following sections provide more information on the abilities and needs of the different types of walkers and bicyclists.

Walkers: People vary significantly in their walking skills, experience, and willingness to walk different distances. Strong determining factors for walkers are the time and mobility required to reach their destinations. Time and mobility constraints also dictate their usable geographic space; few walkers will venture more than one mile from point to point; most will only undertake trips shorter than ½ mile, unless the trip is recreational or there is some visible destination or landmark.

There are three basic types of walkers:

- Active walkers,
- Basic walkers, and
- Circumscribed walkers.

Active walkers use the road system regularly for transportation, as well as for fitness. They know and generally follow the rules of the road. *Basic walkers* include the majority of older children and healthy adult walkers. *Circumscribed walkers* are those whose speed and mobility are extremely limited. In all cases, when walking on roads, people should walk FACING traffic on the left side of the road in the direction of travel for safety and visibility reasons, in addition to the fact that it is Vermont State Law.

Bicyclists: Among bicyclists, there are three typical user groups that can be expected to use the bicycle facilities:

- Advanced bicyclists,
- Basic bicyclists, and
- Beginner bicyclists or children.

Advanced bicyclists are highly experienced bicycle riders who feel comfortable riding their bikes in heavy traffic and typically prefer to ride on roadways. *Basic bicyclists* comprise the largest category of bicycle riders, including older children, inexperienced adult riders, occasional bicycle commuters, recreational adult bicyclists and experienced riders who still fear or dislike riding in heavy traffic conditions. Basic bicyclists are reasonably competent in handling their bicycles and they generally understand the rules of the road, but they ride at more moderate speeds and are generally uncomfortable on busy streets unless a striped,

obstacle-free shoulder is provided and traffic volumes are low. *Beginner bicyclists* have the weakest bicycling skills. Beginner bicyclists ride more slowly, don't always understand the rules of the road, and are typically uncomfortable riding with motor vehicles. They are best accommodated on low-speed local roads and multi user paths or even sidewalks for the very young where there are few, if any driveway crossings.

When riding on roadways, bicyclists should always ride with traffic on the right side of the road in the direction of travel. Unless the road is clear, bicyclists should ride single file.

4. ORIGINS, DESTINATIONS & TRAVEL PATTERNS

In addition to the Village center and the Park & Ride, there are several other important destinations within the Study Area for walkers and bicyclists. **Figures B1** and **B2** show the locations of these areas. In addition to these larger destinations, there are several smaller businesses as well as residences that also serve as origins or destinations for walking or bicycling trips.

B. LAND USE

The Study Area includes residential, institutional, commercial and recreational land uses. Outside of agricultural use of the land, the largest land use type in the Village is residential, while most land uses further west on Route 2 are commercial. **Figures B1** and **B2** show the larger land use types within the Study Area.

C. TRANSPORTATION FACILITIES

1. OVERVIEW

The Study Area is focused on US Route 2 (Route 2) between the Richmond Village and the intersection with VT Route 117. There are several intersections along this portion of Route 2; heading from north to south, they include:

- Route 117,
- The northbound entrance and exit ramps for Interstate 89,
- The southbound exit ramp and entrance to the Park & Ride lot,
- The southbound entrance ramp to Interstate 89,
- Baker Street,
- Millet Street, and
- Jericho Road/Bridge Street.

Figures C1 and **C2** show the general location of the transportation facilities in the Study Area.

2. ROUTE 2 ROADWAY DATA

Route 2 in Richmond is functionally classified by the Vermont Agency of Transportation (VTTrans) as a Major Collector on a State Highway. The posted speed varies from 40 miles per hour (mph) to 50 mph along the rural portion of the corridor and drops to 30 mph through the Village.

Throughout the corridor, Route 2 generally consists of two 12-foot travel lanes with varying shoulder widths from one to six feet. By the park & ride and extending southerly to just past the first curve in the road, the pavement width varies from 34 to 36 feet. From that point on, the roadway width varies from 28 to 30 feet to the Village where the road widens for on-street parking. The Richmond Trails Committee has mapped the shoulder widths more specifically between the southbound Interstate entrance ramp and the Jericho Road/Bridge Street intersection.

In the Village, the roadway is curbed and has five-foot wide sidewalks on both sides of the road. A five-foot wide grass strip separates the sidewalk and the roadway on the south side of the road in this area. On the north side there is about 150 feet of on-street parking just prior to the intersection with Jericho Road and Bridge Street.

The roadway surface is in poor condition throughout the project area. VTTrans intends to resurface the roadway in 2015. Current plans for the resurfacing include widening the shoulders to at least three feet wide and up to four feet wide where possible.

The roadway is relatively level with a maximum grade of 7 percent for a short distance heading into the Village. Banks along each side of the road are steep throughout the majority of the project corridor. Generally the banks slope downhill from east to west and can drop as much as 20 feet. Guard rails line the sides of the road where the slopes are significant.

Two intersections along the corridor are signalized: Route 2 at VT Route 117 at the northwestern end of the Study Area and Route 2 at Jericho Road and Bridge Street in Richmond Village center.

3. ROUTE 2 RIGHT-OF-WAY WIDTHS

In general, the right-of-way (ROW) limits are 33 feet from the centerline for a 66-foot wide ROW. The ROW limits begin the typical 33 feet from centerline at approximately 650 feet south of the gas station by the Park & Ride. In the area by the interstate interchange, the ROW limits are 55 feet to the east and 41 feet to the west.

4. ROUTE 2 TRAFFIC VOLUMES

Table A summarizes the Average Annual Daily Traffic (AADT) for segments of Route 2 within the study area. AADT's are as reported by VTrans 2010 (Route Log) AADT's for State Highways. Additionally, according to the 2011 Automatic Vehicle Classification Report, the peak average of truck traffic was reported at 4.0% in the project area which is below average for Major Collectors in Vermont.

Table A1: AADT by Roadway Segment

	<u>AADT</u>	<u>Year</u>
VT 117 to I89 NB on and off ramps	8,100	2010 E
I89 NB on and off ramps to I89 SB off ramp	7100	2010 E
I89 SB off-ramp to I89 SB on ramp	5,900	2010 E
I89 SB on ramp to Baker St.	8,500	2010
Baker St. to Bridge St/Jericho Rd	8,700	2010 E

E = Estimated

5. CRASH HISTORY

The Study Area includes one intersection and three roadway segments that are High Crash Locations (HCL) as reported in the most recent VTrans HCL report from 2006-2010. **Table B** provides a summary from this listing. **Figures C1** and **C2** show the locations of these HCLs.

These locations are considered to be HCLs because they have had at least five crashes over a five-year period and the actual crash rate, the number of crashes per million vehicles, exceeds the critical crash rate. The critical crash rate is based on the average crash rates of similar roadways in Vermont and is related to the functional class of a highway and whether it is located in an urban or rural area.

Over the same five-year period there was a single pedestrian-related crash within the project area reported in the vicinity of the intersection with Bridge Street (13 W Main St.). The accident resulted in a non-incapacitating injury.

Table B: High Crash Information

<u>Ranking (Int/Segment)</u>	<u>Location</u>	<u># Crashes</u>	<u>Injuries</u>	<u>Fatalities</u>	<u>Actual/Critical Ratio</u>	<u>Severity</u>
13 (Intersection)	Bridge Street/Jericho Road	24	4	0	1.972	\$17,600
133 (Segment)	Winooski R. Bridge (MM .853) to Park & Ride –(MM 1.153)	15	9	0	1.805	\$44,187
642 (Segment)	From Park & Ride (MM 1.153) to Curve (MM 1.453)	11	6	0	1.015	\$39,918
632	430 W Main St. (MM 2.353) to 77 W Main St. (MM 2.653)	11	1	0	1.023	\$13,318

5. RICHMOND PARK & RIDE FACILITY

The existing Park & Ride is heavily used and is over capacity as evidenced by vehicles parking in undesignated parking spaces or on lawn areas adjacent to Route 2. According to VTrans' website, the existing Park & Ride has 105 designated spaces. In 2013, VTrans will construct an expansion of the Park & Ride. The project will expand the Park & Ride in all directions and will include 158 parking spaces. It will improve bus access with the addition of a bus loop at the center of the Park & Ride and includes construction of a new bus shelter and bicycle rack adjacent to the drive. The project includes replacement of the existing lighting with new energy-efficient LED lighting. In addition, it includes the installation of a new traffic signal at the intersection of Route 2 and the southbound off ramp/park-and-ride drive.

D. UTILITIES

Figures C1 and **C2** show the general location of the utilities in the Study Area.

Utility poles owned by Green Mountain Power (GMP) run along the east side of the roadway to the cemetery and move to the western side of the roadway for the rest of the project. GMP has indicated that Comcast and Champlain Valley Communications are co-

located on the poles. A Vermont Electric aerial transmission line crosses the roadway just past the gas station by the Park & Ride and then continues off project limits.

Fairpoint Communications owns an underground fiber optic cable that runs along the west side of the road. Several other utility companies, that have yet to be identified, run in a duct bank along the east side of the road. Waitsfield Telecom has verified their presence in this duct so far.

A natural gas line was recently installed along the eastern side of the roadway for the length of the project. The gas line runs on both sides of the street through the Village.

Water and sewer begin at 222 W. Main Street and head south to the intersection with Bridge Street and Jericho Road. The waterline runs on both sides of Route 2 east from Baker Street.

A closed drainage system exists on the north side of the road in the vicinity of Millet Street. The system crosses to the south side and outlets to an unknown location. There are a total of 11 cross culverts located within the project limits. The largest being an eight-foot by eight-foot concrete box culvert at the intersection with VT Route 117. Swales run along the east and western side of the roadway intermittently.

The Vermont Gas company recently completed a survey of portions of the Study Area in preparation for their gas line extension. **Attachment A** includes portions of this survey, which shows the more specific location of utilities in the Study Area.

E. NATURAL RESOURCES

1. TOPOGRAPHY

The topography in the Study Area is generally level, being in the Winooski River Valley. The Village center is approximately 25 feet higher than the lower floodplain areas. Route 2 itself, as it leaves the Village area, descends towards the floodplain but remains several feet above the adjacent land, either by hugging the slow rise at the edge of the floodplain or by means of an elevated causeway made to keep the road above flood levels. **Figure D** shows the general topography in the Study Area as recorded by LIDAR information created by the Federal Emergency Management Agency as part of its work in identifying floodplains.

2. WATERCOURSES

The Winooski River is the primary watercourse in the Study Area, forming the southern edge of the Study Area. Numerous small, unnamed intermittent streams flow across the Study Area towards the Winooski River. **Figures E1** and **E2** show the general location of the smaller intermittent streams.

3. WETLANDS

The wetlands in the Study Area are located primarily along the edges of the Winooski River. There are a few more smaller isolated wetlands in the agricultural fields southwest of Route 2. **Figures E1 and E2** show the location of these wetland areas.

4. WATERBODIES

There are no significant water bodies within the Study Area.

5. FLOODPLAINS.

The Winooski River floodplain covers a large portion of the Study Area, including the Richmond Park & Ride site. **Figure E1 and E2** show the extent of the floodplain, as well as the location of the somewhat narrower floodway.

6. FLORA & FAUNA

The State of Vermont has not identified natural areas of special importance within the Study Area. There are also no deer wintering areas or other important fauna habitats within the Study Area but there is a significant deer wintering area on the northeast side of the Interstate, just outside of the Study Area. Not surprisingly, there are several locations with high occurrences of wildlife road kills on the Interstate located between the deer wintering area and the Winooski River. **Figures E1 and E2** show the general location of the deer wintering areas.

7. ENDANGERED SPECIES & SPECIAL ENVIRONMENTAL AREAS

There are several endangered species listed with the State of Vermont that are located in the wetland areas along the Winooski River. There are several other listings in the upland areas on the northeastern side of the Interstate, just outside of the Study Area. **Figures E1 and E2** show the general habitat location of the endangered species.

F. CULTURAL RESOURCES

1. HISTORIC/ARCHEOLOGICAL

The historic study has not yet been completed. It will be completed when the areas associated with alternatives have been identified.

2. OPEN SPACE AND PUBLIC LANDS

In addition to the public rights-of-way associated with the Interstate, Route 2, the Park & Ride and other local roads, there are several other publicly owned parcels in the Study Area:

- Volunteer Park along the Winooski River on Bridge Street in Richmond Village,
- The Richmond Elementary and Camels Hump Middle Schools on northeast side of the study area adjacent to the Interstate on Jericho Road,
- Riverview Cemetery on the northeast side of Route 2 just on the western edge of the Village and
- Holy Rosary Cemetery east of River View Cemetery.

Figures B1 and **B2** show the general location of the open space areas.

3. AGRICULTURAL LANDS

Most of the land in the Study Area west of the Village on the southeast side of Route 2 is in agricultural use. These fields cover more than half of the Study Area.

G. PLANNING DOCUMENTS

1. MUNICIPAL PLANS

The Richmond Town Plan supports the development of better bicycle and pedestrian facilities between the Village and the Park & Ride. The Town Plan, in the Transportation section, notes that, “Many residents desire a safe link between the Park & Ride to the Village and Jonesville along Route 2.”

2. REGIONAL PLANS

The Chittenden County Regional Pedestrian-Bicycle Plan recommends a series of interconnected on-road bicycle facilities and off-road shared use paths throughout the county. The on-road network includes an existing on-road bicycle facility designation on Route 2 in the study area from Richmond Village west. **Attachment B** includes a copy of the regional plan figure showing this designation. The Cross Vermont Trail, on the opposite side of the Winooski from Route 2, is designated as part of the regional off-road system.

3. STATE PLANS

The 2008 VTrans Pedestrian and Bicycle Policy Plan includes goals and objectives that directly support the upgrading of bicycling and walking facilities along the Route 2 corridor , including:

Goals

- Cultural Environment. Enhance the human scale and livability of Vermont’s communities by improving opportunities for pedestrian and bicycle mobility and access in and between towns, downtowns, villages and rural landscapes.

- Health. Improve the health of Vermonters and reduce health care costs by making it easier, safer and more convenient for citizens to be more physically active by walking and bicycling on a regular basis.
- Transportation Choice. Enhance pedestrian and bicycle transportation options in Vermont so that citizens, regardless of location socioeconomic status, or health can choose a seamless, convenient and comfortable mode that meets their needs. Promote a transportation network, including roadways, shared use paths, rail trails, rails with trails, and accessible walker facilities, which allow pedestrians and bicyclists to reach their destinations throughout the State or to connect to other modes of travel.

Objectives

- Objective 8. Work with citizens, municipalities, regional planning organizations, and other State agencies to develop, plan, and implement pedestrian and bicycle plans, projects, and programs.
- Objective 12. Provide a seamless transportation network for pedestrians and bicyclists by improving linkages between walking, bicycling and other modes of transportation.

4. OTHER PLANS OR STUDIES

Bridge Street Bicycle and Pedestrian Feasibility Study

The Bridge Street Study recommended replacing the existing sidewalks on the west side of Bridge Street south of the railroad crossing with new, wider sidewalks and an extension of the existing sidewalk on the east side of Bridge Street south to Esplanade. It also recommended increasing the paved shoulder width for better bicycling access. There is also a recommendation to upgrade an existing trail at the western end of Church Street to be a shared use path extending from Volunteer Green to Railroad Street with connections to Esplanade and Church Street.

Chittenden County Park & Ride and Intercept Facility Plan

The County's latest Park & Ride plan includes the results of a survey of Park & Ride users. Among the responses are that about ten percent of frequent Park & Ride lot users access the lots via bicycle while approximately eight percent sometime access the lot via bicycle. The survey also showed that approximately 20 percent of the respondents indicated that additional sidewalks or bike lanes accessing the Park & Ride lot would be a motivation to use the Park & Ride lot more. **Attachment C** includes several of the tables from the Plan.