

# Pioneer Valley Regional Bicycle and Pedestrian Plan



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## Foreword to 2006 Plan Update

### *Bicycling and Walking in the Pioneer Valley in 2006*

This plan is an update of the 2000 Pioneer Valley regional Bicycle and Pedestrian Plan. Much of the data and information that, when analyzed, identifies the planning needs of pedestrians and bicyclists in the Pioneer Valley has not changed dramatically in the last five years. However, there have been some advances in the field of planning for pedestrians and bicyclists and updating our regional bicycle and pedestrian plan provided a good opportunity to analyze the progress we have made on the recommendations included in the 2000 plan. In keeping with the 2000 plan, the Pioneer Valley needs to continue constructing facilities for bicyclists and pedestrians—both on-road and off-road, while at the same time educating public works staff and this plan includes actions and steps for continuing this success.

In the six years since we launched the first Pioneer Valley regional bicycle pedestrian plan, a new federal transportation law has been passed. In 2000 we were guided by the Transportation Efficiency Act for the 21<sup>st</sup> century (TEA 21). This year we are guided by SAFTEA-LU. A major addition to federal transportation law pertaining to pedestrians and bicyclists in the last six years is the renewed national commitment to Safe Routes to Schools. In the 1970s the Federal Highway Administration (FHWA) invested significant amounts of money into safe route to school planning, but through the 1980s and 1990s that funding diminished. During this time more and more children were driven to school by their parents, and during this time childhood obesity went from 7% to 25%. A major factor driving this latest wave of safe route to school funding is the desire to promote childrens' physical activity, while also reducing automobile use. Traffic congestion and air pollution combined with children's lack of physical activity are the targets of safe route to school initiatives.

In addition to the increased awareness of childhood health problems related to lack of physical activity, research in the last six years on adult health and well being has shown that sprawling communities create unhealthy people. This plan is designed to promote walking and bicycling in the Pioneer Valley—but not for their own sake—we are promoting walking and bicycling as a means to creating healthy and sustainable communities. People want to live in walkable communities that have bicycle amenities. Regions need people to work in growing industries. Promoting walking and bicycling are tested means to create healthy communities.

**Note to reviewers: Once you have reviewed the plan and we have a proposed final version—we will write an Executive Summary.**

## **Introduction—**

Note to reviewers: suggestion has been made to change tone on this paragraph

### **How many people walk or bicycle?**

Only 0.36 percent of all Pioneer Valley residents commute to work by bicycle and 5.16 percent walk to work (source, 2000 Census). This is a decrease from 1990 figures; during the same period of time automobile traffic increased. Communities with vibrant urban downtowns had the highest rate of bicycling and walking, while those more removed from commercially viable downtowns had the lowest rates, further demonstrating that land use and commuting patterns are related in the valley. <sup>1</sup>

### **How many might walk or bike?**

In Madison, Wisconsin, a mid-sized city with winters similar to those of the Pioneer Valley, 11.3% of all trips are taken by bicycle. In Minneapolis, Minnesota, a larger city with a similarly severe winter climate, 6.7 percent of all trips are made by bicycle. Both cities have large university student populations. Both pride themselves on being “livable” communities and both communities, through strong public policy and government support, have created an environment that encourages bicycling. The larger communities in the Pioneer Valley should potentially be able to achieve similar rates of walking and bicycling.

## What does this plan do?

This plan describes the status of walking and bicycling in the Pioneer Valley, but more importantly, it identifies actions municipal government, advocacy organizations and individuals can take to encourage more people to walk and bicycle in the Pioneer Valley and it identifies actions public works officials and community leaders can take to engineer safer places for people to walk and bicycle. It combines policy-related actions and physical projects on which municipal and regional officials and citizens can collaborate to improve conditions for pedestrians and bicyclists. Communities from across the United States have used a similar approach and realized significant improvements in conditions for bicyclists and pedestrians.

This regional Bicycle and Pedestrian Transportation Plan offers an overview of how the Pioneer Valley can become a safer and more inviting place for people to walk and ride bicycles. It is ultimately up to individuals to make the choice to walk or ride a bike, but local governments and citizen groups can change existing built environments, public policies and practices to make walking and biking to work, school, or play a more attractive option for community residents.

A successful community approach to making walking and bicycling realistic transportation options in the Pioneer Valley requires a combination of

- Engineering
- Education
- Enforcement
- Encouragement.

Some roads may need to be modified to allow bicyclists and motorists to share the road safely. In other cases engineers, planners, and public works officials simply need to be educated about pedestrians' and bicyclists' needs and rights in order to better understand how to design and build facilities where bicyclists and pedestrians feel safe. In some cases communities will need millions of dollars to build a separate facility—but in many cases a simple stripe of paint is enough to delineate a safe place for a bicyclist to ride on the road. The public needs to be educated about how to share the limited road space and operate safely. Employers and educational institutions need to learn how to make it easier for employees and students to walk or ride their bikes to work and class. And, of course, police officers must enforce, and people must obey, traffic laws.

In the end, a community that has retrofitted its roads (where possible) and actively worked towards building facilities for bicyclists is not only a safer community for bicyclists and pedestrians, it is a healthier and more vibrant community for all residents. Expanding transportation options will result in increased numbers of bicyclists and pedestrians, less traffic and a higher level of health<sup>1</sup>. The Pioneer Valley is not alone in confronting the challenges of more than a half-century of increased automobile dependence<sup>2</sup>; only a few Americans feel that their communities have been designed with bicyclist safety in mind<sup>3</sup>, but Pioneer Valley residents have the added advantage of town centers that predate the automobile, complete with

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<sup>1</sup> “Other risk factors aside, people in densely populated places graced with sidewalks and shops had the lowest rates of diabetes, hypertension, heart disease and stroke” (Newsweek, 10/3/2005, page 60).

<sup>2</sup> Newsweek, 10/3/2005, page 62

<sup>3</sup> In the Omnibus Survey completed for the Bureau of Transportation Statistics (2003), only 23 percent of Americans felt that their communities were designed well enough to make them feel very satisfied about the overall safety of riding a bicycle.

safe sidewalks, and many existing shared-use facilities or ‘Rail Trails’. Linking transportation options with the region’s historic town centers can successfully address the need for a more bike and pedestrian friendly environment. And this is, perhaps, the region’s greatest strength: there are so many centers with nice sidewalks and bikeways where local use is high for recreational purposes. Perhaps, our greatest challenge is linking them together to create a regionally-integrated network of healthy, safe places for residents to use for work and play.

### **Who does this plan rely upon for implementation?**

This plan outlines a series of goals with accompanying objectives, strategies and actions designed to make the Pioneer Valley a safer place for pedestrians and bicyclists and, therefore, increase their numbers. The success of this plan depends upon all residents of the Valley:

- Municipal governments must take it upon themselves to implement the community-specific recommendations.
- Citizen groups must work with local government to explain how they are affected by government actions and to educate one another about pedestrian and bicycle safety.
- Residents must take the initiative to reduce their reliance on cars, and walk or ride their bikes to work, school, and play.

### ***How did we develop it?***

The original 2000 Pioneer Valley regional Bicycle and Pedestrian plan was developed following a traditional strategic planning process. A strategic approach assures the most efficient use of limited resources, both human and financial, while maximizing participation by all affected groups. We continued this approach in the 2005-6 update.

### ***Public Participation in Developing and Revising this Plan***

The process for the 2000 version of the Pioneer Valley Bicycle and Pedestrian Plan started by identifying key stakeholders and collecting information about the needs and concerns of bicyclists and pedestrians in the Pioneer Valley. The stakeholders included representatives from the Joint Transportation Committee, the Pioneer Valley Chapter of MassBike, the Springfield Cyclonauts, the Franklin-Hampshire Freewheelers, Northeast Sport Cyclists, the Manhan Rail Trail Committee, the Norwottuck Rail Trail Advisory Committee, the Monson Bicycle Committee, the University of Massachusetts (Amherst), the Southwick Rails to Trails Committee, the Connecticut River Walk and Bikeway Task Force, and individual citizens with an expressed interest. Input from this group was used to articulate a vision for the plan and to develop goals and objectives. The PVPC staff compiled and mapped information on existing bicycle and pedestrian facilities and issues concerning these facilities. Injury data was also collected. Using the goals and objectives expressed by the stakeholders, the current conditions for walking and bicycling in the Valley were compared to the expressed needs and desires.

The 2005-6 update remained faithful to the input acquired during the first round of public involvement, but sought to expand on that knowledge base. To that end, we relied on an on-line survey, hosted on PVPC’s website that offered individual community members, regardless of affiliation, the chance to comment openly on potential improvement needs for PVPC communities. This feedback was analyzed and incorporated into plan updates. For this

particular document several original goals were dropped while new goals were added to reflect newer national imperatives, but the overall vision of making the Pioneer Valley a safe, enjoyable environment for bike and pedestrian trips remained the same.

From the 2000 Plan, this update retains the original six strategies for improving conditions for pedestrians and bicyclists in the Valley. These six strategies were further defined into 19 measurable action steps. The entity responsible for implementing each of the various action steps and assuring implementation of the plan remained the Non-motorized Transportation Subcommittee of the Joint Transportation Committee.

Upon completion, a draft of the original 2000 plan was circulated to everyone who participated in developing the vision goals and objectives. Copies of the draft document were also submitted to the Joint Transportation Committee, MassHighway District 1 and 2, MassHighway Planning, and local planners and advocates in the region. Their comments were integrated into this final version. This draft of the plan was made available to the public on the PVPC web site ([www.pvpc.org](http://www.pvpc.org)), at local libraries, and at the PVPC office during regular business hours. During the thirty-day period, PVPC received written comments to be incorporated into the document. Readers' comments and suggestions for implementing this plan and for improving future bicycle and pedestrian plans for the region are welcome. For the Draft version of the 2005-6 plan update, we will follow the same procedures and solicit comments from both the public and local professionals.

## Our Vision

*“The Pioneer Valley Region is a safe, convenient place to walk and to ride a bicycle. An expanding network of bikeways, sidewalks, and accommodating roadways provides every resident with a wide variety of transportation alternatives for travel to any destination.”*

Note to reviewers: We will add photos, illustrations and relevant quotations and case studies throughout the document—we would VERY much appreciate your contributions of favorite quotations—relevant to bicycling and walking, as well as good photos and illustrations and case studies. We may use the MassHighway Design Guidance/Project Manual and the EOT Long-Range Transportation Plan as sources.

Note to reviewers: We will research SAFTEA-LU and update references as necessary.

## Goals and Objectives

In the 2000 version of this plan we elaborated seven goals for this plan. We identified 15 objectives to clarify the goals and we described 33 specific and measurable actions designed to facilitate accomplishment of the goals. Below is a discussion of the status of the seven original goals along with the relevant objectives.

### Goal #1

*Create a safe and comfortable physical environment for bicyclists and pedestrians in the Pioneer Valley.*

#### Objectives

- Local and regional government and advocacy organizations will build a coordinated, comprehensive network of on-street and off-street pedestrian and bicycle facilities including shared use paths, on-street bike routes, and sidewalks.
- Municipalities will identify and incorporate “traffic calming” measures where appropriate to reduce through traffic, reduce truck traffic, reduce traffic speeds, reduce noise, reduce crashes, and provide a safer environment for pedestrians on neighborhood streets and in residential areas.
- **Note to reviewers—will update as necessary with references to MassHighway Design Guidance**

#### Discussion

The successful construction of eight distinct bike-related projects, a total increase of 20 miles of infrastructure, over the past five years demonstrates that the region is actively working to reach the goal of creating a safe and comfortable physical environment for bicyclists and pedestrians. The continuing progress of the Connecticut River Walk and Bikeway through the communities of Agawam and Springfield (and planned in Chicopee and West Springfield), demonstrates that bicycle and pedestrian efforts truly are regional in focus and scale.

The extent to which municipalities have embraced traffic calming can be seen in downtown traffic flow adjustment projects in Easthampton, Northampton and Amherst. Easthampton recently redesigned a major downtown intersection, with increased attention going to pedestrian crosswalk locations; Northampton continues to enforce crosswalk laws and is looking to redesign the intersection of South Street and Main Street to make it more friendly to pedestrians; Amherst has installed raised, flashing crosswalks and a bike lane within its town center.

Municipal DPW’s are responsible for compliance with Mass Highway Engineering Directives. The current MassHighway’s Design Manual pays close attention to Bicycle and Pedestrian Facilities, which most likely will have a strong impact on decisions of DPW offices within the region.

### Goal #2

*Integrate bicycle and pedestrian needs into the transportation planning process.*

Objectives:

- Regional and local planners and pedestrian and bicyclist advocates will review the Regional Transportation Plan and the Transportation Improvement Program to assure that bicycle and pedestrian planning elements of the programs and corresponding funding levels reflect local needs.
- “Effective Cycling<sup>2</sup>” training program (A driver’s education for bicyclists) will be offered to interested public officials.

### **Discussion**

During two successive planning cycles PVPC’s Regional Transportation Plan (2000 and 2003) has programmed funding for bicycle and pedestrian projects. Whether or not funding levels matched community demands was entirely dependent upon community interest. Some communities had funding for bike and pedestrian projects and voted them down in town meeting, and others probably have not had enough to meet demand. At the time of the 2000 Bicycle and Pedestrian Plan, the collapse of the stock market in 2001 and the ensuing economic recession that lasted until 2004 were not anticipated; these two events cannot be ignored, and in spite of them bike projects have continued.

### **Goal #3**

Integrate bicycle and pedestrian needs into the highway design process.

Objectives:

- Local transportation and public works officials will comply with Massachusetts law, chapter 87 (see appendix) which requires consideration of bicyclist and pedestrian needs on all transportation projects.
- Transportation planners, highway designers and maintenance staff will understand the needs of pedestrians and bicyclists. PVPC will work in collaboration with municipalities and Mass Highway to provide training and education on technological advances and best practices.

### **Discussion:**

MassHighway has made significant strides institutionalizing consideration of bicyclists’ and pedestrians’ needs into the roadway project design process. But there is an ongoing need to educate public works officials about the importance of meeting bicyclist and pedestrian needs in roadway projects.

### **Goal #4**

*Include bicycle and pedestrian needs in highway management and maintenance.*

Objectives:

- Highway designers, builders, and maintainers will assure that roads, sidewalks and shared use paths are maintained for bicycle use.
- Highway designers, builders, and maintainers will assure that pedestrians have a place to walk

adjacent to major roadways at all times of year, as practical including street sweeping/plowing where needed.

## **Discussion**

As is the case in Goal #3 above, there is an ongoing need to educate public works officials about the need to consider and meet the needs of bicyclists and pedestrians and not just motorized road users in both the design and the maintenance of all roadway projects in the region.

## **Goal #5**

*Integrate bicycle and pedestrian needs into the design of commercial, residential, and industrial developments.*

### **Objectives:**

- Government planners, elected officials and developers will consider the need of bicyclists and pedestrians in all new developments in the Pioneer Valley.
- Local planning board members will be provided training on the needs of pedestrians and bicyclists in the design and construction of developments.

## **Discussion**

Just as public works officials need to be educated about the needs of bicyclists and pedestrians, so do planners, building inspectors and developers of commercial, industrial and large residential developments. This is an ongoing need because of our car-centered culture. All builders, planners and developers recognize the need to integrate automobile parking and car access into their projects; similar attention should be paid to bicycling and walking. For example, some communities have passed bylaws that require a certain number of bicycle parking racks in all new developments as well as marked crosswalks for safe and easy pedestrian access.

## **Goal #6**

*Decrease the number of pedestrians and bicyclists killed and injured in traffic crashes.*

### **Objectives:**

- Schools, colleges and community organizations will provide educational opportunities for children and adults to develop skills that reduce their risk of injury while encouraging lifelong bicycling and walking habits.
- All motorists, pedestrian and bicyclists in the Pioneer Valley will be aware of their responsibilities in relation to one another when sharing the roadway.
- Law enforcement officials will enforce traffic laws, citing motorists, bicyclists, and pedestrians whenever they violate the law. The public will support enhanced police enforcement, community speed watch programs and the use of speed displays. Motorists, pedestrians, and bicyclists will obey existing traffic laws.
- Municipalities and MassHighway will incorporate, where appropriate, traffic calming measures into street designs, including the use of chokers, chicanes, traffic circles, speed humps, edgelines, and raised crosswalks where appropriate.

## Discussion

Safety concerns unite all components of a community and a region to act to protect vulnerable road users. Evaluating safety at the same time as one is promoting increased walking and bicycling is challenging—because with more people out on their feet and bicycles—the more they are exposed to danger. Some studies have shown, however, that more bicycle and foot traffic may also tend to reduce the incidence of crashes. **Note to reviewers: We will verify these studies with appropriate references.** So crashes may increase but it may not be because conditions are unsafe, it may be because more pedestrians and bicyclists are out there. Building safe facilities for pedestrians and bicyclists is the best way to ensure their safety—but limited funds and space make this most effective solution also the most inefficient. We rely on education to teach all road users how to safely share the space. PVPC, MassHighway and FHWA have successfully collaborated to produce the Pioneer Valley Bicycling Map and share the road brochure. These materials were designed with the realization that an entirely “safe” bicycling circulation system might be an admirable, but elusive, objective.

## Goal # 7

*Double the percentage of commuting trips made by bicycle or on foot in urbanized areas of the Pioneer Valley by the year 2004—0.6% of commuters will travel by bike and 12.2% of commuters will walk to work.*

Objectives:

- Area communities will actively encourage residents to walk and bike to work and school.
- Employers and major educational institutions will actively encourage employees and students to walk and bicycle to work and school.

## Discussion

Unfortunately, walking trips decreased throughout the region, but at the same time bicycle trips increased slightly. PVPC will strive to increase the number and percentage of walkers and bicyclists..

Bike Commute Week, the region’s annual celebration of bicycle commuters, has steadily drawn participants and continues to be a prominent attraction in the Spring. PVPC will continue to use this event as an outreach and public awareness campaign; distribution of the area Bike Map will most likely serve to increase the rates of bicycling, as potential cyclists will be able to plot out a course using the safest routes. Finally, the University of Massachusetts-Amherst has hired a bicycle commuting and carpooling coordinator to reduce the costs associated with maintaining parking facilities for students and faculty. **Note to reviewers: if resources are available at other regional academic institutions, they will be mentioned.**

## **CURRENT CONDITIONS: Statement of Need for Non-Motorized Transportation**

The Pioneer Valley is comprised of 43 cities and towns with diverse travel patterns influenced by how we develop land. Over 38,224 acres of undeveloped farm and forest land were converted to higher intensity uses between 1971 and 1999, a total increase of 35.7 percent in acres of developed land. However, contrary to expectations, population growth does not fuel this land conversion; during the same period of time, the Pioneer Valley's population only increased 4.4 percent, a net increase of 25,484 persons. Land along state highways has been turned into strip development that is accessible only by car. The population of urban areas has decreased while rural and suburban areas have increased. This sprawling development pattern has made it increasingly difficult to walk or bicycle as a practical and safe ways to get around.

In the largely suburban communities of the Pioneer Valley we benefit from an expanding network of existing and planned infrastructure designed for bicycle and pedestrian travelers. Today the Valley enjoys 25 miles of shared use paths with another 60 miles of proposed paths. However, as in the rest of the country we share a growing need to reduce our dependence on the automobile and increase options available for people of all ages and abilities to choose to bicycle or walk. The growing need for non-motorized transportation includes:

- Providing better air quality, (reducing fuel emissions).
- Increasing individual health, (combating obesity and related diseases) especially for low-income inner city populations and rural towns.
- Countering micro- (family-centered) and macro- (industry-centered) economic strain due to the cost of operating vehicles.
- Combating sprawling land consumption of large-lot zoning that promotes gasoline-based communities.
- Countering global climate change by reducing greenhouse gas emissions caused by transportation.
- Inspiring safe neighborhoods through traditional housing development with small-scale business.
- Decreasing our dependence on imported foreign fuel.
- Acknowledgement of the diminishing resources of traditional fossil fuels and the need to use less gasoline.

Ultimately, if we can meet these needs our communities will be able to sustain our environment and way of life.

*Air Quality:* According to the April 2005 EPA Air Quality Index the Connecticut River Valley has one of the worst air quality ratings in the nation due to the flow of contaminated air into the low, flat area running north and south created along the river. Contaminants in the air are greatly increased by automobile emissions. Since one quarter of all travel in America is less than one mile, air quality could be greatly improved if only a small percentage of those trips were made by bicycle or on foot. **Note to reviewers: We will research if the data are comparable for the Valley.**

*Health:* Obesity, with its resulting diseases of type-2 diabetes, asthma, stroke, heart disease, several forms of cancer, sleep apnea and others, will become the nation's leading cause of death within twelve years if left unchecked. Two factors contribute to this problem more than other possible causes. They are inner city poverty and car-oriented suburban development. Obesity is linked to poverty and is highest among black women who are also the poorest segment of the

population. According to the Massachusetts Department of Public Health 59% of all adults in western Massachusetts are overweight or obese.

*Economic Strain:* Nationwide, families already spend 20% of their budget on transportation costs related to automobile travel. With more people commuting greater distances to work more public and private money is spent on transportation costs. Nationally, 70% of all state and local law enforcement activities are expended on traffic management and 20% of state budgets are consumed by cars.

*Sprawl:* Since 1980 there has been an increase in housing away from job centers. The greatest increases in employment occurred in the urban core or inner suburban cities while the most remote towns experienced the greatest population increases. As people move further away from job centers for land to build homes on, there is an exponential increase in car mileage required to commute to work or shopping and entertainment centers. In the Pioneer Valley 85% of all new construction was for single family homes. The most outlying towns experienced the highest home building rates: Plainfield at 41%; Middlefield at 37%; Tolland at 46%; Wales at 30% and Brimfield at 35% and Pelham and Belchertown at 34% and 56% respectively. These rates co-exist with the fact that, were it not for in-migration during the last 15 years, the overall population of the Valley would have suffered a net loss of 10,400 people.

*Safe Neighborhoods:* Safety from automobile accidents as well as from crime is the greatest concern for neighborhood residents. Safe streets and sidewalks offer the greatest hope of increasing physical activity and the long term physical health of neighborhood residents, including especially low income neighborhoods. Recognizing this, concerned citizens have formed the Springfield Walks campaign in the most depressed area of the city to change the conditions that prevent people from being able to walk safely.

*Energy Consumption:* In the Pioneer Valley region, 38,224 acres of undeveloped farm and forest land were converted to higher intensity uses between 1971 and 1999, a total increase of 35.7 percent in acres of developed land. However, contrary to expectations, population growth does not fuel this land conversion; during the same period of time, the Pioneer Valley's population only increased by 4.4 percent or a net increase of 25,484 persons.

The Pioneer Valley Planning Commission is working with a cross-section of the transportation, employment, education, industry, governmental, and resource conservation sectors to build a "Green Infrastructure" that connects critical natural and built features in order to protect them. Increasing the total miles of travel routes that can be accessed on foot or on bicycle is one of the critical features of a sustainable infrastructure, and a long-term strategy for the region.

# Regional Status of Commuting by Bike or Walking

## Frequency of Bicycling and Walking in the Pioneer Valley

In the U.S., bicycling accounts for 0.8 percent of all travel trips, and walking accounts for 8.7 percent (according to the 2001 Nationwide Personal Transportation Survey). Daily commute populations in the Pioneer Valley range from more than 63,000 in Springfield, to 107 in Tolland<sup>5</sup>. Because of this great diversity, it is difficult to generalize about the current conditions for bicyclists and pedestrians in the region. Based on 2000 Census journey to work data, the region as a whole has 0.36 percent of its commuters traveling to work by bicycle and 5.16 percent of its commuters walking to work, below the national average.

Census data and accident statistics provide one measure of current conditions, surveys conducted at local bike and pedestrian facilities by PVPC staff provide another measure by which to measure success. Infrastructure improvements including shared use paths, sidewalks and bikelanes also serve as a barometer. Finally, the policies, regulations and practices of government are a measure of current conditions influencing pedestrian and bicyclist behavior and infrastructure development in the region.

The only communities that have bicycle commuting rates over the national average are Amherst, Hadley, Northampton and Pelham. Amherst and Northampton host Amherst College, UMASS and Smith College; Hadley is situated between the two communities which are connected by the region's first paved off-road shared use paths, the Norwottuck Rail Trail. The communities that have walk commuting rates above the national average are Amherst, Northampton and South Hadley. (See the Appendix for a summary table showing the rates of commuting to work by bicycling and walking for each community in Hampshire and Hampden County.) Amherst, Northampton and South Hadley. As noted, Amherst and Northampton host area colleges as well as UMASS and South Hadley is home to Mount Holyoke College. Across the country walking and bicycling rates are higher in "college towns" as faculty and students tend to live close to where they work, and have considerable flexibility in their work schedule—two key factors which make it much easier for people to walk or bicycle to work.

	1990	2000	Percent Change
Bike to Work	0.33%	0.36%	0.03%
Walk to Work	6.29%	5.16%	-1.13%
PVPC Total Commuters	275,710	275,932	0.0805%

In a more perfect world, the 1.13% drop in walking commuters would equal an increase of about 0.94% in bicycle trips. However, as of 2000, the numbers indicate that the region as a whole is driving more and walking and biking less. This occurred during a decade that saw more and more people moving out into rural communities, despite only a modest increase in population in the 1990s. It is highly likely that increased residential settlement of formerly sparsely populated areas carried the region's residents to scenic rural hillsides, but only that far. Bedroom communities with no shops, no sidewalks, no bike lanes and few high-paying jobs require a high degree of automobile traffic to sustain themselves. Perhaps, in the daily course of commuting to work, driving kids to school and buying groceries in the lowlands, people did not have time to

walk to work, or maybe it never was an option.

The region generates approximately 1,269,000 vehicle trips a day based on the regional transportation travel model. Using national rates, one in five of these trips are work-related. We do not have measures of how many people walk their children to school or go grocery shopping by bike. But anecdotal information collected in communities across the region suggests that the numbers are lower than they could be, and that more people do walk and bike in the communities that actively encourage bicycling and walking.

Building an infrastructure that supports non-work related trips is one strategy that might result in fewer automobile trips, better air quality and enhanced health throughout the region.

### ***Factors Influencing the Decision to Bicycle or Walk***

There are many factors that influence the choice to walk or bicycle over other means of travel.

Distance is the primary reason for not walking or biking, according to the 1990 National Personal Transportation Survey. The 2003 *Omnistats* bulletin found that 29% of all one-way automobile trips were between one and five miles, a reasonable biking distance. Distance between important destinations can be reduced by changing local land use patterns. Compact development and transit-oriented development can allow land uses that encourage walking and bicycling. Recent trends run counter to this goal. Many communities in the Pioneer Valley have recently built new schools, public libraries, and post offices—important everyday destinations--on land on the outskirts of town centers instead of locating them downtown or near residential centers. These locations are often on high-speed roadways that do not accommodate pedestrians, especially young children or elderly people. Distance between destinations is an important factor affecting people's choice to walk or bike, but it is not the only factor.

Safety concerns can be enough to shape decisions to ride or bike to a destination. The Norwottuck Rail Trail, the first off-road facility built specifically to accommodate the needs of bicyclists and walkers in the Pioneer Valley, has been open since 1993 and links Belchertown, Amherst, Hadley, and Northampton. Since the trail's opening, which has provided the staff at PVPC with a wealth of data about use patterns on the region's most well-established bike-pedestrian facility (finish sentence appropriately). These surveys have shown, over time, that a significant portion of the users only ride on the Rail Trail because they fear other bicycle routes are not as safe. It may be presumed that without the Rail Trail, these users would not be on their bicycles. Concern about safety surfaces in surveys of Bike Commute Week participants, in which commuters expressed uncertainty about knowing which routes are safe to ride on. This resulted in PVPC obtaining funding for the research and publication of a regional bike map, for which all roads in the region were surveyed according to their level of bicycle safety. The bike map was distributed free of charge to area cyclists during Bike Commute Week in an effort to increase rates of bicycle ridership.

Other important factors that influence choosing to walk or bicycle include: lack of capability, the need to transport large items or additional passengers such as children, the need for a car at work, access to appropriate routes, environmental conditions such as hills and climate, and access to secure bicycle parking, and shower facilities.

## **Pioneer Valley Bicycle and Pedestrian Injury Data**

Data from the Massachusetts Department of Public Health (MDPH) on inpatient hospitalizations show that 119 (out of 608,479) Pioneer Valley residents were hospitalized for a bike or pedestrian injury in 2003. Of these injuries, 73 (61%) were motor vehicle related. The others were bicyclist versus pedestrian or bicyclist alone or in conflict with another bicyclist. The number of injuries to bicyclists and pedestrians has dropped slightly since 1997, when 126 injuries occurred, but has remained relatively stable during the past several years.

Fatalities in Massachusetts however, increased from 8 to 22 between 1997 and 2003, especially for pedestrians. In 2003, 82% of all bicycle and pedestrian fatalities were motor vehicle related, and nine out of ten of these fatalities resulted from pedestrian and motor vehicle collisions. This is troubling because the overall amount of pedestrian traffic decreased between 1990 and 2000; the fact that fewer people were walking and more people were suffering fatalities suggests the need to focus additional resources on the area of pedestrian safety. On a national scale, the number of people walking has steadily decreased, and this has corresponded with a drop in pedestrian injuries and deaths<sup>4</sup> In the Pioneer Valley we need to act to require crosswalk law enforcement, sidewalk construction, sidewalk maintenance, bylaws for sidewalks in new development and cooperation between private developers and municipalities.

Emergency Department Data document the number of individuals that enter emergency rooms and leave without needing a period of hospitalization to treat their injuries. In 2003, the most recent year for which data is available, 1,524 pedestrians and cyclists went to Emergency Departments in the Pioneer Valley. Combined, these two categories accounted for 2.1% of the Valley's 72,384 Emergency Department discharges. Most bicyclist Emergency Department discharges are among cyclists who injure themselves without the assistance of a motor vehicle. However, the bulk of pedestrian-related Emergency Department discharges are the result of a pedestrian injuring himself in a motor vehicle-related accident. This pattern is true for both hospitalizations and emergency department discharges, and supports the need to fully accommodate the needs of pedestrians through enhancing the walkability of our communities.

## **Vehicle Miles Traveled**

Vehicle miles traveled (VMT) in the Springfield-Chicopee-Holyoke area rose by 45 percent from 1990 to 1998. This trend was also evident within the entire region. Between 1993 and 2000, VMT for the region increased 11 percent from 13.056 million to 14.198 million. Commuting time also increased. As of 2000, 61 percent of the region's workers traveled more than twenty minutes to work and 21 percent traveled more than 30 minutes; a number of commuters were traveling more than 40 minutes to get to and from work. Single occupancy trips also increased 3.5 percent. Carpooling declined from 11 percent of all work trips to 9.6 percent.

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<sup>4</sup> *Mean Streets 2004: How Far Have We Come?* Surface Transportation Policy Project, 1100 17th St., NW, 10th Floor, Washington, DC 20036

## **Current Road/Trail Infrastructure**

From bicyclists racing down a country road in the hill towns, to pedestrians on sidewalks in urban areas, and children in school crossings in the suburbs, pedestrians and bicyclists are everywhere in the Pioneer Valley. The infrastructure that accommodates this movement exists in varying degrees and forms, and is expanding every year. Six communities currently provide shared use paths or 'rail trails' while 15 others are actively planning or designing a total of 19 bikepath projects. Many communities have expanded their sidewalk networks by incorporating sidewalk improvements in larger roadway construction projects or through local expenditures of Chapter 90 allocations. In 1996 PVTA installed bicycle racks on buses in the 5 College area and in 1997 purchased parking racks for 400 bicycles to be installed along transit routes. While these efforts have provided new opportunities for thousands of people to walk and bike to destinations, many infrastructure needs still exist.

Table 1: Built Facilities

<b>On-road and Off-road Facilities</b>	<b>1990</b>	<b>2000</b>
Number of Existing Facilities	6	10
Existing Mileage	36.5	42.15
Number of proposed projects	14	9
Proposed Mileage		23.1

### *On- Road Infrastructure*

There are 4,325 miles of functionally classified roadway in the Pioneer Valley. Eighty seven miles are Interstate, where walking and bicycling are prohibited. Massachusetts law requires that bicyclists and pedestrians be accommodated on the remaining 4,238 miles of roadway. Local cities and towns maintain the majority of roads in the Pioneer Valley, 3,441 miles, and MassHighway has direct jurisdiction over the 294 miles of state roads in the region.

Bicyclists who completed a survey proclaimed the region “a great place to bicycle.” This is clearly good news for bicyclists, planners, engineers, and public works officials. However, research\* suggests that while many experienced bicyclists feel comfortable riding on roadways, inexperienced bicyclists (including many children) avoid bicycling due to perceived dangerous and uncomfortable conditions on the region’s roadways. (Note to reviewers: We will \*cite the research: date, title, author(s), etc.) Population growth, sprawling development, and new transportation facilities have resulted in regional increases in traffic volume and accompanying increases in vehicle speed without concurrent improvements for pedestrians and bicyclists.

### *Bridges*

There are 673 bridges in the Pioneer Valley. 310 are administered by MassHighway, 85 are under the jurisdiction of the MassPike, and 278 are administered at a municipal level. While most new or reconstructed bridge projects have followed state and federal guidelines for improving pedestrian and bicycle access, many bridges still lack sidewalks and adequate shoulder width. The roadway system in the Pioneer Valley crosses 7 major rivers including the Connecticut, Westfield and Chicopee. Design and maintenance of the bridges that cross these rivers directly influence people’s decision to walk or drive. Some of the 673 bridges in the region are classified as structurally deficient and/or functionally obsolete (with an ASSHTO rating below 50). Bridge reconstruction projects in the near future will provide opportunities to improve bridge sidewalks and add shoulder width for cyclists. As of 2003, there were 60 bridge projects scheduled for completion in the region with a total estimated cost of \$152,047,982.

### *Off Road Infrastructure (Bikepaths and Shared-use Trails)*

Currently, there are 29 miles of completed shared use paths and 19 miles of completed on-road bike lanes. Combined, these bike facilities amount to a little more than 44 miles of bike travel routes for the region's commuters. Another 121 miles of facilities (including both shared use facilities and on-street bike lanes) are proposed for development in the future, and some of them are under construction as of this plan's date of publication.

Off-road facilities include shared use paths and traditional bikepaths rail trails, and foot paths, all of which can be effective components of the transportation network when they:

- introduce new users, including children and the elderly, to the benefits of walking and bicycling;
- isolate users from potential conflicts with motorized traffic and preserve existing corridors for future transportation use like light rail and express transit routes;
- provide economic benefits from shared utility leases, increased property values, and tourism;
- increase the percentage of bicycling and walking commutes and other utilitarian trips. (In the Northampton/ Hadley/Amherst/Belchertown area where three off-road facilities exist 15.27 percent of commuter trips are by foot or bicycle, compared to only 5.51 percent for the region as a whole.)
- provide access not offered by the roadway system (shortcuts, links to road segments).

Since the 2000 Bicycle and Pedestrian Plan, eight projects have been completed throughout the region, bringing approximately 20 additional miles of built infrastructure to the region. When combined with a strategic vision of planning regionally for trail use, these projects have significantly impacted the quality of the experience available to the region's bicyclists and pedestrians.

#### *List of Projects Completed since 2000:*

- Agawam Downtown Loop; Main St., School St., West Springfield Dike Segment; Route 5 at Elm to Route 5 at Hayes – 3 miles on road, 3 miles off road
- Amherst/Umass Connector – 2 miles
- Agawam CT. River Riverwalk and Bikeway — 1.50
- Amherst South Pleasant Street Bike Lanes—0.25
- Amherst/Belchertown extension of the Norwottuck Rail Trail? (check chronology)-1.20
- Easthampton Manhan Rail Trail –5.2
- Northampton South Street Bike Lanes – 1.10
- Springfield CT. River Riverwalk and Bikeway – 3.70

**Total: 20.95-this includes both on-road and off-road facilities**

As popular as the region's bikepaths are, there are improvements that would make them more attractive to users. The following table describes conditions that are challenging for users of bikepaths and shared use paths. Many of these conditions were identified during presentations of the earlier draft versions of this document at public meetings.

## *Use of Transportation Enhancement Funds*

According to the requirements of the recently passed transportation bill, SAFETEA-LU, continues the policy of ISTEA and TEA 21 requiring that **10 percent** of all federal Surface Transportation Plan Program dollars be allocated toward Transportation Enhancements. Nationally, Transportation Enhancement dollars have been a vital source of funding for bicycle and pedestrian projects.

## *Community Priorities in Community Development Plans*

In January, 2000 then-Governor Paul Cellucci signed Executive Order 418 into law to help local communities develop Community Development plans to manage housing growth, economic development, open space and resource protection and transportation. EO 418 was passed after the 2000 Bike and Pedestrian Plan was published. Of the 29 communities completing CD plans in the Pioneer Valley, 18 included goals and action steps for bicycle and pedestrian transportation projects; 5 communities included goals and action steps for either bicycling or walking; and only four communities made no plans for bicycling or walking facilities as shown in the table below.

*Table Two: Bicycle and Pedestrian Inclusion in Community Development Plans*

<b>Community Development Plan</b>	<b>Bike Goals</b>	<b>Pedestrian Goals</b>	<b>Policies</b>	<b>Actions</b>
Agawam	√	√	Support regional efforts	Continue to promote and complete phases I & II of the Connecticut Riverwalk
Amherst	√	√	Continue to Promote a walkable downtown as well as enhancing existing trail network	<b><u>Pedestrian:</u></b> Support improvements and designs that strengthen Amherst as a walkable, pedestrian-friendly downtown. <b><u>Bike:</u></b> improve trail maintenance, rehab and repair damaged sections, provide new connections to residential neighborhoods, new connections with the Norwottuck

				Study alternate traffic, parking and pedestrian patterns around the common; work with property owners to reduce the number of curb cuts on congested streets; establish a system of bikeways and hiking trails (separate from roadways if possible) connecting far ends of town to recreation and other public facilities
Belchertown	√	√	Preserve bicycle and pedestrian access; encourage bicycling and walking	
Blandford	no	√	Provide recreational opportunities	Develop a network of hiking trails with special attention paid to potential regional connections
Brimfield	no	√	Sidewalk network maintenance	Repair and maintain the sidewalk network at the Town Center
Chester	√	√	Safe transportation system that accommodates all types of uses	Support local and regional greenway plans by conducting a town-wide land inventory; create a system of bikeways and walkways that link up with neighboring communities
Chesterfield	√	√	Improve conditions within the town center	Improvements to pedestrian and bicycle environment that facilitate travel to civic infrastructure
Chicopee	no	no		<b>Projects:</b> Chicopee Riverwalk & Bikeway and Connecticut Riverwalk and Bikeway
Cummington	no	no		
<b>Community Development Plan</b>	<b>Bike Goals</b>	<b>Pedestrian Goals</b>	<b>Policies</b>	<b>Actions</b>
East Longmeadow	√	No	Build and improve facilities	Construct/expand Redstone Trail Bikepath Project; install bike racks where needed
Easthampton	√	√	Sidewalks, crosswalk alignment, Manhan Rail Trail Expansion	Sidewalk Inventory, bike commute week, extend Manhan to Norwottuck, bike racks, examine intersections in center of downtown
Huntington	no	√	Pedestrian network, mobility	Secure pedestrian bridge during Route 112 reconstruction, open space greenways along rivers and water bodies
Goshen	no	no		

Granby	no	√	Improve sidewalk network	Complete a sidewalk inventory so that needs can be identified
Hadley	√	√	Improve maintenance of streets and sidewalks; expand on-road and off-road facilities	Create new bikeways and multi-use paths through town; amend zoning to ensure that new development has adequate pathways for bikes and pedestrians, includes parking; Sidewalk inventory, bike commute week, bike racks, pursuit of off-road trails, special attention paid to Five-College Bikeway
Holland	√	√	Use existing infrastructure, local system of trails, enhance pedestrian safety	<b>Pedestrian:</b> plan to install sidewalks in town center. <b>Bike:</b> Map bike routes in northern section of town; connect town center to Lake Siog (Holland Pond);
Longmeadow	√	√	trail system, pedestrian and bicycle safety, improve sidewalk options	Develop a trail system through The Meadows & Fannie Stebbins Wildlife Sanctuary, improve sidewalks and crosswalks on Bliss and Williams street, Update Longmeadow's Bike Plan, link a bike path system with the Connecticut Riverwalk and Bikeway
<b>Community Development Plan</b>	<b>Bike Goals</b>	<b>Pedestrian Goals</b>	<b>Policies</b>	<b>Actions</b>
Northampton	√	√	ensure high quality pedestrian environment; accommodate bicycling as a legitimate form of transportation	Ped: signalized intersections, sidewalk inventory, begin a sidewalk pavement management program, sidewalk ordinance for new roadway projects, unified policy on crosswalk designation Bike: bike lanes, when appropriate; draft a city policy on use, maintenance of bicycle facilities; make all catch basins "bike-safe"
Palmer	√	√	Reuse of abandoned right of ways	Become a link of the Massachusetts Central Rail Trail, pursue a link with the Ware River Trail in the North of town
Plainfield	√	√	town-wide trail system	Use volunteers, signage and brochures to assemble a town-wide system.

Russell	√	√	map and maintain existing trails, linkages to existing network	Build connections for hikers, bikers and other users; develop accessible trail along International Paper Route and Potash Brook
South Hadley	√	√	sidewalks, on and off-road facilities	Ped: Complete sidewalk inventory; Bike: Participation in "Bike Commute Week", purchase and install bike racks, continue to pursue the development of off-road bicycle trails as part of the Five College Bikeway network
Southampton	√	no	Bikepath along existing right of way	Stalled/failed effort to design and construct a linkage to Manhan
<b>Community Development Plan</b>	<b>Bike Goals</b>	<b>Pedestrian goals</b>	<b>Policies</b>	<b>Actions</b>
Southwick	√	√	Sidewalk improvements, multi-use trails, retrofitting existing structural footprints, pedestrian safety, linkages with existing protected lands	Network of hiking trails, making shopping areas safe through carving out space for sidewalks, sidewalk and bikeway from Feeding Hills Road to Depot Street, Link College Highway sidewalks with "a Southwick town center network" for civic buildings and Prifti Park, minimize curbcuts.
West Springfield	√	√	Improve sidewalks, separate trails, retrofit roads, regional connectivity	Develop a network that separates motor vehicles, bikes and pedestrians; install shoulders on narrow roads; coordinate connections to regional walks and bikeways with neighboring communities

Wales	√	√	local interest, local connectivity	Develop a multi-user trail system that ties into existing trails, parks and cultural destinations
Williamsburg	no	no		
Ware	√	√	Town-wide trail system; make new developments pedestrian and bicyclist friendly; acquire land	Ware River Valley Greenway Project, acquisition of lands; use zoning to require new development to be bicycle and pedestrian friendly; fund the construction of the regional multi-use trail system
Worthington	√	√	Open space linkages	Develop a multi-user trail system and greenway network

While the diversity of geography and community types existing within the PVPC region can make it difficult to develop a uniform approach to bicycle and pedestrian facilities throughout the valley, it is still interesting to note that many communities expressed an interest in bicycle and pedestrian projects at this *particular* stage of the planning process. However, the participatory nature of New England democracy can make it difficult to form town-wide consensus on implementing bicycle and pedestrian planning projects.

## Regional Actions

### ***Bicycle and Pedestrian Needs***

#### *Integrating Bicycle and Pedestrian Needs with Transit*

In 1997 the Pioneer Valley Transit Authority implemented a bikes on bus program called “Rack and Roll” to improve access to transit. As part of the program bicycle racks were installed on the front of buses serving the Five-College area of Hampshire County. Early surveys of “Rack & Roll” users found that the new service increased transit ridership and also increased the number of bicycle trips, providing a viable alternative to the automobile. Many bicyclists use the racks to complete one leg of a journey, while others claim to use the bus for return trips during periods of inclement weather.

UMASS Transit began tracking use of the bicycle racks during the start of the program (3/24/97). Bus drivers inform the dispatcher via radio each time a bicycle is loaded on the rack. Usage has climbed steadily, as shown in the following table. The bus racks on the Sunderland and South Amherst route (31) is the most frequently used accounting for 50 percent of all Rack & Roll users. These two routes access the largest apartment complexes in the Amherst area. Bus service on route 31 provides cyclists with an alternative to a steady two mile climb from South Amherst to the town center and Sunderland follows State Route 116, a roadway with traffic speeds of 55 m.p.h.

In a survey of users, 78% reported that they had used the bus more frequently since the racks were installed. 85% reported riding a bicycle more often after they began using the racks. The combination of a dense central business district and suburban residential areas create short travel distances for trips in and around the town center with the longer journeys to and from residential neighborhoods accessed by bus. Users reported riding their bicycle for short trips to destinations not served by transit while the bus was used for longer trips. Of particular importance, the survey showed that over 28% of the respondents would have driven their car for their specific trip had the Rack & Roll program not been in place.

In 2003, PVPC secured funding from the Massachusetts Transportation Demand Management (TDM) Program (a sub-category of Congestion and Air Quality Mitigation (CMAQ) funds) for a comprehensive bicycle encouragement program called, Share the Road. Funding was used to update the very popular Pioneer Valley Bicycle commute map and to purchase and distribute bike parking racks as well as “Share the Road” signs for heavily-used bike routes. Member communities that were willing to participate in the program received this equipment free of charge. Since its implementation, PVPC has distributed bike lockers and “Share the Road” signs in conjunction with the Franklin County Regional Council of Governments. In addition to funding these programs, TDM funds have assisted in implementing PVTA’s Rack N’ Roll Program, acquiring Sheldon Field and bicycle lockers for Northampton’s Park & Ride Project.

### *Regional Policies, Regulations, and Practices*

There are no regional policies governing pedestrian and bicycle use and infrastructure development in the Pioneer Valley. Federal and state policies and regulations stipulate technical standards and guidance and provide the funding for the implementation of many bicycle and pedestrian projects, but it is the local unit of government that oversees, and in some cases actually designs and builds transportation infrastructure—bikeways, trails, sidewalks, intersections, bridges, etc. Federal programs provide funding for transportation and transportation enhancement projects that include many bicycle and pedestrian projects. State regulations and policies affect highway projects and some local roadway projects through the provision of Chapter 90 funding that communities can choose to use for implementing bicycle and pedestrian projects. The next section provides a brief overview of the state and federal policies and regulations that can impact bicycle and pedestrian projects in all the communities of the Pioneer Valley.

### **Federal Policies, Regulations, and Practices**

Since the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991, the federal government has played a historically unprecedented role in promoting walking and bicycling. In his introduction to the National Bicycling and Walking Study, then-Secretary of Transportation Federico Pena stated, “We (The United States Department of Transportation) want to improve mobility by promoting strategies that give people more choices ... especially by making better connections to public transit and by providing safer ways to bicycle and walk. The goals of the National Study are: to double the current percentage (from 7.9 percent to 15.8 percent) of total trips made by bicycling and walking, and to simultaneously reduce by 10 percent the number of bicyclists and pedestrians killed or injured in traffic crashes.” Federal regulations, plans, policy statements and planning guidelines issued since 1991— including the

latest transportation law, Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), authorized in 2005 — continue to support walking and bicycling as important transportation choices that should be available to all Americans who want them.

Federally-funded transportation projects (including bicycle and pedestrian projects) are prioritized in the region through the Transportation Improvement Program (TIP). This annually updated document matches available federal funds with local projects. The Region's Joint Transportation Committee prioritizes projects for the TIP. Since the beginning of ISTEA the JTC has programmed \$12,178,279 for bicycle and pedestrian projects. This amount is in addition to the sidewalks, roadway shoulders, crosswalks and transit shelters constructed as part of regular roadway and transit improvement projects.

In keeping with a national trend, the largest source of federal funding for bicycle and pedestrian projects in the region is the Transportation Enhancement Program (described in the Appendix).. In this round of transportation funding, Transportation Enhancement Program dollars equaled 10 percent of the total \$244.1 billion authorized within SAFETEA-LU. Successful provisions from TEA-21, such as the CMAQ Program, were retained and are outlined in a table included in the Appendix.

CMAQ funds were used by the Pioneer Valley Transit Authority to create the bikes on bus program (Rack & Roll), and PVTA used CMAQ funding to purchase parking racks for 400 bicycles in downtown Amherst and Northampton. Scenic Byway funding was used by Jacobs Ladder Trail Scenic Byways Inc. to develop and publish a 127 page map guidebook; "Jacob's Ladder Trail by Bicycle or Car," funded the "Eastern/Western Region Off-road Bicycle and Multi-use Trail Map", and planning efforts on Route 47 for a tri-state scenic byway initiative. In addition, the Pioneer Valley Planning Commission was awarded CMAQ funds in FFY 2000 through the Massachusetts Transportation Demand Management Program to launch the very successful Pioneer Valley Bike Commute Week project—which has been self sustaining ever since and is now in its seventh year and again in 2003 (update to 2006!) to develop the comprehensive Share the Road program. Given the current shortfall in available federal funding, the region will need to continue seeking funds through a variety of federal programs in order to implement the goals of this plan.

### *Safe Routes to School*

SAFETEA-LU created the Safe Routes to School Program, which has potential to improve the range of opportunities for bicyclists and pedestrians through making bicycling and walking more appealing by increasing the safety of areas around schools. Funds can be used for traffic calming, off-street bicycle and pedestrian facilities, bike parking, on-street bicycle facilities, sidewalk improvements and traffic diversion projects within a two-mile radius of a school. Additionally, states can spend no less than ten percent but as much as thirty percent on awareness campaigns, education and media presence. As this is a new program, PVPC communities have every reason to pursue funding from this resource, which will grow from \$54 million to \$183 nationally over the next five years.

The city of Northampton has two schools participating in the first round of Massachusetts Safe Route to School program, the Bridge Street School and the Jackson Street School. Early participation will better situate the city of Northampton for SRTS infrastructure funds.

## *Americans with Disabilities Act*

The Americans with Disabilities Act (ADA), section II (1990) prohibits discrimination on the basis of disability in employment, State and local government, public accommodations, commercial facilities, transportation, and telecommunications. According to the ADA, all actions undertaken by state and local governments must fully accommodate people with disabilities. For this reason, the construction of all pedestrian facilities must meet the needs of citizens living with disabilities.

## **Commonwealth of Massachusetts Policies, Regulations and Practices**

The Commonwealth of Massachusetts has undertaken major initiatives to encourage bicycling and walking. The Department of Public Health, Governor's Highway Safety Bureau, and the Massachusetts Department of Economic Development/ Office of Travel and Tourism actively promote safe travel for bicyclist and pedestrians in the Commonwealth. In 1998 the Executive Office of Transportation and Construction finalized the Statewide Bicycle and Pedestrian Plans. Under the direction of MassHighway the plan outlined 15 "Action Items" and 74 "recommendations" that directly impact bicycle and pedestrian transportation in every community in the Commonwealth. As a Regional Planning Agency, the Pioneer Valley Planning Commission is identified as an implementing agency for 19 of the 74 recommendations. These recommendations include; actively preserving former railroad corridors for bicycle and pedestrian use, encouraging increased bicycle use on transit, and the promotion of events and activities that encourage bicycling, among others. The recommendations of the state plan are incorporated into the action and strategy section of this plan. As with the Pioneer Valley Bicycle and Pedestrian Plan, each of the State Plans require a "concerted effort of state, regional, and local agencies, private organizations and businesses, and the public" for implementation.

In 2005, Governor Romney created the Massachusetts Bicycle and Pedestrian Advisory Board (MABPAB) to oversee and support pedestrian and bicycling initiatives across the Commonwealth. EOT also hired a consultant to update the state bicycling plan and is preparing a Scope of Work to update the state pedestrian plan.

## *Chapter 87*

In 1996, the Massachusetts legislature took a significant step toward accommodating bicyclists and pedestrians in the Commonwealth, enacting Chapter 87 [MA ST 90E s 2A] of the Massachusetts General Laws. This legislation and the MassHighway Engineering Directives that followed directly influence the design and construction of public roadway projects in the state.

Engineering Directive E-98-003 (dated 5 May, 1998) defines recommended travel lane widths, and establishes a benchmark for reasonable bicycle and pedestrian accommodations. The benchmark for pedestrian accommodations is to "provide one continuous paved surface or sidewalk along all roadways where pedestrian access is legally permitted." The MassHighway benchmark for reasonable bicycle accommodation is to provide a continuous usable paved shoulder adjacent to the outside travel lane in each direction on roadways where bicycles are legally permitted:

"The desirable width of the outside travel lane plus the paved usable shoulder (curb lane) is at least 5.0 meters (plus 0.5 meter "guardrail" offset). "When this width cannot be reasonably

accommodated, the minimum width of the outside travel lane plus the paved usable shoulder (curb lane) for the accommodation of bicycles is 4.5 meters (plus 0.5 meter “guardrail” offset). For roadways with low speeds of less than 45 m.p.h. (85<sup>th</sup> percentile speeds) combined with low volume of less than 2000 AADT, the minimum roadway widths as defined in Chapter 8 of the Highway Design Manual may be used to conform with bicycle accommodation. Bicycle lanes and shoulder bikeways are encouraged and should be considered early in the design process.”

That Directive is no longer operative. I recommend that you cull appropriate bicycle- and pedestrian-related text from the recently-adopted MassHighway Design Guidance and Project manual.

The directive applies to full depth reconstruction projects funded through the Chapter 90 Program. The Directive does not apply to maintenance and resurfacing projects, and a waiver may be requested.

***“Project design engineers shall use sound engineering practice in making reasonable provision to accommodate bicycles and pedestrians in project designs. This generally includes assuring continuous paths of travel with smooth surfaces without obstructions or impediments. This Directive must be addressed on all projects at the 25% design level.”***

MassHighway Engineering Directive E-98-003

#### *Low Speed/Low Volume Road Standards*

Not every road in the region warrants a 4-foot shoulder. Many roads in the Pioneer Valley are sought out by bicyclists for their rural character, scenic views, and low traffic volumes. To protect the character of these roads, MassHighway established a low speed/low volume design standard. The low speed/low volume standard applies to the resurfacing, rehabilitation and reconstruction of existing low speed/low volume roadways. Under this design standard, roads with volumes below 2000 and with speeds below 70km/hr may be designed with less overall width than a conventional roadway. Only roadways functionally classified as collectors and local roads are subject to low speed/low volume roadway criteria. A copy of the low speed/low volume table from the MassHighway Metric Design Manual (1997 Edition) is included in Table 8. **Note to reviewers: We will update with the most current MassHighway publications and guidance.**

Engineering Directive E-97-004 (dated July 1, 1997) addresses the construction of travel space for pedestrians on public roads. The directive states that...

“Project design engineers shall use sound engineering practice in making reasonable provisions to accommodate...pedestrians in project designs. This generally includes assuring continuous paths of travel with smooth surfaces and without obstructions or impediments.”

In order to accomplish this, MassHighway requires the accommodation of pedestrian through either an additional paved surface or a sidewalk on all roads where it is legally feasible.

**Note to reviewers: Appropriate, current MassHighway design guidance will be folded into the text of this plan**

## *Chapter 90*

Chapter 90 funds consist of state revenues appropriated through the Massachusetts Legislature as part of the Transportation Bond Bill and through supplemental budget agreements. The vast majority of local road projects are funded using monies available through the Chapter 90 program. This locally administered funding source is used for maintenance, resurfacing, sidewalk repair, traffic signal improvements and many local improvements. A table of the Chapter 90 apportionment for Pioneer Valley Municipalities is included in the Appendix.

### *Massachusetts Scenic Roads Law*

(Mass. Gen. Laws Ann. Ch. 40, § 15C (West Supp. 1994)) Citizens can urge their conservation commission, planning board, or historical commission to recommend to the town or city that any road, other than a state highway, be designated as scenic. If one of these bodies makes such a recommendation, the town or city can make the designation. A numbered route, however, can be designated as scenic only if it is entirely located within the town or city and no part of it is owned or maintained by the state.

Once a road has been designated as scenic, trees or stone walls along it can be destroyed only after a public hearing and the approval of the planning board. Municipalities can use state funds to repair scenic roads, and they may pass an ordinance or bylaw to fine persons who violate the scenic roads law.

### *Massachusetts Environmental Policy Act*

This law requires the Secretary of Environmental Affairs to review projects, including road projects, above a certain size that are funded by state agencies, require a state permit, or involve acquiring rights to state property. This review can be used as an important tool to require the consideration of less environmentally damaging alternatives to a road project and to commit to measures that will mitigate the project's environmental impact. Review under MEPA begins with the filing of an Environmental Notification Form (ENF). For example, MassHighway must file an ENF with the MEPA Unit of the Executive Office of Environmental Affairs if it is funding a road project and the project will:

- ❖ increase the total pavement width of a road four feet or more for an aggregate of 1000 feet or more;
- ❖ alter the bank or terrain (other than alteration of bank or terrain required for the installation of equipment or structures) at a distance of 10 feet or more from the existing pavement;
- ❖ require the cutting of five or more living trees, 14 inches or more in diameter at breast height; or
- ❖ eliminate 300 feet or more of stone wall.

To find out whether an ENF has been filed, call the MEPA Unit in Boston (Tel. 617/727-5830.) If you believe that a road project will have a significant impact on your community and environment, you should urge the Secretary to require the preparation of an Environmental Impact Report (EIR). An EIR is a much more detailed document than an ENF, and must analyze in detail all reasonable alternatives to a project and identify all feasible mitigation measures. In your comments, you should describe any project alternatives that you think might accomplish the goals of the project with fewer harms to your community and environment. At the end of the comment period, the Secretary will decide whether she will require the preparation of an EIR. During that time, a public meeting may be held to discuss the project. Citizens have an opportunity to comment on a draft EIR and then on a final EIR.

### *Historic Preservation*

This law requires state agencies to notify the Massachusetts Historical Commission (“MHC”) about projects they are planning to undertake, license or fund “as early as possible.” Notice must be given on a Project Notification Form or on an Environmental Notification Form. Once MHC has received a complete form, it has 30 days to determine whether the project will have “adverse effects” on a district, site, building, or structure included in the State Register of Historic Places. The state register, by definition, includes all properties included in the National Register of Historic Places. Citizens may submit comments to the MHC during the 30-day period. If you believe that a road project will have a significant impact on a state historic district or place, you should describe the impact and request the Commission to make a “determination of adverse effect.” If the Commission makes such a determination, it must begin a formal consultation process to consider project alternatives that would minimize the adverse effects. That process must involve the public and the local historic commission.

### *Shade Trees Act*

Under this law, all trees within a public way are considered public shade trees. With certain exceptions, these trees may be cut, trimmed, or removed only by a municipality’s tree warden or by obtaining a written permit from the tree warden. Before any public shade tree is cut down, a public hearing must be held. Notice must be given seven days prior to the hearing in a newspaper of general circulation and posted on the tree itself. If any person objects to the removal of a public shade tree before or at the hearing, the tree may not be cut down without the approval of the Select Board or the Mayor. The law, however, does allow the removal of “any tree if so ordered by the proper officers for the purpose of widening the highway.”

## **Local Policies, Regulations, and Practices**

There are a variety of policies, regulations and practices that can be implemented at the local level to create environments that encourage walking and bicycling. These include:

- Having a dedicated staff person or person working on pedestrian and bicycle issues.
- Developing a community bicycle/pedestrian plan.
- Creating a Pedestrian/Bicycle Advisory and/or Review Committee composed of municipal staff, citizens or a combination of the two:

Municipal staff (planning, public works, traffic, engineers, housing, etc.)—to assure consideration of pedestrians’ and bicyclists’ needs in all developments.

Citizen representatives—to assure community involvement and understanding.

- Implementing pedestrian and bicycle-friendly regulations and ordinances, such as requiring bicycle parking and sidewalks in all new developments, using bicycle-friendly drainage grates (as specified in the MassHighway Design Guidance and Project Manual), installing pedestrian controls at traffic signals, and installing bicycle-activated traffic signals.
- Signing and striping bike lanes.
- Slowing traffic on neighborhood streets through traffic calming measures including the use of traffic circles or a community speed watch program.
- Developing and disseminating a community bicycle plan.
- Sponsoring pedestrian and bicycle safety programs and campaigns.
- Dedicating law enforcement officers to enforce traffic laws and citing motorists, as well as pedestrians and bicyclists, who violate the law.
- Encouraging municipal employees to commute to work by bicycle.
- Providing a “fleet” of bicycles to municipal employees, such as meter readers and building inspectors, who have to travel around the community for their work. (A bicycle/pedestrian friendly checklist for municipalities is included in the Appendix)

### *Land Use and Zoning—general patterns of land use*

Given that the goal of this regional bicycle and pedestrian plan is to make the Pioneer Valley a safer and more pleasant place to walk and ride a bicycle, it is important to address the connection between land use and transportation planning. As we have seen in previous sections of this plan, there are two land use approaches to promoting bicycling and walking.

- Given existing land uses, adapt the transportation facilities to include accommodations for pedestrians and bicyclists, and change the environment so that people feel comfortable walking and bicycling, for example stripe lanes and build facilities for bicyclists and pedestrians on and off roads, build sidewalks, and educate pedestrians, bicyclists, and motorists on how to share the road.
- Use land differently, so that people do not have to travel such long distances to get to the places they need to go, thereby making it more sensible to walk or ride a bicycle than it is to drive.

In the Pioneer Valley, we can take advantage of both approaches described above, to make it easier to walk and bicycle here. Chapter IV, Strategies and Actions, details ways that both regional and local bicycle and pedestrian advocates can build and adapt existing transportation facilities and political environments to accommodate pedestrians and bicyclists. Local zoning ordinances and subdivision regulations can help communities use land in such a way that bicycling and walking are sensible transportation options.

Research on people’s transportation behavior suggests that most people will not travel more than two miles by bicycle. Similarly, research indicates that when walking, most people are unwilling to walk more than half a mile to reach most destinations. Thus, it is important that places of employment, recreation, and commerce be no further than two miles from places where people live. Providing housing close to places of employment, schools, educational institutions, and commercial developments is called compact development or smart growth.

Compact development not only fosters better walking and biking; it creates a more efficient transit system with buses quickly connecting clustered areas of activity. Building more accessible pedestrian and bicycle connections between transit stops and neighborhoods, schools,

commercial areas, and places of employment is a key factor in making transit more popular in the region. Providing bicycle racks and lockers at transit stops and bicycle racks on buses will also increase the number of people that can use transit conveniently. By increasing the use of transit, traffic congestion can be decreased and neighborhoods will become more attractive for walking and biking.

Tools to facilitate compact growth include community master plans, mixed use zoning, transit-oriented development (TOD), traditional neighborhood development, village center zoning, creative/open space/cluster development, commercial infill in neighborhoods, brownfields development incentives, farmland protection zoning, commercial strip development controls, downtown development incentives, Planned Unit Development (PUD), business villages with on-site housing, accessory apartment bylaws, green belt open space acquisition programs, inclusionary zoning, environmental protection provisions, and limits imposed on infrastructure expansion. (For detail on these tools, and copies of model ordinances, see the ***Pedestrian, Transit and Bicycling Workbook*** developed by PVPC and available from the American Institute of Certified Planners or look at the PVPC smart growth Tool Kit at [www.pvpc.org](http://www.pvpc.org) or the Executive Office of Environmental Affairs (EOEA) Smart Growth Tool Kit available on-line.). To change existing land uses, it will probably be necessary for local communities to change their existing zoning ordinances.

### *Traffic Calming in Residential Neighborhoods*

Recently, there has been a greater interest in the study and implementation of traffic calming measures in the Pioneer Valley. Several communities, including Easthampton, Springfield, and Northampton, have implemented education and enforcement efforts that include enhanced police enforcement and speed displays. Several communities are also reviewing changes to roadway design that slow vehicles. In 1999 Wilbraham installed chokers at an intersection in the town center, and Amherst moved the painted edge lines of several roads to reduce travel lane width. Other design alternatives include chicanes, traffic circles, speed humps, and raised crosswalks.

For many communities, traffic calming represents a change in the way transportation systems are evaluated. Planners and engineers must balance traditional performance measures of speed, capacity and traffic safety with the need to reduce noise, reduce truck traffic, and provide a safer environment for pedestrians and children.

In 1999 the Pioneer Valley Planning Commission, FHWA and MassHighway hosted an FHWA Pedestrian Road show “Train the Trainers” technology transfer training program that allowed public works officials and planners in New England to learn current practices for improving the pedestrian environment. This three-day workshop included presentations by engineering experts in field the field of traffic calming, and a site visit to neighborhoods in Springfield where pedestrian/traffic issues had been identified. The implementation section of this plan includes additional action items that directly address the growing issue of traffic as it relates to safety in the pedestrian and bicycle environment.

***Institute of Transportation Engineers’ definition: “Traffic calming is combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior and improve conditions for non-motorized street users” ITE Journal, Vol. 67, July 1997, pp. 22-24.***

-- Complete the Streets

Our streets and major roads represent an existing network that can fully accommodate bikes and pedestrians if appropriate measures are taken to accommodate the needs of bicyclists and walkers. This is possible if actions are taken to retrofit the existing infrastructure in such a way that it is more friendly to all types of travel modes, where appropriate, including bicyclists and pedestrians. This can be accomplished through widening sidewalks, narrowing streets or dedicating a continuous network of shoulder space to bicycle traffic. There is an increased interest in planning for this style of bicycle and pedestrian transit within progressive governments. For example, the City of Boulder has been very successful in meeting the needs of cyclists and pedestrians through this approach and has executed plans under the assumption that major routes need to serve non-motorized traffic as well as they serve car traffic. These efforts are intended to be concurrent with efforts to acquire rights-of-way along railways, utility lines and water ways..

Pedestrian transit can be improved by including pedestrian refuges in the form of islands and enhanced crossings. *Planning* magazine recommended that communities identify suitable arterials that can be retrofitted for multi-modal transportation and link them up with bikeways, pave shoulders of rural roads and include easements to link the ends of cul-de-sacs. In some communities, these efforts to include bicycles in the flow of traffic have resulted in increased use of designated bike lanes.

# Accomplishments, Strategies and Actions Changes to Policies, Regulations and Practices

Bicycling and walking in the Pioneer Valley can be enhanced through policy and program changes including engineering, education, enforcement, and encouragement efforts. The actions described below are designed to change either the physical or the policy environment for pedestrians and bicyclists in the Pioneer Valley or to directly affect the behavior of pedestrians, bicyclists, and motorists.

## ***Accomplishments since Original Bicycle & Pedestrian Plan***

*Accomplishment #1:* Recruit and add two new bicyclist and pedestrian experts to the Pioneer Valley's Joint Transportation Committee. In 2000 two committee members were added to the JTC. They have been tasked with securing resources for the implementation of this plan.

- Evaluate according to effectiveness of their contributions—that is, are their suggestions integrated into work of the JTC?, and the ongoing appointment of representatives to serve in this capacity.

*Accomplishment #2:* Re-activate the non-motorized transportation committee and charge them with oversight of implementation of the plan. In 2000 the non-motorized transportation committee was reactivated and has accomplished developing programs that promote bicycling and pedestrian transportation within the region. Examples of this include: the regional bike map, public service announcements and brochures for a share the road campaign, the installation of bike lockers and share the road signs.

- Evaluate according to the extent to which this plan is implemented

*Accomplishment #3:* Secure funding from MassHighway and other funding sources to build new pedestrian facilities.

- Connecticut River Walk segments have been built in Agawam and Springfield; the Norwottuck is being expanded into its future Damon Road location; and the Manhan is approaching a linkage with Northampton. Additionally, bike lanes have been installed in Amherst.
- Evaluate according to the number of projects funded each year versus the number of communities that request funds.
- Are communities receiving enough assistance to meet local demand for pedestrian and bicycle facilities?

*Accomplishment #4:* Working with the Pioneer Valley Transit Authority and others to install long term parking facilities at park-and-ride lots, provide short-term parking on local transit routes, and install bicycle transport racks on transit coaches.

- The installation of bike lockers at Sheldon Field
- Rack n' Roll bike racks on PVTA buses

*Accomplishment #5—*At least two communities will work with PVPC and the JTC to improve pavement markings, lighting, and signs at pedestrian crosswalks and intersections.

- The Town of Amherst and the city of Northampton made significant improvement on major routes in their communities.

*Accomplishment #6*—PVPC will work with the JTC to institutionalize a process to notify bicycling and pedestrian organizations in the respective MassHighway Districts of public hearings on transportation projects that could include bicyclist and pedestrian accommodations. This effort will include notification to elected officials of project advertisement and contract awards for transportation projects.

- Informal monitoring by PVPC staff has addressed this item.
- MassHighway modified its processes and now prioritizes accommodation of bicyclist and pedestrian needs in all road development projects. MassHighway has also recently named a Bicycle and Pedestrian Contact at each of its District Offices.

## **Strategies**

### *Strategy 1: Engineering / Infrastructure*

The physical environment directly affects the decision to walk or ride a bicycle. If people believe that there is a safe place for them to go, they are much more likely to walk or ride their bikes. In the Pioneer Valley, there are many governmental and non-governmental entities that can contribute to making the environment more comfortable for bicyclists and pedestrians. In order to assess the 2006 Plan Update, we examined Action Items from the original plan and removed those that either had already been completed or were not enthusiastically embraced in the first round of the Bike Ped Plan. See Appendix for a detailed description of removed items.

#### ***Actions: Regional Responsibilities***

Action 1—The Pioneer Valley Planning Commission will systematically identify and assess roadway conditions throughout the region and create a database of road characteristics that affect bicyclists' comfort level. The database will include (but will not be limited to) width, shoulder width, average daily traffic (ADT), and speed, and be designed to identify and document the need for, and appropriate kind of, pedestrian and bicycle facility improvements for all roadways in the Pioneer Valley. (This effort may coincide with regional and local pavement management efforts, to maximize use of limited regional planning agency staff.) PVPC will update and expand the Pioneer Valley Regional Bikeway Map by classifying roadways based on the shoulder width specification defined in MassHighway Directive E-98-003 (5/5/98). Distribute pamphlets and brochures to local DPWs that describe best practices for maintaining and building sidewalks, bike lanes and shared use trails.

Action 2—PVPC will work with affected communities to secure financing from MassHighway and alternate funding sources, and to build new facilities, based on the list of projects and needs identified in the Appendix of this plan.

#### ***Actions that Require Ongoing Effort***

Action 3—Encourage at least two communities to complete a sidewalk survey. PVPC will offer technical assistance as needed, especially to those communities that indicated an interest in completing surveys in their community development plans.

#### ***Local Impact Pilot Programs***

While it is clear that the regional planning agency has an important role to play in encouraging walking and biking in the Pioneer Valley, it is ultimately up to city and town governments to create a friendly environment for residents to walk and bike. For this reason, there are a number of actions proposed which local government can only implement. PVPC will support these efforts.

### *Strategy 2: Engineering/Policy Strategies*

It is not enough to create a physical environment that encourages bicycling and walking. Because the physical environment is constantly changing, it is necessary to assure ongoing support for

and encouragement of walking and bicycling as reasonable transportation options by creating and influencing public policy. It is especially important to establish pedestrian and bicycle-friendly public policy that governs engineering activities in the Valley, including the planning, design, construction, and maintenance of public roadways and transportation projects.

**Action 4**—PVPC will recruit and add two new members with bicycling and pedestrian expertise to the Pioneer Valley’s Joint Transportation Committee (JTC).

- Action Accomplished

**Action 5**—PVPC will reactivate the non-motorized transportation committee and charge them with oversight of implementation of this plan.

- Action Accomplished

**Action 6**—PVPC will work with the JTC to institutionalize a process to notify bicycling and pedestrian organizations in the respective MassHighway Districts of public hearings on transportation projects that could include bicyclist and pedestrian accommodations. This effort will include notification to elected officials of project advertisement and contract awards for transportation projects.

Informal monitoring by PVPC staff has addressed this item, and close collaboration between PVPC bike coordinators and local bike advocacy organizations assists the process.

**Action 7**—At least two area communities will incorporate traffic calming measures into neighborhood streets that reduce the risk of automobile injury to pedestrian and bicyclists. These measures may include the use of chokers, chicanes, traffic circles, speed humps, edge lines, and raised crosswalks. This effort will be synthesized with an emerging movement, known as Complete the Streets, to accommodate all uses on roadways. See appendix for an overview of the Complete the Streets program.

**Action 8**—Refine efforts to work with the Executive Office of Transportation, Rails-to-Trails Conservancy, local Rail Trail Groups and other concerned groups to respond quickly enable efforts to purchase newly available corridors for future shared use trails.

**Action 9**—Identify bus stops that can be relocated closer to bicycle and pedestrian facilities (bike lanes, suitable sidewalks, multi-user trails) and begin the process of realigning these stops so that public transportation and non-motorized transportation are tightly interwoven.

**Action 10**—Post directional signs at public transportation facilities that direct bicyclists and pedestrians to facilities that meet their transportation needs.

**Action 11**—Develop a Safe Routes to School Program for target areas and seek federal funding.

### *Strategy 3: Land Use Planning—Zoning and Development*

Zoning ordinances and bylaws are specific forms of public policy that can be used by local governments to support walking and bicycling. The following actions deal specifically with recommended bylaws that can be implemented at the municipal level. PVPC will support local efforts to implement these actions.

**Action 12**—PVPC and the JTC will work with at least two area communities to adopt sidewalk maintenance bylaws (model bylaws are available from PVPC, [www.pvpc.org](http://www.pvpc.org)) and work to maintain existing roadways with the knowledge that the lack of maintenance is an obstacle for bicyclists and pedestrians.

**Action 13**—At least one municipality will adopt mandatory sidewalk bylaws for new residential and commercial developments.

**Action 14**—At least one municipality will adopt inclusion of bicycle parking as part of local parking ordinances.

**Action 15**—At least one community will encourage land use development patterns (as described in current land use section of this plan) that allow residents the opportunity to walk and bicycle as a means of travel and recreation.

#### *Strategy 4: Education*

**Action 16**—At least two communities will host the “Pedestrian Road Show,” the FHWA comprehensive community-based pedestrian accessibility program.

**Action 17**—At least five local planners (paid and/or volunteer) and public works officials will be trained in bicycle traffic safety through an educational program comparable to advanced driver’s education for bicyclists.

**Action 18**—At least two workshops on transportation related issues, including the design of bicycle and pedestrian facilities, will be held in area communities. (The federally funded Local Technical Assistance Program, Baystate Roads, is one such resource.)

The vast majority of motor vehicle crashes are the result of human error. Comprehensive education programs are necessary to ensure safe use of transportation facilities. It is especially difficult to design transportation facilities for pedestrians and bicyclists because user skills vary so greatly. Unlike people who drive cars, there is no licensing procedure to assure a minimal level of competency when people walk and ride their bicycles. Children and adults have very different abilities and needs. The following actions can enhance safety of bicyclists and pedestrians while encouraging people to walk and ride their bikes. PVPC will support these efforts.

**Action 19**—Interested citizens, MassBike, area colleges and the University of Massachusetts and local transportation advocacy groups, such as the Northampton Transportation Committee and Springfield Walks, will launch a valley-wide public information and education effort designed to: 1) educate motorists about their responsibilities to share the road with bicyclists and their obligations to yield to pedestrians in crosswalks, and 2) educate bicyclists and pedestrians about their responsibilities when interacting with motor vehicles.

#### *Strategy 6: Encouragement*

Though often overlooked, encouragement is at the heart of any community’s successful efforts to

make walking and bicycling viable means of transportation. PVPC, local governments, colleges and universities, businesses, and key community leaders must cooperate to make bicycling and walking viable transportation modes.

**Action 20**—PVPC will work with the non-motorized transportation committee and interested communities, employers and educational institutions to organize a regional “Bike, Bus, or Walk to School/Work Day” to coincide with “National Bike to Work Day” in 2006. The simple fact that “Bike to Work Day” oftentimes coincides with Spring Term Finals at many of the area’s colleges and universities might require the selection of a date tailored to suit the needs of the region. PVPC will draw upon the expertise and resources of the MassRIDES program in preparing and presenting this anticipated event.

**Action 21**—PVPC will work with at least three area employers and educational institutions to create incentive programs to encourage employees and students to bike or walk to work or school in the year 2006. (this activity may include Bike to Work Week activities)

**Action 22**—Work with regional and local tourism boards and Chambers of Commerce to promote the Pioneer Valley as a destination for people interested walking and bicycling vacations.

**Action 23**—PVPC will assure implementation of this Regional Bicycle and Pedestrian Transportation Plan via the work of the non-motorized sub-committee of the Joint Transportation Committee.

**Action 24**—Using the recently completed bike plan as starting point, locate wayfinding maps in high usage areas that can help pedestrians and cyclists plan routes along bicycle and pedestrian friendly ways, especially in underused facilities adjacent to large populations of potential users, the Connecticut RiverWalk and Bikeway in Springfield, for example, with its great proximity to dense urban populations.

## **Proposed Road, Sidewalk and Multi-use Trail Projects**

Creating a network of safe roads, sidewalks and shared use paths has been a central goal of this plan. The concept that you can bicycle “from here to just about anywhere” has universal appeal and certainly residents want to be able to walk to their favorite destinations. The accompanying table currently identifies 15 proposed bikepaths or shared use trails, 10 bike and pedestrian projects in the design phase and a total of proposed\* 98 miles of road and bridge improvements.

All of these projects are significant in achieving the goals of this plan. Nineteen projects have secured necessary funding to complete engineering or acquire rights of way, and sections of the Connecticut River Walk are open in Agawam and Springfield. Efforts to connect existing paths with population centers, such as the UMass -Norwottuck Connector, have been successfully completed, resulting in a more continuous bicycling and walking experience. Many of the remaining on-road and sidewalk improvements will be incorporated into larger roadway construction projects in the future. Other projects may face continued delays as competition and funding shortages continue.

### ***Proposed Projects***

The following table identifies projects submitted to the Pioneer Valley Planning Commission by local officials, citizen groups, and local bicycling organizations, including members of the Northeast Sport Cyclists, the Springfield Cyclonauts, the Pioneer Valley Chapter of MassBike, and the Franklin/Hampshire Freewheelers.

### ***Estimating Demand for Bicycle Trips***

In 1999 PVPC began using a “Bicycle Demand Sketch Model” to identify areas of the region with a high potential for bicycle trips. This Model, a classic geographic gravity model, measures the relative amount of bicycle travel that would occur if there were no bicycle impediments. It uses demographic data to quantify the proximity and magnitude of bicycle destinations along a road segment. The corresponding demand values from the model are calculated and mapped using a geographic information system (GIS). In the future, this model may assist planners in prioritizing projects and identifying corridors of critical concern.

The premise for the Model is that short trips are more likely than long trips and that more trips are likely to occur in areas where destinations are clustered near where people live, such as town centers, central business districts, and mixed-use developments. The two building blocks of the model are the travel characteristics of the population and the type and quantity of a destination.

Using geographical information systems (GIS) 913 census block groups were used along with their corresponding populations to identify trip generation based upon the proximity, frequency and magnitude of adjacent bicycle trip generators and/or attractions. A trip generation factor of 3.86 trips per day (NPTS) was used to estimate total potential trip generation in a 1/4 square mile

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\* This category includes Proposed projects, projects in Design stages and projects Under Construction, all projects that have not physically carried a bicyclist or walker for transportation purposes.

area. 3000 destinations were identified and their corresponding locations were mapped. A “bicycle demand value” was calculated for each of the four trip types. These values were added to create a “Bicycle Trip Generation Value” that was assigned to the 1/4 square mile. These values were mapped using GIS.  
(See Figure 6, pg 41)

The model and the represented projects are largely limited to more densely populated areas of the region. Localized demand for bicycle trips in less populated areas are not reflected in the regional model. However, communities interested in assessing demand at the local level can apply the same methodology of identifying bicycle destinations population centers and travel distances to estimate the demand for bicycle trips.

### ***Implementation/Evaluation***

Too often plans are developed and then are not implemented. This plan, however, will be put into action. To that end, the following table reiterates each of the action steps described in the plan, identifies who is primarily responsible for implementation of each action item, and suggests a target date by which each item should be completed. The table also identifies evaluation criteria and questions that can be used to determine if the action item was actually implemented.

The non-motorized subcommittee of the Joint Transportation Committee is charged with the responsibility of overseeing implementation of this plan. The Joint Transportation Committee is a representative group of the 43 communities in the Pioneer Valley. In 2006, the Pioneer Valley Planning Commission will be developing the region’s three-year Regional Transportation Plan (RTP). It will be particularly important to assure that the contents of this plan are included in that product as the RTP dictates use of transportation funds in the region for the next three years. None of these ideas can be implemented without funding.

While we do identify the non-motorized subcommittee of the JTC as the entity responsible for assuring implementation of this plan, every resident of the Pioneer Valley has an opportunity to take action.

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- Construction and Traffic Standard Details 1996 (Metric)
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- Building Better Bicycling: A Manual for Improving Community Bicycling Conditions. 1999 (out of print)

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Commonwealth of Massachusetts: [www.mass.gov](http://www.mass.gov)

MassHighway : [www.mhd.state.ma.us](http://www.mhd.state.ma.us)

U.S. Department of Transportation: [www.dot.gov](http://www.dot.gov)

Federal Highway Administration (FHWA):

[www.fhwa.dot.gov](http://www.fhwa.dot.gov)

[www.fhwa.dot.gov/hep10/biped/biped.html](http://www.fhwa.dot.gov/hep10/biped/biped.html)

U.S. Department of Transportation Pedestrian and Bicycling Information Clearinghouse (PBIC):

[www.bicyclinginfo.org](http://www.bicyclinginfo.org); [www.walkinginfo.org](http://www.walkinginfo.org);

Federal Transit Administration (FTA): [www.fta.dot.gov](http://www.fta.dot.gov)

National Highway Traffic Safety Administration (NHTSA):

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The Rails to Trails Conservancy: [www.railtrails.org](http://www.railtrails.org)

Millennium Trails; <http://www.millenniumtrails.org/>

National Center for Bicycling and Walking: <http://www.bikewalk.org/>

Surface Transportation Policy Project: <http://www.transact.org/>

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Oregon Dept. of Transportation Bicycle and Ped. Program:

[www.odot.state.or.us/techserv/bikewalk/index](http://www.odot.state.or.us/techserv/bikewalk/index)

FHWA Turner-Fairbank Highway Research Center; <http://www.tfhrc.gov/>

# Appendix A

## *Potential Funding Assistance For Bicycle and Pedestrian Facilities*

The following is an outline of potential federal and state funding sources for bicycle and pedestrian activities. They are presented by activity and eligible source of funding and are followed by a description of each funding source.

*Sources marked with an asterisk (i.e. STP\*) are part of the Transportation Equity Act for the 21<sup>st</sup> Century (TEA-21) of 1997. Only bicycle and pedestrian facilities principally used for transportation rather than recreation purposes are eligible for TEA-21 funds.*

According to the Metropolitan Planning regulations, projects seeking state or federal funding must be included in the Regional Transportation Plan (RTP) and the Transportation Improvement Program (TIP) to be considered for funding.

<b>Activity Assistance</b>	<b>Source of Funding</b>
Brochures related to safe bicycle use	STP*, CMAQ*, NHTSA /GHSB funds
Construction	NHS*, CMAQ*, STP*, STP/E*, DCS-Urban Self Help, L&WCF
Easement acquisition	DCS - Urban Self Help, L&WCF
Land acquisition STP/E*	DCS - Urban Self Help, L&WCF,
Planning or design	DCS - Self Help, DEM Greenways
Public service announcements related to safe bicycle use	STP*, CMAQ, NHTSA/GHSB*
Route maps related to safe bicycle use	STP*, CMAQ*
Transit access and other facilities (lockers and racks)	Federal Transit Section 5309*

Description of Federal Funding Sources and Other Areas of Assistance:

**Congestion Mitigation and Air Quality (CMAQ)\* Program Funds** - “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.”

**Section 5307 Transit Funds** - The funds are channeled through the regional transit agencies and are used for capital expenditures. Transit authorities can work with their member communities to develop pedestrian and bicycle friendly transit stops or add bicycle racks to buses.

**Department of Conservation and Recreation (DCR)** - has the ability to acquire abandoned rights-of-way.

**DCR Greenways Program (DEM Greenways)** - has a grants program for the planning and development of trails. The project amounts range from \$5-\$10,000

**Division of Conservation Services Self Help Program (DCS - Self Help)** - reimburses up to 70% of the total project cost for the acquisition of land for conservation and passive recreation purposes.

**Division of Conservation Services, Urban Self Help (DCS - Urban Self Help) Program** - reimburses up to 70% of allowable costs towards the acquisition of land, undertaking of new construction or rehabilitation of land for park or outdoor recreation purposes.

**Federal Lands Highway Funds** - “may be used to construct pedestrian walkways and bicycle facilities in conjunction with roads, highways and parkways at the discretion of the department charged with administration of such funds.”

**Federal Land and Water Conservation Fund (L&WCF)** - reimburses projects up to 50% of the total project cost,

up to \$150,000 for the acquisition, development or renovation of park, recreation and conservation areas.

**Federal Transit Title III, Section 25\* Funds** - “allows transit funds to be used for bicycle and pedestrian access to transit facilities, to provide shelters and parking facilities in or around transit facilities, or to install racks or other equipment for transporting bicycles on transit vehicles.”

**Governor’s Highway Safety Bureau (GHSB) Funds** - (Federal NHTSA Section 402) “can be used for small scale physical improvements and bicycle safety programs.”

**MassHighway Department (MHD)\*** - can fund projects designed primarily for transportation. Priority is given to projects that have engineering design completed and all permits acquired by the impacted community(s).

**Scenic Byways Program Funds- (Administered through MassHighway)** may be used for planning activities and promotion of tourism on designated routes.

**National Highway System (NHS)\* Funds** - “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).”

**National Park Service (NPS) Rivers and Trails Assistance Program** - provides staff services to groups for organization building, education, planning and technical assistance. There are no direct funds available. (do you want to cite the example of the Springfield Walks program?)

**National Recreational Trails Funds (NRTF)\*** - may be used to create trails for use by motorized and/or non-motorized users. Funds under this category are very limited. (administered by DCR)

**Surface Transportation Program (STP)\* Funds** - “ 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.”

**Transportation Enhancements (STP/E)\* Funds** - may be used for “provision of facilities for bicyclists and pedestrians” and “preservation of abandon railway corridors (including the conversion and use thereof for pedestrian or bicycle trails).”

## *B2 Local Funding Sources*

**Bicycle Registration Fees** - Communities can establish a bicycle registration program which charges a fee for each bicycle registered. The revenue from the fees can be earmarked for bicycle-related projects and services.

**Sidewalk Accounts** - Communities can obtain funding for sidewalks using municipal bonds, or special accounts established to hold contributions from developers of new developments. Rather than requiring sidewalks in places that may not need them, a developer can be asked to donate what would have been spent to the special municipal account for sidewalks. The community can then use the funds for sidewalks where they are needed.

**Environmental Impact Review Measures** - Localities can ask project proponents whose projects have environmental impacts to consider bicycle and pedestrian improvements as mitigation measures.

**Local Support through Volunteers, Schools, Business Groups** - Although not a funding source, volunteerism is one of the greatest resources available to cities and town. There are civic clubs, schools, police departments, bike shops, bike accessory manufacturers, medical professionals, youth groups, service organizations, bicycling clubs, and business groups who are willing to take on projects to improve community public space or assist in injury prevention programs. Success in bringing volunteers together is witnessed through adopt a trail groups, local bicycle advisory committees, and bicycle safety programs. (Resource: Community Bike Safety Idea Bank, MA Department of Public Health, Western MA Safe Kids, Kawanis Pediatric Trauma Institute (Guide to Bicycle Rodeos)

**Baystate Roads Program** - Not a funding source but a resource, The Baystate Roads Program provides public works and engineering staff of local governments and municipalities with information and training on current design practices, and technologies for managing public investments in local roads, bridges, sidewalks, and structures. The Baystate Roads Workshops are provided through a cooperative effort of the Federal Highway Administration, MassHighway, and the University of Massachusetts. (Baystate Roads Program 413-545-5403) Examples include

the 2005 Massachusetts Statewide Bicycle-Pedestrian Conference..

*B3 Other State Funding Programs*

**Community Development Block Grants (CDBG)** - The Executive Office of Communities and Development (EOCD) awards CDBG funds that are appropriated by the federal government. Communities must apply for the grant. The CDBG funds can be used for many different projects and can be used as incentives to property owners and developers if approved by the municipality.

**Municipal Incentive Grants** - The Commonwealth of Massachusetts Executive Office of Communities and Development offers grants to communities for planning projects.

**Public Works Economic Development Program Grants (PWED)** - The State established this fund for assistance to communities in the design and construction/reconstruction of roadways, sidewalks, lighting systems, bridges, traffic control and service facilities, drainage systems, and other transportation related projects deemed by a municipality to be necessary for economic development. Municipalities must petition the Executive Office of Transportation (EOT) which reviews projects according to set criteria.

## Appendix B: Pioneer Valley Alternative Mode commuters sorted by Bicycle to Work

Community	Total Commuters	Bicycle to Work	Walk to Work
Amherst	16,896	1.79%	25.84%
Northampton	15,302	1.35%	14.30%
Hadley	2,384	1.01%	1.34%
Pelham	736	0.95%	0.68%
Easthampton	8,574	0.63%	2.80%
Palmer	6,145	0.57%	3.84%
Westfield	19,151	0.40%	3.96%
Goshen	509	0.39%	1.57%
Williamsburg	1,286	0.39%	2.26%
Chicopee	25,089	0.33%	2.79%
Hatfield	1,828	0.33%	1.53%
Blandford	641	0.31%	0.62%
South Hadley	8,635	0.27%	11.62%
Granville	765	0.26%	2.09%
Wilbraham	6,014	0.18%	0.81%
Holyoke	14,207	0.18%	4.86%
Longmeadow	7,101	0.14%	1.46%
Springfield	57,812	0.13%	4.24%
Monson	4,006	0.12%	2.17%
Huntington	1,149	0.09%	2.09%
West Springfield	13,247	0.08%	2.45%
Belchertown	6,998	0.07%	1.29%
Agawam	14,355	0.05%	0.97%
East Longmeadow	6,650	0.05%	1.20%
Worthington	578	0.00%	1.21%
Westhampton	809	0.00%	0.99%
Ware	4,767	0.00%	2.52%
Wales	910	0.00%	0.88%
Tolland	214	0.00%	0.93%
Southwick	4,435	0.00%	2.50%
Southampton	2,894	0.00%	0.86%
Russell	851	0.00%	0.71%
Plainfield	244	0.00%	4.10%
Montgomery	352	0.00%	0.00%
Middlefield	269	0.00%	0.00%
Ludlow	9,866	0.00%	1.75%
Holland	1,279	0.00%	0.31%
Hampden	2,551	0.00%	0.43%
Granby	3,140	0.00%	1.05%
Cummington	407	0.00%	1.23%
Chesterfield	654	0.00%	2.45%
Chester	643	0.00%	3.42%
Brimfield	1,589	0.00%	1.07%
Pioneer Valley	275,932	0.36%	5.16%
Data Set: Census 2000			

## Appendix C: Alternative Mode Commuters sorted by Walking to Work

Community	Total Commuters	Bicycle to Work	Walk to Work
Amherst	16,896	1.79%	25.84%
Northampton	15,302	1.35%	14.30%
South Hadley	8,635	0.27%	11.62%
Holyoke	14,207	0.18%	4.86%
Springfield	57,812	0.13%	4.24%
Plainfield	244	0.00%	4.10%
Westfield	19,151	0.40%	3.96%
Palmer	6,145	0.57%	3.84%
Chester	643	0.00%	3.42%
Easthampton	8,574	0.63%	2.80%
Chicopee	25,089	0.33%	2.79%
Ware	4,767	0.00%	2.52%
Southwick	4,435	0.00%	2.50%
West Springfield	13,247	0.08%	2.45%
Chesterfield	654	0.00%	2.45%
Williamsburg	1,286	0.39%	2.26%
Monson	4,006	0.12%	2.17%
Granville	765	0.26%	2.09%
Huntington	1,149	0.09%	2.09%
Ludlow	9,866	0.00%	1.75%
Goshen	509	0.39%	1.57%
Hatfield	1,828	0.33%	1.53%
Longmeadow	7,101	0.14%	1.46%
Hadley	2,384	1.01%	1.34%
Belchertown	6,998	0.07%	1.29%
Cummington	407	0.00%	1.23%
Worthington	578	0.00%	1.21%
East Longmeadow	6,650	0.05%	1.20%
Brimfield	1,589	0.00%	1.07%
Granby	3,140	0.00%	1.05%
Westhampton	809	0.00%	0.99%
Agawam	14,355	0.05%	0.97%
Tolland	214	0.00%	0.93%
Wales	910	0.00%	0.88%
Southampton	2,894	0.00%	0.86%
Wilbraham	6,014	0.18%	0.81%
Russell	851	0.00%	0.71%
Pelham	736	0.95%	0.68%
Blandford	641	0.31%	0.62%
Hampden	2,551	0.00%	0.43%
Holland	1,279	0.00%	0.31%
Montgomery	352	0.00%	0.00%
Middlefield	269	0.00%	0.00%
Pioneer Valley	275,932	0.36%	5.16%
Data Set: Census 2000			

