

Southern Windsor County
Regional Planning Commission

REGIONAL BICYCLING AND
WALKING PLAN

FINAL DRAFT UPDATE 2006



For Public Review and Comment

Southern Windsor County Regional Bicycling and Walking Plan

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I. INTRODUCTION

The Southern Windsor County Regional Planning Commission (SWCRPC) has produced a Regional Bicycling and Walking Plan (Plan) to further define the alternative transportation goals identified in the 2005 Regional Transportation Plan (adopted June 21, 2005). The Plan was initially prepared for the SWCRPC by the engineering/planning firm of DuBois & King, Inc. In 2005, the 1997 Plan was updated through a planning process including an ad hoc citizens Bicycle and Pedestrian Advisory Committee (BPAC), consisting of residents, representing a variety of interests including: local merchants, local Planning Commission members, Regional Transportation Advisory Committee (TAC) members and citizens interested in alternative transportation. The Plan was developed with the direct assistance of the BPAC, TAC and town staff.

Upon adoption, the Plan will augment the Regional Transportation Plan to provide specific recommendations on improving conditions for bicycling and walking in the region. It is intended that this plan will be used by the Regional Planning Commission and its member towns to integrate bicycling and walking needs in the overall transportation system of the region. It will also be used by local Planning Commissions, Conservation Commissions, Recreation Committees or programs, local groups such as bike clubs, individual citizens and any other individuals or groups interested in improving conditions for bicycling and walking.

“The most significant transportation implication of increased bicycle and pedestrian travel is a reduced dependency on motorized forms of transportation and a consequent reduction in congestion and infrastructure expenses.”

Source: Southern Windsor County Regional Transportation Plan

A. Purpose of this Plan

The Southern Windsor County Regional Bicycling and Walking Plan achieves several objectives. The Plan provides a clear definition of regional bicycling and walking priorities. These priorities can be used by the Regional Planning Commission and the Regional Transportation Advisory Committee to recommend projects to the Vermont Agency of Transportation. The design guidance in the 1997 Plan are replaced by the *Vermont Pedestrian and Bicycle Facility Planning and Design Manual*. The design guidance contained in the Manual should be considered whenever any road construction or reconstruction project occurs in the region. This will ultimately result in roads that work well for bicyclists, pedestrians and motorized vehicles with minimum conflicts.

The Plan achieves these objectives by taking the following steps:

- Defining and analyzing the Regional Road System
- Identifying the role of the Regional Planning Commission in the context of state bicycle and pedestrian planning
- Identifying who bicycles and walks in the region and the characteristics of

- these groups
- Prioritizing bicycle and pedestrian needs in the region
- Providing a tool for villages to assess local pedestrian needs
- Outlining methods to promote bicycling and walking and to educate all road users how to share the road safely

What is a Bicycle or Pedestrian Facility?

Bicycle and pedestrian facilities take a wide variety of forms. A bicycle facility can be as simple as a road with no additional width beyond the travel lane or as elaborate as a path on a separate alignment for exclusive use by bicyclists and pedestrians. A pedestrian facility can range from a stable, gravel shoulder on a rural road to a paved sidewalk separated from travel lanes by a curb and planted green strip. The common element of bicycle and pedestrian facilities is that they provide for safe use of these transportation modes.

What is the Relationship to the Regional Transportation Plan?

The SWCRPC Regional Transportation Plan (RTP) references bicycling and walking in several chapters and survey results for the region indicate support for development of better facilities for bicycling and walking. **The RTP promotes alternative modes of transportation to lessen the dependency on the automobile.**

This Plan supplements the information contained in the 2005 RTP. The RTP is a source of general information on the role of bicycling and walking as part of the region's transportation system.

Who Bikes and Walks in Southern Windsor County?

Providing facilities for bicycling and walking is an important component of the regional transportation system. National statistics indicate that nearly a third of all trips are one mile or less in distance. These trips could easily be accomplished by bicycling or walking if safe facilities were in place.

There is a significant portion of the regional population that does not have access to private automobiles. This includes those under age 16, and a portion of the elderly population and those who don't drive because of economic or other reasons. 2000 Census data suggests that 41% of the total population in southern Windsor County falls within the two age groups that are least likely to have access to personal transportation, residents under age 18 and above age 65. The elderly and those with limited mobility depend on good pedestrian facilities to go about their daily business.

Several bicycle touring companies are active in Southern Windsor County. These companies use the regional road system extensively and bicycle touring is a source of significant revenue to businesses in the region. In a New York study conducted by the

Adirondack North Country Association, bicycle tourists spent an average of \$45 per person per day. This figure is for self-supported bicycle tourists and does not include fees which would be paid to a bike touring company. In 1992, approximately 32,500 bicycle tourists spent nearly \$13.1 million in Vermont, according to the 1998 *Vermont Bicycle and Pedestrian Plan*.



Bicycle touring groups use the regional road system extensively and bring economic benefits to Southern Windsor County. (Rte. 106 - Weathersfield)

Unfortunately, many roads in the region do not adequately serve bicyclists and motorists. In addition, some bicyclists' behavior, such as riding in large groups 3-4 abreast, is not conducive to safe use of the roads by motorists and bicyclists. This leads to feelings of ill will towards bicyclists. By supporting the recommendations of this plan, bicycle touring companies can continue to be an important part of the regional economy.

Who Developed this Plan?

To obtain local insight and participation in the Regional Bicycling and Walking Plan, the SWCRPC instituted a Bicycle and Pedestrian Advisory Committee (BPAC). The Committee was an essential part of the planning process and has helped to ensure that the Plan reflects the needs and character of the Region. Members of the BPAC come from a variety of backgrounds and interests as noted below:

Southern Windsor County Bicycle and Pedestrian Advisory Committee

Jason Rasmussen	Transportation Planner , Southern Windsor County Regional Planning Commission
Sharon Bixby	Calvin Coolidge Bike & Recreation Greenway Committee, Ludlow Transportation Advisory Committee, Southern Windsor County Transportation Advisory Committee
John Saydek	Southern Windsor County Transportation Advisory Committee, Cavendish Planning Commission, Cavendish Path Committee
Rick Trainer	Bike Shop Owner Calvin Coolidge Bike & Recreation Greenway Committee
Alan Isaacson	Southern Windsor County Regional Planning Commission, Ludlow Planning Commission
Peter Gregg	Innkeeper, Cyclist

Donna Ewald Bike Safety Fair - State Street School, Windsor,
Bike Smart Instructor

Amy Bell Vermont Agency of Transportation

B. Vision Statement for Southern Windsor County

A vision statement clearly states what the plan hopes to achieve over the next twenty years. The vision statement provides a focus for the plan. Vision statements are intended to have lofty goals. As decisions that affect bicycling and walking are made, planners and citizens can refer back to the vision statement and progress can be measured towards achievement of its goals. The vision statement for the Southern Windsor County Bicycling and Walking Plan is as follows:

“Residents and visitors in the Southern Windsor County Region will be able to safely bicycle and walk for both transportation and recreation on the majority of roads in the region. Village centers in the region will be pedestrian-friendly areas where priority is given to improvements that benefit walking, such as safe cross walks and well maintained sidewalks. Bike facilities such as improved shoulders and bike paths, bike parking and useful signing will also be included. Towns and private businesses within the region will be proactive in taking steps, including incentive programs, to ensure that bicycling and walking are given representative consideration with all the transportation modes. Clinics and bike safety programs will be offered throughout the region. Driver’s education for residents will include bicycle and pedestrian use and safety.”

“Research has shown that even low to moderate levels of exercise, such as regular bicycling or walking, can reduce the risk of coronary heart disease, stroke, and other chronic diseases; help reduce health care costs; contribute to greater functional independence in later years of life; and improve quality of life at every stage of life.”

Source: The National Bicycling and Walking Study

C. Goals of the Regional Bicycling and Walking Plan

The Regional Transportation Plan (RTP) has several references to bicycling and walking as transportation options that will provide partial solutions to the transportation problems in the region. The Plan also includes chapters covering promotion and education which will address the RTP goal to, “Promote alternative forms of transportation to lessen dependency on the automobile.” This Plan outlines specific conditions that are favorable for bicyclists and pedestrians, presents a method for identifying existing conditions, determines the existing condition of the region’s roads and presents a prioritized list of needs to be met in order to achieve the vision for bicyclists and pedestrians in the region.

There are several critical goals which will result from adoption and implementation of this Plan:

1. Provide a clear vision of regional bicycling and walking concerns. These goals will be used when coordinating improvements with the Vermont Agency of Transportation (VAOT).

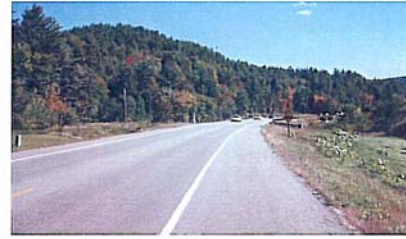
2. Identify a series of needs within the regional roadway network that, when met, will result in a network of safe bicycle-friendly roadways.
3. Accommodate the existing use of the regional roadway network for recreational bicyclists, including bicycle touring groups, by improving roadway conditions.
4. Define the range of improvements considered acceptable in the region. These design guidelines should be considered by the VAOT and towns in the region during road construction and reconstruction.
5. Provide a practical, hands-on guide for villages to identify bicycle and pedestrian needs at the local level and develop a program for construction.
6. Provide recommendations which can be implemented by town governments within the region to result in improved conditions for bicyclists and pedestrians.
7. Provide resources and recommendations to implement promotion and education programs in the region that will result in a reduction of accidents and a greater sense of security and confidence for bicyclists, pedestrians and motorists alike.
8. Promote share the road-type educational and awareness programs to maximize the use of the current regional bicycle network and maintain the scenic qualities of the roadways.

II. SOUTHERN WINDSOR COUNTY REGIONAL ROAD SYSTEM

A. Definition

The regional road system is the network of roads which have regional importance for bicycle and pedestrian travel. This includes all of the state highways in the region with the addition of several town highways. The regional road system is shown on Figure 1. This system of roads provides the most direct access to the major destinations in the region. Many of these roads are used by several popular bicycle touring companies.

In terms of accommodating bicycle travel, there is a dichotomy of conditions in Southern Windsor County. There are very few sections of roadway that have a moderate shoulder width (3-4 foot paved shoulder in good condition) that could serve bicycle travel. In general, the roads have one of two conditions going from one extreme to the other: little or no paved shoulder, or very wide shoulders, often 8 feet or more in width.



Some regional roadways have wide, paved shoulders. While these provide space for bicyclists, they can encourage higher driving speeds. (Rte. 103 - Ludlow)

Ironically, the roads with adequate shoulders are wide, heavily traveled and have high speed traffic that may not be attractive to recreational bicyclists. They may, however, serve commuting cyclists well.

The more scenic roads in the region invariably have the narrowest shoulders. In some cases, the traffic volumes on these roads appear to be low enough that no additional shoulder width is required, but on others, moderate paved shoulders would be welcome. The following observations summarize the condition of the rural roads in the region:

1. There are many scenic sections of rural highways in the region.
2. Topography and potential environmental impacts constrains shoulder widening on some highways.
3. There are opportunities for minor widening of shoulders in many cases. There are some situations where additional width for bikes could easily be gained by changing the striping within the existing overall pavement width.
4. Jurisdictional changes (i.e. from State highway to Class I town highway) often result in abrupt changes in roadway conditions.
5. Many roads, especially the town highways, have low enough traffic volumes that no changes to the road width may be necessary.

The villages in the region vary in size and scale. Typical settings include: small historic hamlets with a cluster of homes organized around a church, villages located at highway crossroads, and densely built-up urban areas with mixed land uses. The more built-up village areas have the most complete pedestrian networks. Many of the smaller villages do not have sidewalks or any other change in the road to cue highway users that they have entered a village area. Springfield, Windsor and Ludlow are the most built-up areas in Southern Windsor County. Chester, Cavendish/Proctorsville, Felchville and Brownsville are smaller villages that have the compact nature and variety of development that would benefit from better pedestrian networks.

In the village areas that have sidewalks, several common problems are apparent:

1. Lack of sidewalk continuity (missing segments and severely deteriorated segments)
2. Lack of crossing opportunities (e.g. widened sidewalks at intersections, reduced traffic speeds, marked crosswalks and raised medians)
3. On-street parking at locations that interfere with marked crosswalks
4. Lack of adequate separation (curbing or green strips) between sidewalks and the roadway
5. Sidewalks that are not handicapped accessible
6. Business accesses (curb cuts) that are excessive in width and do not provide for pedestrians

B. Jurisdictional Issues

Although most of the roads considered to be part of the regional roadway system are state-numbered routes, they are not all under state jurisdiction. Depending on the town, some state-numbered routes become Class I town highways in the vicinity of built-up village areas. This is negotiated with individual towns and is not consistent throughout the region. When a route becomes a Class I town highway, that portion is maintained and owned by the town. This change in jurisdiction on a given route can result in inconsistent conditions at the town line between adjacent road segments.

An example of a situation resulting from this jurisdictional problem is when a state highway project adds shoulder width to a road up to the border or town line, where it becomes the town's responsibility. If the town does not have a plan or program in place to widen the road under its control, cyclists will be faced with a sudden change in conditions. For example, on U.S. Route 5 South in Windsor the shoulder width abruptly changes at the boundary between town and state highway jurisdiction.

There are solutions to these jurisdictional problems. The VAOT district office is

responsible for maintenance activities on state-owned roadways. Towns generally have a highway or public works department that maintains the transportation infrastructure. Currently, representatives from these two organizations meet annually to discuss upcoming projects and to coordinate improvements; however, greater levels of communication and coordination are needed in order to eliminate some of the inconsistencies that occur on some routes.

To improve the likelihood that a road will have uniform conditions, a town Planning Commission should develop an improvement strategy for the state highways running through its town. This type of information should be included in the Town Plan and/or Capital Improvement Plan. With this type of planning in place, state and local road maintenance can refer to the plan as road projects are being developed. If the plan is adhered to, a road will develop consistent conditions for bicyclists and pedestrians over time.

C. Roadway Characteristics

To gain a better understanding of roadway conditions in Southern Windsor County, a “windshield” survey of the regional roadway network was conducted as part of this plan. The purpose of this survey was to gain a general understanding of the roadway conditions found on the regional network of roads and to make an overall assessment of how well pedestrians and bicyclists are accommodated in the village areas. The results of the survey are included in Appendix A of the Plan.

Class 4 roads and legal trails are found throughout the region. When combined with the regional road network of state and town highways, they provide an extended area that is especially suitable for mountain biking, hiking and other recreational opportunities. The majority of these publicly owned or legally accessible trails do not need any improvement other than routine maintenance to keep them passable. In fact, most mountain bikers will prefer to have the trails in an undeveloped condition to heighten the natural experience.

“Recreational bicyclists, including those participating in tour groups with outfits such as Bike Vermont, Vermont Bicycle Tours, and Backroads Bicycles, use all the major roadway corridors in the Region, including Route 103, 106, 11, and 131.”

Source: Southern Windsor County Regional Transportation Plan

While these trails are generally open to biking and walking, the use of the trails benefits greatly from the presence of a local organization. A trails association provides the following benefits:

- Educating people about responsible trail use
- Organizing Trail Maintenance
- Advocating for trails and recreation opportunities

An example of Vermont organizations that perform this function are:

- The White River Valley Trails Association
- Ascutney Trails Association (Provides education and maintenance for hiking trails on Mt. Ascutney)
- Green Mountain Club
- Appalachian Mountain Club

D. Purpose of Regional Road System Inventory

To identify areas that may be in need of improvement for bicyclists and pedestrians, it is important to assess the existing conditions. Too often in bicycle and pedestrian planning, an individual or group decides that a “path” is needed to connect one location to another without looking at the system as a whole. While paths on separate alignments can be the best solution to a specific problem, they are expensive, can be difficult to construct within an existing road right of way. The existing road system is often the most direct and cost effective way to get from one point to another. The problem for bicyclists and pedestrians is that most roads were not designed with today’s traffic volumes, speeds, and vehicle sizes in mind.

While the “windshield survey” provides a good overall assessment of the regional road network, hard data are necessary to identify segments that need improvement. A format for collecting this information was developed as part of this plan. The purpose of the inventory is to identify and map the various features that affect bicycling and walking on or next to roadways. The map gives a graphic representation of information such as Average Daily Traffic (ADT), truck traffic and width of usable, paved shoulders.

E. Rural Roadway Inventory Sheet Guidelines

The results of the inventory conducted by SWCRPC staff are shown on the *Regional Roadway Inventory Map* included in Appendix B of this report. In addition to the roadway conditions such as shoulder width, posted speed and traffic volumes, the map includes additional information which is useful in identifying needs in the region including upcoming paving projects. Although only roads identified as being important regional bicycle routes have been inventoried, local groups can use the same form to inventory other local roads and streets when assessing local conditions for bicyclists.

The inventory uses 3 feet as the minimum shoulder width that can best serve bicyclists on the region’s roads. The 3-foot minimum also allows for the variety of speed and volume conditions encountered in this region. Figures 2 and 3 illustrate the inventory forms used to assess the shoulder and posted speed conditions on the regional roadway system. Full-size copies of the inventory forms and instructions are included in Appendix C of this plan.

SOUTHERN WINDSOR COUNTY REGIONAL PLANNING COMMISSION
BICYCLE FACILITY/RURAL ROADWAY INVENTORY FORM

SHOULDER CONDITIONS

Town _____ Road/Highway (# and name, if applicable) _____
Date of Inventory _____ Roadway Surface (Paved or Unpaved) _____

Reference Features	Segment Begins (Mile Marker)	Segment Ends (Mile Marker)	Paved Shoulder Width		Presence of Gravel Shoulder		Other Notes
			Left	Right	Left	Right	
							Shoulder
							1=1' or less
							2=1'</>3'
							3 = >/= 3'

Figure 2 - Shoulder Condition Inventory Form

III BICYCLE AND PEDESTRIAN PLANNING AND IMPLEMENTATION IN VERMONT

A. Bicycle and Pedestrian Planning at the Federal and State Level

The Federal government took a more active role in bicycle and pedestrian planning with the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991 and subsequent reauthorizations. In 2000, the Federal Highway Administration (FHWA) developed *Design Guidance on Accommodating Bicycle and Pedestrian Travel* and established a policy that “bicycling and walking facilities will be incorporated into all transportation projects.” The American Association of State Highway and Transportation Officials (AASHTO) published *Guide for the Development of Bicycle Facilities* and *Guide for the Planning, Design and Operation of Pedestrian Facilities*. These documents, combined with the Americans with Disabilities Act Accessibility Guidelines, form the basis for bicycle and pedestrian design standards for federally funded projects.

Since the passage of ISTEA, the Vermont Agency of Transportation has increased its planning efforts to include bicycling and walking as viable modes of transportation. These efforts have focused primarily on assisting towns with the planning and construction of shared-use paths and

“We often forget the importance of social contact in shared public spaces. The car and car-based urban planning are destroying our public spaces, and unravelling our bonds of community.”

Source: Winning Back the Cities

sidewalks throughout the state. As mandated by the federal transportation bill, the VAOT has a full-time Bicycle and Pedestrian and Coordinator in the **Local Transportation Facilities Section**. The Coordinator is currently working on the existing list of community projects to move them toward construction. The Coordinator is also responsible for addressing statewide bicycling and walking policy issues. In addition, the VAOT is currently **updating the** state Bicycle and Pedestrian **Policy Plan** as part of Vermont’s Long Range Transportation Plan. The state plan will define the state goals, policies, and action plans to promote bicycling and walking and to improve facilities statewide. The VAOT has also developed State highway standards and the **Vermont Pedestrian and Bicycle Facility Planning and Design Manual** to guide the development of facilities in the state.

In 1991, the VAOT and the Vermont Department of Forest, Parks and Recreation in cooperation with the Federal Highway Administration created the **Bicycle and Pedestrian Program (formerly the Transportation Path Program)** to assist Vermont communities in the development of **bicycle and pedestrian facilities**. **Over \$21.7 million has been appropriated to fund 78 projects under this program between 1994 and 2005.**

After two years of this program, VAOT realized that unanticipated environmental and right-of-way concerns were causing many of the funded projects to be delayed indefinitely. In response, the VAOT initiated the Technical Assistance Program in 1994.

The Technical Assistance program was designed to provide better “scoping” of bicycle and pedestrian projects with the aim of eliminating cost overruns and identifying problem projects early in the process.

Under ISTEA and TEA-21, at least 10 percent of the State Transportation Program (STP) funds that go to Vermont are targeted for enhancement activities. The Transportation Enhancement Program funds bicycle and pedestrian facility planning, construction and educational activities. Vermont received approximately \$26.7 million in enhancement funds between 1992 and 2001.

In 1994, the Vermont Trails Act established the Vermont Recreational Trails Grant program for a variety of trails and path related projects. Funding for this program between 1994 and 2003 was about \$4.6 million.

B. Regional Policy/Authority

Vermont has 11 Regional Planning Commissions (RPC) which cover the entire state. The Regional Planning Commissions are under contract with the VAOT to support state transportation planning initiatives, develop regional transportation plans, prioritize transportation improvements in their regions and to provide general transportation assistance to communities. Projects that have been identified at the regional level and qualify for State and Federal funding go through a prioritization process so that they are included on the State Transportation Improvement Program (STIP). The STIP is a list of projects that are in the process of design and construction, with the appropriate funding to back them.

C. Local Authority

Towns have the ability to construct improvements for bicycling and walking without assistance from the state or federal government as part of yearly road maintenance programs. In many ways, this is a very effective process because the small scale of local projects often exempts these projects from certain federal reviews and bureaucracy. However, towns generally have much less funding to work with.

VAOT administrative procedures for bicycle and pedestrian projects allows for the management of all phases of project design and construction by municipalities instead of by VAOT. In addition, towns have greater local project oversight and can provide up to 50% of their local match as in-kind services. VAOT will continue to maintain responsibility for oversight to insure conformance with state and federal guidelines and facility design. The intent of this administrative procedure was to streamline the planning and development of local bicycle and pedestrian projects.

D. Funding Opportunities/Process

There are a number of ways that bicycle and pedestrian facilities may be funded. Funding for bicycle and pedestrian projects in Vermont often combines federal, state and local resources.

Improvements that benefit bicyclists and pedestrians are often included as part of larger projects. For example, a streetscape project to rejuvenate a downtown may include some new sidewalks in addition to paving, drainage, landscaping, lighting and other work. While this project is not considered a “pedestrian project,” it will certainly benefit the walking community.

The largest source of potential federal funding for bicycle and pedestrian facilities is through the Surface Transportation Program (STP) funds. **A new federal transportation bill was passed in 2005, titled: Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU).** Under SAFETEA-LU, up to 50% of STP funds can be spent on non-highway projects, including bicycle and pedestrian facilities. **The greater of 10 percent of STP funds, or the dollar amount of the state set aside for 2005 Enhancements, must be set aside for the Enhancement Program. In Vermont, \$3.5 million is anticipated for the 2006 Enhancement Program. Three of the 12 specific activities that were funded through the Enhancement Program relate specifically to bicycle and pedestrian projects and education.** The first involves providing new or improved facilities for bicyclists and pedestrians. The second involves the conversion of abandoned railway corridors for bicycle and pedestrian use. **The third involves the provision of safety and educational activities for pedestrians and bicyclists.** State funding is normally used in combination with federal funds.

1. Federal Funding Sources for Bicycle and Pedestrian Projects

National Highway System (NHS) Funds (Section 103 & 104(b)(1)) may be used to construct bicycle transportation facilities and pedestrian walkways on land adjacent to any highway on the National Highway System (other than the Interstate System).

Surface Transportation Program (STP) Funds (Section 133 & 104(b)(3)) may be used for either the construction of bicycle transportation facilities and pedestrian walkways, or non construction projects (such as brochures, public service announcements, and route maps) related to safe bicycle use. Approximately, ten percent of STP funds are used for “Transportation Enhancements” that include the provision of facilities for bicyclists and pedestrians. (Under SAFETEA-LU, the TE setaside is modified to be the greater of 10% of the State's STP apportionment or the dollar amount of the TE setaside for the State for 2005.)

Congestion Mitigation and Air Quality Improvement (CMAQ) Program Funds (Section 149 & 104(b)(2)) may be used for either the construction of

bicycle transportation facilities and pedestrian walkways, or non construction projects (such as brochures, public service announcements, and route maps) related to safe bicycle use.

Federal Lands Highway Funds (Section 204) may be used to construct pedestrian walkways and bicycle transportation facilities in conjunction with roads, highways, and parkways at the discretion of the department charged with the administration of such funds.

Scenic Byways Program Funds (Section 162) may be used to construct facilities along scenic highways for the use of pedestrians and bicyclists.

Recreational Trails Program (Section 206) monies may be used for a variety of recreational trails programs to benefit bicyclists, pedestrians, and other non-motorized and motorized users. Projects must be consistent with a Statewide Comprehensive Outdoor Recreation Plan required by the Land and Water Conservation Fund Act.

Highway Safety Improvement Program - Funds may be used for projects on any public road or publicly owned bicycle and pedestrian pathway or trail. Projects should be consistent with a state Strategic Highway Safety Plans (SHSP).

“A general enhancement of the “livability” of our cities parallels a truly intermodal transportation system in which bicycling and walking are valuable components.”

Source: The National Bicycling and Walking Study

Safe Routes to School

Program (Sec. 1404) - Funds may be used to enable and encourage children, including those with disabilities, to walk and bicycle to school; to make walking and bicycling to school safe and more appealing; and to facilitate the planning, development and implementation of projects that will improve safety, and reduce traffic, fuel consumption, and air pollution in the vicinity of schools.

Transportation, Community, and System Preservation (TCSP) Program - Funds may be used to carry out eligible projects to integrate transportation, community and system preservation plans, and might include bicycle and pedestrian facilities that:

- Improve the efficiency of the transportation system of the United States.
- Reduce the impacts of transportation on the environment.
- Reduce the need for costly future investments in public infrastructure.
- Provide efficient access to jobs, services, and centers of trade.

Federal Transit Funding continues to allow transit funds to be used for bicycle and pedestrian access to transit facilities, to provide shelters and parking facilities for bicycles in or around transit facilities, or to install racks or other equipment for transporting bicycles on transit vehicles.

2. State Funding

When the state undertakes a rehabilitation or reconstruction project, especially when it is located in a downtown area, a portion of the project may be for the benefit of bicyclists or pedestrians (e.g. new sidewalks, bike lanes, etc.). By Vermont state statute, when a road without paved shoulders is resurfaced, paved shoulders are to be added if feasible. These shoulders will act as roadway space for bicyclists. Re-paving projects are conducted through the Pavement Management Program, which also uses STP funds.

The Downtown Transportation Fund is a competitive program for downtown economic development initiatives, including pedestrian and streetscape improvements in a state-designated downtown.

The Bicycle and Pedestrian Program (formerly the Transportation Path Program) was established by the State Legislature in 1991 to assist Vermont communities in the development of bicycle and pedestrian facilities.

The State Infrastructure Bank (SIB) provides low interest loans for road and bridge construction or reconstruction, rail transit facility construction, and purchasing commuter vans. The SIB is administered by the Vermont Economic Development Authority in conjunction with VAOT and FHWA.

3. Local Funding

Even with federal and state funding as part of the financing package for a local project, there is a percentage of the cost that must be assumed by the local government. This percentage varies from 5 - 20 % depending on the primary funding source. Local funding for bicycle and pedestrian improvements comes from several sources:

Capital Improvement Plan - Improvements can be identified and planned for in the town capital improvement plan, if the town has one. The capital plan includes funding from general taxes.

State Aid to Town Highways - Towns receive money from the state each year to make improvements on town highways. Depending on local priorities, the town can use a portion of this money to make bicycle and pedestrian improvements, especially to repair or build sidewalks.

Local Improvement Districts - If residents of a specific street in a town want to make an improvement, like building a sidewalk, a local improvement district can

be established. With the local improvement district, residents within the district agree to pay an additional tax over a period of time that will be dedicated specifically to constructing the improvement they desire.

Development Impact Fees - State statute allows towns to levy development impact fees. These funds can be used to construct either bicycle or pedestrian facilities.

In-Kind Services - This method of funding is especially suitable for smaller communities. As part of its local match on a project, a town can contribute materials or the services and equipment of a local contractor, instead of direct spending on these items.

Based on an informal phone survey of town managers in Southern Windsor County, most towns do not have dedicated funding established for bicycle or pedestrian facilities. Some of the towns have a budget item for sidewalk repair or construction that is included as part of the highway budget. Some towns, such as Ludlow, have money set aside in their recreation funding for use as matching funds for construction of multi-use paths. Because most of the federal and state funding requires a local match, towns must address this problem. Many towns plan to use in-kind services (local labor or equipment) for a portion of their match. The difference is often made up from general town funds.

4. Non-Profit Organizations

There are a number of non-profit organizations that make funding available to construct bicycle and pedestrians facilities or to help with purchasing land, if necessary. The Vermont Department of Forest, Parks and Recreation developed an extensive list of potential sources for trails or greenway funding that could be used to plan or construct multi-use paths. See Appendix D for complete descriptions, funding amounts, names and addresses for these sources.

IV. BICYCLE AND PEDESTRIAN USER GROUPS

It is important to recognize both the similarities and the differences between bicyclists and pedestrians when planning facilities for either of these groups. Bicyclists vary greatly in their skills and abilities. Pedestrians are a less diverse group than bicyclists; however, there are variations in abilities that need to be identified. The common needs and desires of bicyclists and pedestrians are very similar to those of any transportation system user: directness of route, continuity of a facility, attractiveness or condition of the facility, safety of travel and ease of access to a specific destination.

An important factor to consider when planning for bicycling or walking is the distance that people are generally willing to travel using either of these modes for transportation. National statistics indicate that the average length of a bicycle trip is 2 miles, while the average length of a walking trip is 0.6 miles. This indicates that planning for facilities to accommodate these modes should concentrate on areas which have origins and destinations within the distance likely to be traveled. However, recreational bicyclists and walkers will generally travel further distances to enjoy scenic aspects of an area. It is important to consider road segments which are used by touring cyclists and to realize that a tour can cover an overall route that may cross the entire region over several days of riding.

A. Bicyclists

Bicyclists can be classified in two ways; by the trip purpose and by the skill or experience level of the bicyclist. The two main categories for bicyclist trips are utilitarian or recreational.

Utility - Utilitarian trips are taken for transportation, such as traveling to school, work, the grocery store, church or other regular destinations.

Recreation - Recreational trips are taken for fitness or pleasure only, including those made by bicycle touring companies.

“While the possibility of bicycle touring depends upon the availability of lightly traveled roads, the safe use of these roadways depends, in part, upon the courtesy and cooperation of both the bicyclists and operators of motor vehicles.”
 Source: Bicycle Touring in Vermont & Vermont’s Scenic Byways Program

While it is possible that a recreational rider will have a specific destination, such as an inn or restaurant, it is less likely that such a trip will replace a trip that would otherwise be taken by car. It is possible that some bicycle trips will be combinations of both recreation and transportation. For example, someone may use a bike to get to the store, knowing that this is part of their fitness routine. In either case, bicycle facilities should provide for safe travel between origins and destinations. With recreational riders, the scenic character of the roadway will be more of a factor in selection of a particular route. For both types of trip, there is a range of abilities that can be found.

Design Bicyclist - The FHWA publication, "Selecting Roadway Design Treatments to Accommodate Bicycles," offers an accurate description of the different skill level types that exist:

***Advanced, or Group A**, bicyclists are the most experienced riders who have the skill to operate on a roadway under most traffic conditions, regardless of the presence of a designated facility.*

***Basic, or Group B**, bicyclists are occasional or new adult or teenage riders who have less experience and confidence riding with traffic, especially if no facility, like a bike lane or shoulder, exists. Group B bicyclists make up the majority of the cyclists that currently exist.*

***Children, or Group C**, bicyclists are the least experienced and skilled at riding with traffic and they are generally monitored by parents, especially during the younger years.*

Group B and C riders are generally accommodated by the same type of facility, which will provide dedicated space to them, either through a separated path or designated bike lane on the roadway. By designing roadways and travel corridors to meet the needs of Group B and C riders, the Group A riders will be included.

B. Pedestrians

Pedestrians are a user group that includes those who are disadvantaged economically and lack access to private cars. They are also likely to be the youngest and oldest among the population and they are frequently overlooked in transportation planning. All modes of transportation are dependent on successful walking. The four most commonly recognized pedestrian user groups are:

Children - Young children lack the judgement and experience of their elders. They are very intolerant of out-of-direction travel, as evidenced by shortcuts that lead directly from a residential area to a school.

Adults - Adults are better able to handle a variety of situations, yet they will be discouraged from walking if no facilities are available, road crossings appear to be unsafe, or land uses are too far apart to walk conveniently.

Elderly - The elderly population, especially those with mobility limitations are very sensitive to the condition of the pedestrian system. While they have the experience to assess traffic situations, they no longer can move as quickly or tolerate differences in grade that exist within the pedestrian environment.

Disabled - Another group, which is made up of all ages, is those who have physical disabilities. They may be confined to wheelchairs, require other assisting devices or have vision problems. Their needs include ramps that allow them to make the transition between sidewalks and roadways at different

elevations, and audible signals for the visually impaired to negotiate signalized intersections.

Because children, young adults, the disabled and the elderly have the most restrictive requirements for pedestrian facilities, a suggested philosophy for design is to accommodate these groups, thereby including all users by default. Another reason to take this approach is that children under age 16 and a large portion of the elderly do not drive. Walking is one of their main means of transportation.



Deteriorated sidewalks do not provide an attractive facility for pedestrians

By providing pedestrian facilities that serve likely origins and destinations for these groups and take into account their physical and developmental levels, a large part of the walking population will be served well. In addition, guidelines as outlined in the Americans with Disabilities Act (ADA) must be followed. This will result in a pedestrian system that will meet the needs of the broadest range of users.

C. Making the Connection to Public Transit

Public transit users are another user group that would benefit from improved pedestrian and bicycle facilities. Because most public transit trips begin and end with a walking trip, the public transit experience can be improved by providing adequate pedestrian connections to bus or train stops. The combination of bicycling and transit is gaining popularity with both bus and train connections. Many urban transit providers have bicycle racks on the front of busses. This extends the range of a public transit trip because users can bicycle a longer distance at each end of the trip. Another important bicycle facility related to public transit is the provision of secure bicycle parking at transit stops. Again, this enables users to come from a longer distance, leave their bikes at the transit stop and use the bus to access their destination.

The combination of public transit and bicycling or walking has another advantage. The topography in Vermont is often a factor which will discourage people from biking or walking for transportation. By combining a bicycle or walking trip with public transit, travelers can use a bus for the uphill portion of a trip or to get through a section of roadway that does not provide well for bicyclists or pedestrians. Public transit users, bicyclists and pedestrians often have the common characteristic of not having access to a private car due to cost or other factors. By improving conditions for all three of these transportation modes, a more balanced system that meets the needs of a greater proportion of the population will result.

There are several examples of these facilities in Southern Windsor County including the

Green Mountain Flyer excursion train, the Amtrak Vermonter passenger train and the **Connecticut River Transit (CRT)** bus services in **Southern Windsor County**. The Green Mountain Flyer foliage excursion train has stops in Chester Depot and in Ludlow. Train passengers at both stops will have an enhanced experience if pedestrian facilities provide a good walking environment with connections to the train station. Amtrak's Vermonter passenger train has a specially equipped baggage car for carrying bicycles. Bicyclists can board the train, ride to Windsor and then bicycle back to their origin or to a local inn. Their experience will be enhanced if adequate bicycle facilities lead from the train station.

CRT was recently awarded funding from the Transportation Enhancement program to purchase two bicycle racks for installation on two busses. The new racks will facilitate cyclists being able to make multi-modal trips by both bicycle and bus.



Bicycle and pedestrian facilities at bus or train stations enhance multi-modal opportunities (Chester Depot)