

PEDESTRIAN AND BICYCLE FACILITIES

EXISTING PEDESTRIAN AND BICYCLE SYSTEM

Bicycle and pedestrian facilities are a vital piece of the transportation system. These facilities are very important to the safety and convenience of bicyclists, pedestrians and vehicle traffic. Bicycle and pedestrian facilities provide improved circulation and access in cities, villages, and other densely developed growth areas. These facilities are especially important to people with mobility limitations. The ability to walk or bike to your destinations reduces the need for vehicles, use of fossil fuel, pollution, supports public transit services, facilitates traffic calming, and provides health benefits. The economic benefits are also readily apparent. Tourists are more likely to visit an area with a good sidewalk network. Bicycle touring is very popular on Vermont's scenic highways.

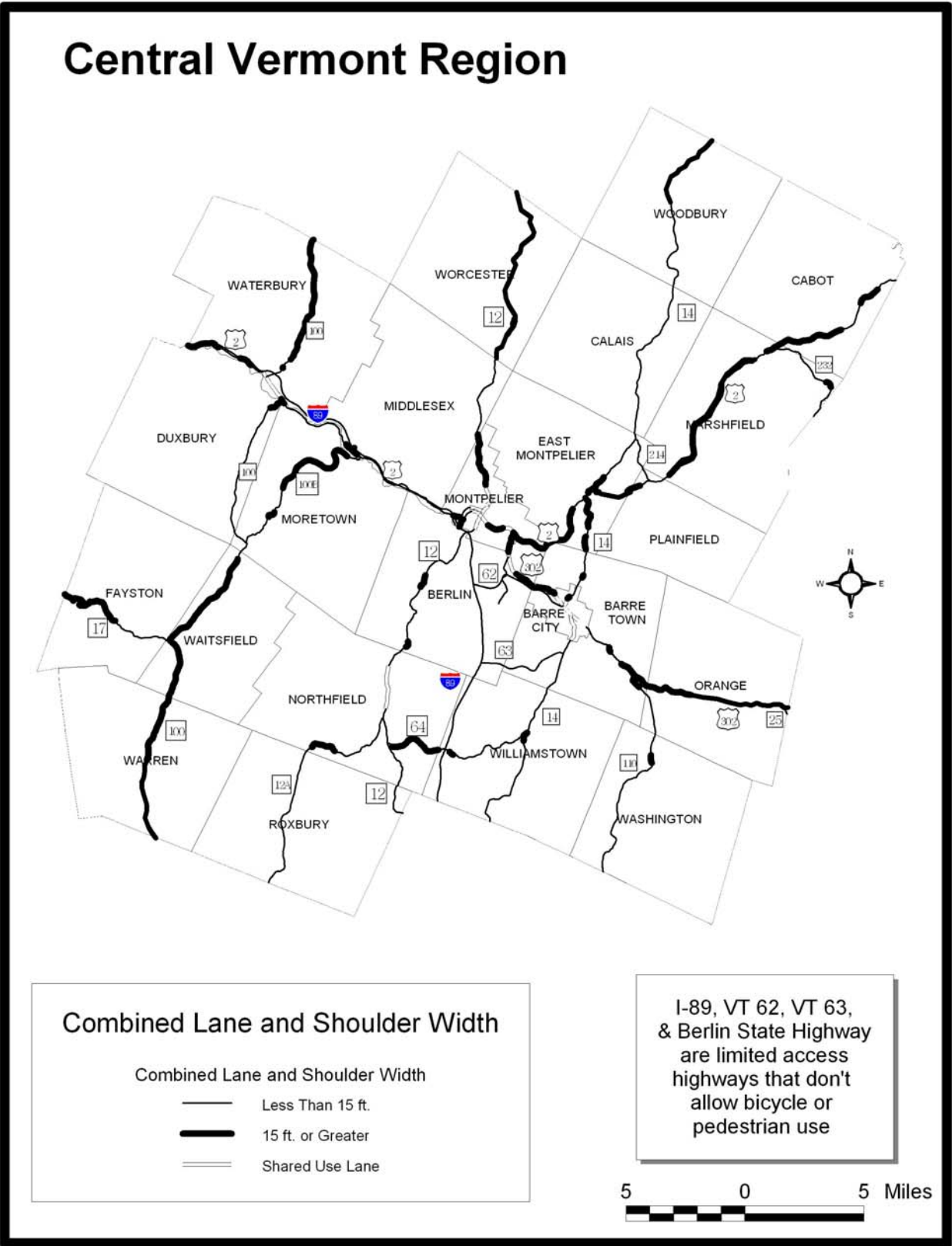
Bicycling and walking are increasingly used for commuting purposes. This is demonstrated by reviewing the 2007-2011 American Community Survey data. For example, for Montpelier residents who work in Montpelier, nearly 18% percent of these commuters (or roughly 685 people) walk to work. In Northfield, the intra-village commuters who walk to work is less, but still substantial -- (427 persons or 15 percent of the intra-village commuters).

There are a variety of bicycle and pedestrian facilities that can be found in Central Vermont:

Sidewalks and crosswalks are common in most cities and villages. Although there are exceptions the minimum width suggested in Vermont Design Standards is five feet. The following communities have sidewalks: Barre City, Barre Town, Cabot, East Montpelier, Marshfield, Montpelier, Moretown, Northfield, Plainfield, Waitsfield, Warren, Waterbury, and Williamstown.

Paved shoulders are the most common facility in rural areas. The Region recommends a minimum 15 ft. combined single lane and shoulder width be provided on state highways where possible (11 ft. lane & 4 ft shoulder). **Figure 31** illustrates highway segments with suitable shoulder widths.

Figure 31



Bicycle lanes are designated shoulders for the preferential or exclusive use by bicyclists. They require pavement lines, markings and signs. The minimum width is 4 ft., but wider lanes are recommended in areas with higher speeds or a higher volume of traffic, or with on street parking, and/or drainage grates. For example, there are existing bicycle lanes on portions of US 2 in Montpelier.

Shared use lanes are appropriate in village and urban areas where traffic speeds are lower and there is no room for a wider facility. Some times they are marked with sharrows in the travel lane. Examples can be found in Barre City, Montpelier, Northfield, and Waterbury.

Road Diet is a new term where the number of travel lanes is reduced or reconfigured to make room for any of the above facilities. Montpelier did this on US 2 on the east side of the city. There used to be two lanes east bound, and one lane west bound. Now there are bicycle lanes, and one travel lane in each direction. Berlin is considering this on US 302, where five lanes would be reduced to one lane in each direction, a center turn lanes, and buffered bicycle lanes (lanes are separated from the travel lane by a painted shoulder).

Cycle tracks may be one-way or two-way, and may be at street level, at sidewalk level, or at an intermediate level. If at sidewalk level, a curb or median separates them from motor traffic, while different pavement color/texture separates the cycle track from the sidewalk. If at street level, they can be separated from motor traffic by raised medians, on-street parking, or bollards. By separating cyclists from motor vehicle traffic, cycle tracks can offer a higher level of security than bike lanes and are attractive to a wider spectrum of the public. They have been considered on Barre St. in Montpelier.

Separated shared use paths are off road facilities for bicyclists and pedestrians with an improved surface. This type of facility is useful to make connections between destinations, when the existing road network isn't suitable (narrow widths) or as a short cut. A variation of this is a rail trail, where a rail bed that is inactive, abandoned or railbanked is used for a shared use path. The minimum width is 8 ft., but wider widths are suggested if high volume use is expected. Examples are sections of the Central Vermont Regional Path in Montpelier, Barre City, and Barre Town.

Trails are typically unpaved, not built to stringent standards, use the existing terrain, and although frequently are recreational facilities, they can also provide a transportation function. The Mad River Greenway, and sections of the Cross Vermont Trail are regional examples.

Bicycle Routes are not considered a facility, but are just designations on existing roads, paths, and trails. Guide books, maps, and signs are necessary to assist users. The Central Vermont Chamber of Commerce and CVRPC produce a Back Road Bike Tours guide book that includes maps and descriptions of bicycle routes. State and local highways are used. The Cross Vermont Trail also has a designated bicycle route in Waterbury Village.

Use

There isn't a lot of data on usage of bicycle and pedestrian facilities. By observation, it is well known that VT 100 and 100B are well used by local bicycle clubs and touring groups. VTrans and CVRPC have purchased automatic counters, so we have begun expanding our knowledge on use. There is a permanent counter installed on the west side of Main St. (near One More Time) in Montpelier. During 2012 there were 640,309 pedestrians, for an average of 1,754 per day. We have

also done some spot counts at the following locations:

Barre City Main St. at the Studio Place Arts, May 2014, daily average of 452 pedestrians;
 Montpelier State St., at Capital Plaza, late spring 2014, daily average of 1,392 pedestrians;
 Montpelier East State St. at City Place, summer 2014, daily average of 392 pedestrians;
 Waitsfield VT 100, at the Library, August 2014, daily average of 180 pedestrians;
 Waterbury Main St. in front of the park – summer midday – 199 pedestrians;
 Montpelier Main St. at City Hall, 4/29/14 PM Peak Hrs, 36 bikes,
 Central Vt Regional Path Montpelier – summer midday – 60 pedestrians & 34 bicyclists;
 Central Vt Regional Path Barre Town Athletic Field – summer late afternoon 47 peds & 22 bikes;
 VT 100/17 Intersection Waitsfield – summer late afternoon – 66 bicyclists; and
 Mad River Green Way Waitsfield at Meadow Rd. – summer late afternoon – 2 bikes, 78 peds, & 32 dogs.

Deficiencies

There are a number of factors to consider when evaluating the suitability of a highway for bicycle and pedestrian use. These include width, volume, grade, curves/alignment, speed limit, pavement condition, and number of curb cuts. In urban and village settings, bicyclists have to share the lane with motorized vehicles. In busy commercial areas, such as the Barre-Montpelier Road, high volume, high speeds, and multiple turning movements create an environment suitable only for the most experienced bicyclist.

As can be seen in **Figure 31**, there are many segments of the State Highway System that have deficient combined lane and shoulder width (less than 15 ft.) for bicycle and pedestrian use. Areas with suitable widths are fragmented which limits their use for longer distance trips and as a regional system. For example, VT 100 is heavily used by bicycle touring groups. The lack of a suitable shoulder in Duxbury is exasperated by the steep grades and winding curves of VT 100. Touring groups struggling uphill are slow moving, spread out, and in the travel lane. This creates an uncomfortable and dangerous situation for the bicyclists and vehicles attempting to pass. This situation may occur on other narrow shoulder highways such as US 2, US 302, VT 14, VT 12, VT 12A, VT 17, and VT 110.

Sidewalk networks exist in a number of the Region's cities and villages. There is a constant need to maintain these facilities. In certain areas the sidewalks are undersized, or have been neglected, which diminishes their usefulness, and may no longer meet ADA Standards. There are other villages and developed areas that have no pedestrian facilities. Shoppers on the Barre-Montpelier Rd. in Berlin need to use their vehicles to get from one store to another because there are no sidewalk connections. Expanding development is occurring in Berlin's Hospital and Mall area without connecting bicycle and pedestrian facilities. Many schools in the Region lack bicycle and pedestrian facilities, which increases the need for busing or parental driving.

The Vermont Agency of Transportation (VTTrans) is developing an On-Road Bicycle Plan in support of enhancing on-road bicycle improvements on the State highways. The VTTrans On-Road Bicycle Plan is a planning effort using public input and roadway characteristics to categorize state highway corridors into several tiers. The tier system will rank the state highway corridors for on-road bicycling based on where bicyclists ride now and where bicyclists want to ride. The Plan will assist VTTrans in understanding where to focus limited resources towards bicycle improvements and allow better integration into Agency projects. See draft map below.

Draft On-Road Bicycle Plan



Legend

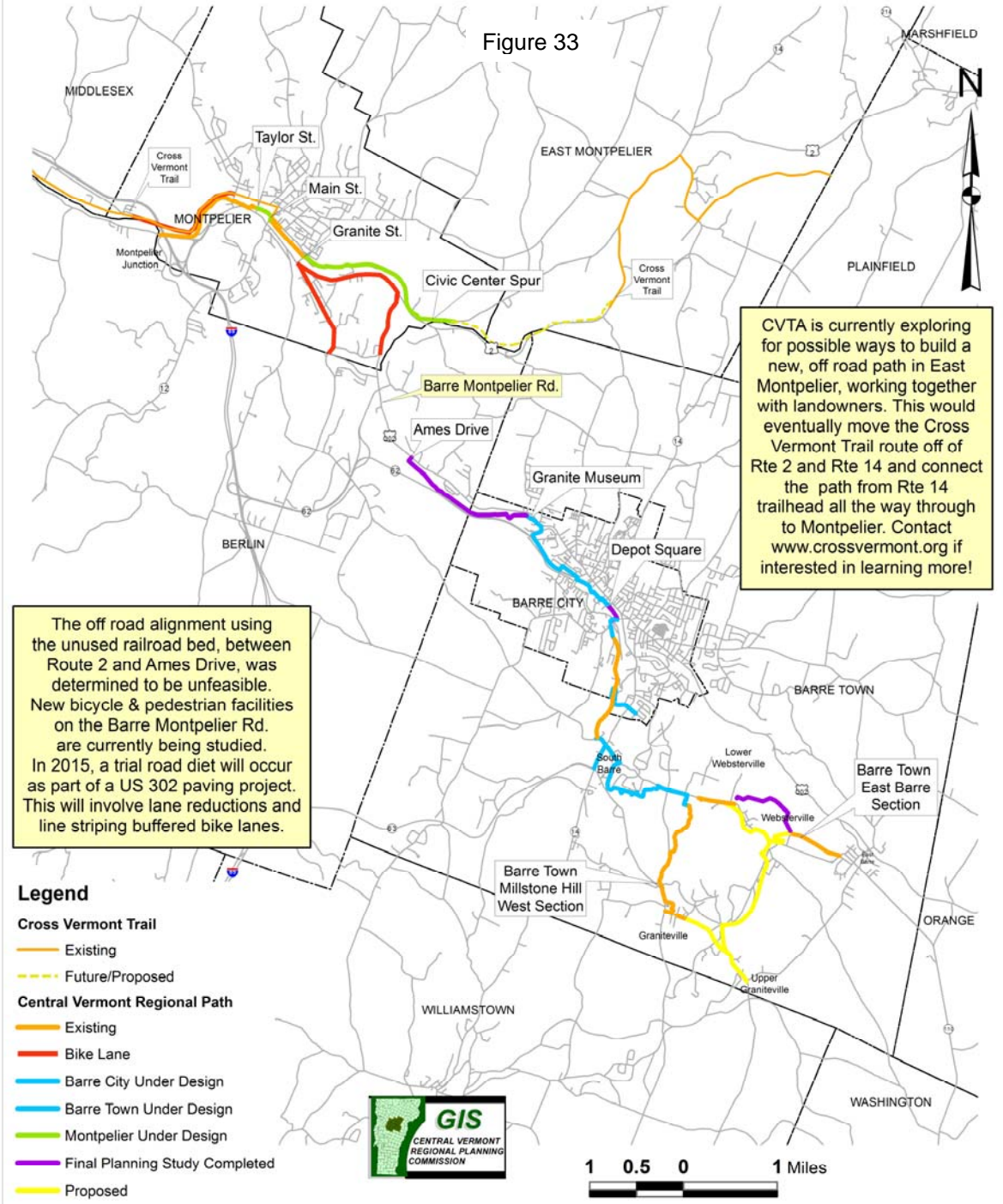
Draft Tier Score

- Least Desirable
- Moderately Desirable
- Most Desirable

This map is a work-in-progress illustrating the results of a methodology developed to understand where there is the greatest demand for bicycling on Vermont State roads. The demand levels developed relied upon an analysis of land use patterns, proximity to destinations, data collected on recreational bicycling, and public input through the project's wikiMap. VTrans anticipates using this information to inform prioritization of operations, maintenance, and improvement activities along State roads.

Central Vermont Regional Path Status - 12/14

Figure 33



BICYCLE AND PEDESTRIAN PROJECTS

Regional Bicycle and Pedestrian Facilities

These facilities involve multiple towns, and have organizations or citizen committees that oversee their development. They include the Central Vermont Regional Path, the Cross Vermont Trail, and the Mad River Path.

The Central Vermont Regional Path (CVRP) is a proposed 14.5 mile combination facility which will extend from Montpelier through Berlin, Barre City to Barre Town utilizing a former railroad bed and paralleling the Winooski River and Jail Branch. Where parts of the railroad bed aren't available, bike lanes, share the road, and sidewalks would be used. When completed, the CVRP will connect numerous residential areas with city downtowns (Montpelier, Barre City), commercial & employment areas (Ames Plaza, Central Vermont Shopping Plaza, Wilson Industrial Park), tourist attractions (State Capital Building, Granite Museum, Rock of Ages Quarry), schools (Montpelier High School, Spaulding High School, St. Michael's Elementary School, Barre City Elementary School, Barre Town Elementary School), recreation facilities (Dog River Recreation Area, Montpelier Civic Center, Barre Town Recreation Area), and other paths (Cross Vermont Trail, Vermont Association of Snow Travelers (VAST) Snowmobile Trails). See **Figure 33**.

The primary purpose of the proposed Central Vermont Regional Path is to provide a safe, convenient and inviting way for all ages of bicyclists and pedestrians to traverse the central portion of the State between Barre Town and Montpelier. An additional purpose of the Central Vermont Regional Path is to provide additional recreational opportunities for residents and visitors to the area and to promote tourism and economic development.

The Cross Vermont Trail is a multi-season, multi-use facility that, when completed, would extend 75 miles from Wells River on the Connecticut River, to Burlington on Lake Champlain. In Central Vermont the existing and proposed trail is in Marshfield, Plainfield, East Montpelier, Montpelier, Middlesex, Berlin, Moretown, Waterbury, and Duxbury. About half of the CVT is on a historic abandoned railroad bed, the former Wells River & Montpelier Line. Land owner issues and physical constraints have created fragmented sections and a variety of facility types. The CVT Association is installing signage for the entire trail. More information on the current status can be found at <http://www.crossvermont.org/>

The Mad River Path is a multi-season, multi-use facility, envisioned to connect Moretown Village, Waitsfield Village, Irasville, Fayston, and Warren Village parallel to Route 100 and the Mad River. Land owner issues and physical constraints have created fragmented sections and a variety of facility types. More information on the current status can be found at <http://www.madriverpath.com/>

Lamoille Valley Rail Trail is a multi-use path utilizing a former rail-bed. It travels from St. Johnsbury to Swanton, with 2 miles in the northeast corner of Cabot. Much of the Trail is in use, but there are sections and bridges undergoing rehabilitation. More information on the current status can be found at <http://lvrt.org/>

Local Projects

Cabot has developed a plan to expand their sidewalk network in the Village.

Calais has developed a plan to construct sidewalks in East Calais Village.

Duxbury plans a joint project with Waterbury and Moretown to connect the sidewalk network in Waterbury Village to the Crossett Brook Middle School. This project involves sidewalks and bicycle lanes south of the US 2/VT 100 intersection, changing to a separated shared use path north of Main St. Duxbury. This project would build upon the existing Waterbury/Duxbury Recreation Path. Which is a designated multi-use trail/bicycle route within the State Office Complex that proceeds to the Winooski St. Bridge, River Rd/Main St. in Duxbury to VT 100, and then returns to Waterbury Village along US 2. The Waterbury Section is also designated as the Cross Vermont Trail.

East Montpelier is designing sidewalks on US 2 in the Village.

Fayston has planned sidewalk construction around their Elementary School.

Moretown has planned sidewalk reconstruction and extensions through the Village.

Montpelier is creating a bicycle pedestrian master plan, called Montpelier in Motion. It will contain a full range of strategies and treatment throughout the City.

Sidewalks are proposed in Northfield Center (connecting residential and commercial areas along Route 12 as well as the Norwich University campus), and a path is proposed between Northfield Village and Northfield Falls paralleling Route 12;

Plainfield Village is designing a sidewalk on the south side of US 2, from the Town Hall, to the Lower Village, including a new pedestrian bridge over the Winooski River. The Town also intends to replace sidewalks along US 2 to the Marshfield town line, near the Maple Valley Cafe.

Waitsfield Village is building sidewalks on the west side of VT 100 for the length of the historic village.

Warren Village has conducted planning for sidewalks which connects the elementary school to the commercial area of town and civic center (library, town offices, town hall);

Waterbury is reconstructing sidewalks on US 2 (Main St.). The Main St. Reconstruction Project under design includes sidewalk, crosswalk, and streetscape improvements in the downtown.

Waterbury has designated a multi-use trail from Waterbury Village to Guptil Rd. Future plans are to continue this facility to Waterbury Center. Waterbury has a conceptual plan for sidewalks and a multi-use path in Colbyville, extending the Village sidewalks to Blush Hill Road to Ben and Jerry's. Other connections would be made to the Best Western Motel, a housing development, Shaws, and the park and ride. Waterbury also intends to plan sidewalks along VT 100 in Waterbury Center.

Waterbury has developed a bicycle – pedestrian plan, called Waterbury in Motion, which envisions connections within Waterbury Village, to Waterbury Center, to Little River State Park, and to neighboring communities.

Williamstown has a conceptual plan that needs updating to extend existing sidewalks in and near the village center, to the Elementary, Middle, and High School.

The Safe Routes to School (SR2S) Program was a new program that VTrans offered in 2006, and consists of a sustained efforts by parents, schools, community leaders and local officials to improve the health and well-being of children by enabling and encouraging them to walk and bicycle to school. The Central Vermont schools which have participated are:

Union Elementary-Montpelier;
 Main Street Middle School-Montpelier;
 Barre Town Middle and Elementary School;
 Williamstown Elementary School;
 Northfield Elementary and Middle School;
 Waitsfield Elementary School;
 Warren Elementary School;
 Moretown Elementary School;
 Thatcher Brook Elementary School;
 Fayston Elementary School;
 Crossett Brook Middle School;
 Twinfield Union School;
 Barre City Elementary and Middle School; and
 Worcester, Doty Elementary School.

Some of the accomplishments of the first year were, establishing SR2S Teams in each Town, conducting parent & classroom surveys, and identifying priority needs. During Walk to School Week in October, there was significant participation by students in special walking events. During Way to Go week in May, and now in the fall (Walk & Roll to School Day, and there are special efforts to promote alternatives to driving students to school.

Over the winter and spring School Travel Plans were developed, which assessed the current levels of walking and biking, identification of barriers, and strategies to overcome these barriers. In Williamstown, the County Sheriff was hired to do targeted speed enforcement in May and June. In early summer, bicycle rack applications have been submitted and awarded to a number of the schools. More significant infrastructure projects have been planned and applied for.

In the second year, there was more encouragement activities. Also there was school staff training to incorporate bicycle and pedestrian safety into the curriculum. Many of the activities and strategies of the Safe Routes to School Program could be extended to town-wide planning of bicycle and pedestrian facilities.

RECOMMENDATIONS

CVRPC will continue to promote appropriate land uses to make walking and bicycling as a viable means of transportation.

As part of the State's Complete Streets Law, inclusion of bicycle and pedestrian facilities and accommodations should be considered in all VTrans, Town, and new private development projects in villages, cities, and other growth areas.

CVRPC recommends a minimum 15 ft. combined single lane and shoulder width be provided on

state highways where possible (11 ft. lane & 4 ft shoulder).

Guardrail installation can have a negative effect on bicycle safety and comfort in areas with narrow shoulders. Fill should be considered to reduce slopes instead of guardrail installation. Box beam is the preferred type if guardrail is necessary.

Highways should be swept to remove sand and debris after winter.

CVRPC supports the implementation, expansion, and completion of the Central Vermont Regional Path, the Cross Vermont Trail, the Mad River Path, the Lamoille Valley Rail Trail, and other community bicycle & pedestrian plans.

Bicycle and pedestrian facility planning and development should be coordinated with adjacent communities and regions.

Public transit vehicles should accommodate bicycles, and bus stops should have appropriate pedestrian facilities, such as sidewalks, signage, and crosswalks.

Accommodations should be provided for bicycles at logical termini (i.e. bike racks, covered racks, storage lockers at all public parking areas, park and rides etc.)

Schools should consider locating in areas conducive to bicycle and pedestrian activity, and include facilities in their capital improvements. They should also consider participating in the Safe Routes to School Program.

Town planning for bicycle and pedestrian facilities should be included in municipal plans, and consider including education, encouragement, engineering, enforcement, and evaluation activities and strategies, patterned after the Safe Routes to School Program.

CVRPC will continue to aid municipalities, tourism, and economic development partners in designing and undertaking GIS mapping that can be used as bicycle/walking promotional materials.