



Statutory Authorization: 24 V.S.A. §§4416, 4417, V.S.A. Title 19, Chapter 23, §2307

Type: NONREGULATORY & REGULATORY / **Related Topic Areas:** Capital Improvement Program; Downtown Revitalization; Facilities Management; Growth Centers; Official Map; Roads & Highways; Subdivision Regulations; Zoning Regulations

Bicycle & Pedestrian Facilities

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Communities that promote walking and other forms of nonmotorized transportation can reap significant social, environmental, and health benefits that are often not available in auto-oriented places. Safe, convenient, and comfortable trails, sidewalks, and pathways provide opportunities for exercise, help people meet and socialize, and give children and others who do not drive mobility options. If located in a traditional village, downtown, or associated neighborhood or in a new, mixed-use, compact growth center, walking and biking facilities provide viable alternatives to driving to work, school, or services. With the option to walk or bike available for everyone, communities can reduce the number of vehicles on the roads with subsequent reductions in traffic congestion, air pollution, and parking demands.

Municipalities can support walking and biking by planning, building, and maintaining public facilities for pedestrians and bicyclists. One or more of the following tasks may be necessary to accomplish the community's goals:

- assessing local needs for pedestrian, bicycle, and trail access and mobility;
- creating a plan for upgrading existing facilities and building future networks and for obtaining funding for the work;
- building and maintaining local pedestrian, bicycle, and trail facilities;
- coordinating facility planning and development with adjacent communities, regions, and the state;
- enacting local bylaws and subdivision regulations that enhance compact settlement and encourage walking and bicycling;
- evaluating pedestrian and bicycle needs within site plan or subdivision



Bicycle and pedestrian facilities can provide a practical alternative to the automobile—as long as they are safe, well-maintained, and linked into a continuous network that takes people where they want to go. Increasingly, they are also seen as an important community development tool, attracting workers looking to settle in communities with a high quality of life.

- review and requiring developers to invest in pedestrian and bicycle facilities and trails; and
- forming local citizen advisory committees for pedestrian and bicycle activities, sometimes as a subcommittee of the conservation or recreation commission.

Planning Bicycle and Pedestrian Improvements

While a municipal plan may have information and recommendations on bicycle and pedestrian facilities in the transportation and the recreation sections or include discussions about creating a pedestrian-friendly village,

downtown, or neighborhood in the land use section, rarely do municipal plans include detailed planning for such facilities. In communities that have identified extensive bicycle and pedestrian (bike/ped) improvements as a goal, a more detailed bicycle and/or pedestrian plan should be considered as a first step toward implementation.

A public planning process devoted specifically to a community's bicycle or pedestrian needs can help publicize and garner local support for bike/ped improvements and can help attract federal and state funding for projects that were developed through an inclusive, well-thought-out process. Usually bike/ped planning takes place at two different stages—master planning and

Design Considerations

In assessing and planning for effective pedestrian and bicycle networks a number of technical and design issues need to be resolved. These include:

- Finding ways to accommodate pedestrians and bicyclists on arterial and collector streets.
- Selecting appropriate facilities (for example, six-foot-wide curbed, concrete sidewalk versus off-road gravel trail) for the situation.
- Planning ahead to create and maintain a system of closely spaced interconnected local streets to improve walkability, especially in downtowns, village centers, and growth centers.
- Overcoming barriers to pedestrian and bicycle movement, such as highway crossings, intersections, railroads, and rivers.

The *Vermont Pedestrian and Bicycle Facility Planning Design Manual*, published by the Vermont Agency of Transportation, provides extensive information for planning and designing bike/ped facilities and is online. Find links at www.vpic.info.

feasibility studies for specific projects.

Master planning involves doing a thorough analysis of the community needs for bike/ped facilities within a given geographic area (for example, it could be town wide or just for the historic village center); mapping existing and proposed trails, sidewalks, and other improvements; and developing some rough cost estimates and strategies for implementation. Master planning should always include public participation; extra efforts should be made to involve potentially affected landowners. Showing proposed paths or other public improvements on private land can be alarming to landowners if they have not participated in the planning process. Popular and well-meaning bike/ped facilities have been stalled, sometimes for years, for lack of support from key landowners.

Feasibility studies can be undertaken for a specific project that the master plan has identified as a priority.

In cases where a specific project is clearly needed, a municipality may go directly to performing a feasibility study rather than waiting to complete a master plan. Feasibility studies can investigate a specific project (such as a sidewalk on Main Street linking the town offices to the school) or examine alternatives for a needed project where the location is not obvious (such as a trail linking the school to the ball fields). In both cases, the study examines whether a project can actually be permitted and constructed and includes preliminary cost estimates so the community can determine if it wants to proceed with seeking funding for the project.

Bike/ped plans, like any other types of supporting plans, may be incorporated into a municipal plan through the statutory adoption process (24 V.S.A. §4403[5]) if the community wishes to give the supporting plan greater weight in local and state policy making. To obtain even more ability to direct the location of a new facility, especially for multiuse paths and trails, municipalities may show the proposed facility on an official map that shows the locations of future public investments for the purposes of capital planning and for identifying the public facilities needed for new development. Developers can be required, through permitting provisions, to either construct the facilities shown on the map or to put money in escrow to build such facilities at a future date. (See topic paper, Official Map.)

Once planning for bike/ped facilities has taken place, there are a number of ways to fund the projects and get them built.

- Incorporate bicycle and pedestrian facilities in scheduled municipal infrastructure projects, such as roadway, municipal utility, and conservation projects, as well as raising funds and including proposed projects in the capital budget and program. (See relevant topic paper.)
- Fund maintenance and spot improvement projects through municipi-

pal sources, such as development impact fees, special assessment districts, or property owner tax.

- Encourage and require bicycle, pedestrian, and trail facilities in new private construction. This can be done through comprehensive town plans, zoning ordinances, trail plans, subdivision regulations, and local road design standards, as well as enactments negotiated as part of project development approval.
- Obtain grants such as the federal Enhancement Grants from the Vermont Agency of Transportation or the Downtown Transportation Fund for designated downtowns from the Department of Housing and Community Affairs. State funding is limited and only available on a competitive basis.

Bike/ped construction projects, even those that seem simple at first, are complex undertakings. Obtaining rights-of-way, natural resources protection, and permitting; conflicts with utility poles and lines; drainage considerations; contracting; and other issues need to be addressed. Where state and federal funds are involved, local matching funds must be raised and state and federal contracting and construction requirements met.

Development Review Requirements

State statute enables municipalities to require bike/ped facilities in the approval of new development. Adequate bike/ped facilities are encouraged under site plan review (24 V.S.A. §4416) and planned unit development (PUD) (24 V.S.A. §4417). The provision for subdivision bylaws (24 V.S.A. §4418[1][B]) requires that there be standards for design and layout of all public facilities, including sidewalks, streetlights, and landscaping.

Zoning and subdivision regulations should be designed to encourage compact mixed-use development areas identified in the municipal plan, so that residential, commercial, and office uses are located within walking

Regulatory Provisions

In densely developed areas, such as downtowns or village centers, the following provisions should be considered as part of the regulatory review process:

- requiring developers to provide sidewalks and streetscape amenities (lighting, bicycle parking, benches, etc.)
- requiring bicycle/pedestrian connections between sites and developments, (adequate internal bicycle and pedestrian site circulation and connectivity to adjacent sites)
- requiring bike lanes and shared-use paths
- providing access management by limiting curb cuts (consolidating driveways)
- encouraging traffic calming (physical

street features that control vehicle speeds)

- establishing maximum street-width standards to allow narrower local streets
- requiring ground-floor development that enhances the pedestrian experience
- reducing or eliminating building setbacks
- requiring outdoor spaces for public or recreational use (plazas, parks, trails, etc.)
- providing pedestrian facilities on new or reconstructed local roads
- limiting the size of parking lots, breaking large ones into smaller, more pedestrian-friendly landscaped lots with sidewalks
- requiring adequate internal bicycle and pedestrian site circulation and connectivity to adjacent sites

encouraged by providing bike lanes, paths, and trails linked to places people want to go. In rural areas, bike/ped mobility and safety can be enhanced by widening roadway shoulders, as well as by building separate pathways and trails, thereby making rural scenic roads more accessible to pedestrians and bicyclists.

Pedestrian Facilities

New housing developments should incorporate pedestrian facilities as part of their design, and these facilities should connect and coordinate with existing developments. In a multifamily residential development with three or more units, on-site pedestrian facilities should be constructed from every unit to all other units, to community facilities, and to the street.

Pedestrian facilities should include street lighting, landscaping, and shade trees where possible. Pedestrian walkways located in vehicle-use areas should be of contrasting surface materials to enhance pedestrian safety and comfort, as well as the attractiveness of the walkways.

Buildings should be designed with pedestrians in mind. Exterior building walls should not continue along an uninterrupted plane for more than

distance, encouraging people to walk to meet their everyday needs. Typical distances people are willing to walk range from one quarter mile to one half mile, while bicycle trips are generally up to two miles in length.

Development guidelines should enable safe access for pedestrians and bicyclists along public roads and rights-of-way; they should also ensure that there is a safe and convenient bike/ped connection from the street to the new development. This will also support the use of any public transportation service to the development.

In urban and suburban areas and in village centers, zoning and subdivision

regulations should include special standards that support an attractive walking environment. In addition to being easily accessible to homes, jobs, and services, the walkways should be well connected, safe, inviting, and visually interesting. Conflicts between pedestrians and vehicles should be reduced as much as possible. Multimodal transportation (improving transportation by connecting more than one transportation mode) can be

Pedestrian Overlay District: Another Option

A pedestrian overlay district increases the requirements (such as wider-than-standard sidewalks or increased consideration of pedestrian amenities, such as lighting or street furniture) in certain areas in the town. Such an overlay district would normally be applied to a downtown, village center, or growth center, where the goal is to facilitate a high level of pedestrian activity.

Type of Street	Provision of Sidewalks
Commercial centers and downtowns	Both sides of all streets: 6 feet or wider.
Major residential	Preferably on both sides: 4 feet or wider
Local residential	Preferably on both sides, but at least one side: 4 feet or wider
Low-density residential (1 to 4 units/acre)	Preferably on both sides, but at least one side with appropriate shoulder on other side, or dedicated trail system
Rural residential (less than 1 unit/acre)	Preferably on one side with appropriate shoulder on other side, but at least a shoulder on both sides, or dedicated trail system
Source: Adapted from <i>Design and Safety of Pedestrian Facilities</i> , Institute of Transportation Engineers (ITE).	

100 feet. Expanses of blank walls (without windows, doors, or other articulation) should not exceed 20 feet in length.

The table on page 2-3 offers some guidance on where sidewalks are typically located based on the type of street.

Sidewalk standards should also ensure accessibility for people with disabilities. All public sidewalks, shared-use paths, and street crossings must meet the requirements of the Americans with Disabilities Act (ADA) and the design standards that implement the ADA.

Bicycle Facilities

Statute 19 V.S.A. Chapter 23, §2307 states that the legislative bodies of municipalities have the power to establish and maintain bicycle routes separately or in conjunction with the construction, reconstruction, or maintenance of an existing or new highway under their jurisdiction. Funds appropriated under 19 V.S.A. §306(a)(5) may be used for the establishment or maintenance of bicycle routes. Towns also have the right to adopt rules concerning the development and use of bicycle routes (pursuant to the provisions of the state's Administrative Procedure Rule, 3 V.S.A. Chapter 25) and have the right to acquire property for facilities through takings as outlined in 19 V.S.A. Chapters 5 and 7.

Bicycle/Pedestrian Advisory Committee

One way to help encourage the adequate development of bicycle and pedestrian facilities is to create a local bike/ped advisory committee, as authorized under 24 V.S.A. §4433(1) and (2). This committee could play an important role in developing the bike/ped plan, obtaining grant funds for new facilities, and advocating for bike/ped projects in the development review process, as described in §4464(d).

Subdivision and PUD Review Language

Example: South Burlington

Sidewalks and/or recreation paths shall be installed along both sides of arterial streets, along both sides of collector streets in commercial areas, along one side of collector streets in noncommercial areas, and along one side of local streets. The specific location of the sidewalks and/or recreation paths shall be determined by the DRB.

Permanent pedestrian easements, 20 feet in width, may be required through blocks 60 feet or more in

length, or as a continuation of cul-de-sacs, or in conjunction with utility easements in order to facilitate pedestrian circulation within the subdivision or PUD or access to adjoining neighborhoods and public property or community focal points such as parks, schools, and other public property, shopping centers, centers of employment, and community recreation facilities, etc. Additional pedestrian easements shall be reserved in conformance with the pedestrian trail and recreation path systems as indicated in the Official Map and Comprehensive Plan.

Bicycle parking should be required in development review standards especially for commercial and office development. Bicycle parking should be located in convenient, visible, well-lit areas, with easy access. Standards for review of bicycle parking should prevent conflicts between bicycle and pedestrian traffic and damage by motor vehicles. Bicycle parking should also be provided in public places, such as schools, park-and-ride lots, recreation facilities, and libraries.

Considerations

When planning bike/ped projects, it is important to coordinate facility planning and development with adjacent communities and regions. Connecting local trails and paths to adjacent communities encourages longer walking and bicycle trips and improves accessibility for the greater community. Any cross-jurisdictional maintenance issues should also be discussed with the state and municipalities.

Lack of community support for bike/ped projects or landowners who refuse to grant rights-of-way can derail a project that has taken years to develop. It is critical to establish community support for bike/ped transportation as well as for specific projects before and during construction. Meeting individually with key

landowners on a regular basis to listen to their concerns and to review the project can help to allay their concerns and keep projects on track.

For all types of new public facilities, raising funds for construction can seem like a monumental cost, and it is easy to overlook the need to budget and plan for long-term maintenance. Considering the cost of maintenance up-front and including it in the annual budget is essential to keeping the facility in good shape and ensuring that public support for bike/ped facilities continues. It is also important that roles for staff or volunteers for maintaining bike/ped facilities and funding be clearly defined and allocated, including winter maintenance.