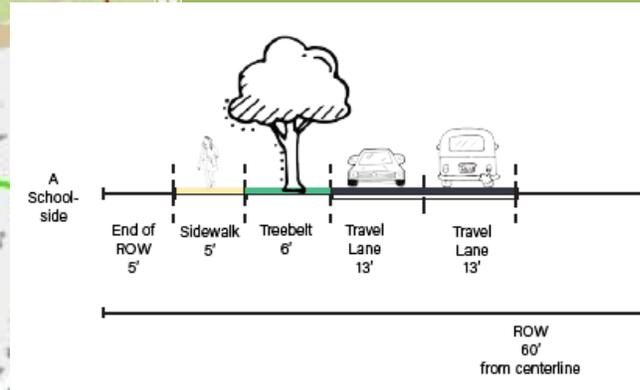


2018

Pelham Walking, Biking & Traffic Calming Plan



Pelham Walking, Biking and Traffic Calming Plan

Prepared For

The Town of Pelham in consultation with the Pelham Planning Board

Prepared By

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1. Introduction

The Town of Pelham has been engaged in planning and re-zoning to encourage the development of a village center in West Pelham for many years. The West Pelham village center is intended to be an active, mixed use, walkable area and the hub of activity for the Town of Pelham. This Plan presents a review of existing road conditions with regard to their ability to safely and comfortably accommodate people on foot and on bikes. As speed of automobile and truck traffic in the West Pelham village center is of particular concern by town residents, this plan also includes a vision for the build-out of pedestrian infrastructure and traffic calming treatments in the village of West Pelham and its approaches. This report identifies opportunities for implementation of the plan via private development and public investment including potential funding sources.

This document is organized into four main sections:

1. Review of existing conditions and past reports – PVPC reviewed the existing street network as it relates to bicycle and pedestrian use. PVPC also reviewed existing studies, reports including the 2010 Pelham Village Center Report (2010), the Pelham Housing Needs Assessment (2014), the Land Inventory and Assessment for Future Housing Development (2017), the Pelham Municipal Vulnerability Study and Needs Assessment report (2018), and the Pelham Zoning Bylaws including a new Village Center Districts regulation (2018).
2. Assessment of the West Pelham Village Center and surrounding area for suitability for bicycle and pedestrian improvements and traffic calming.
3. Vision for the long-term build out of pedestrian infrastructure and traffic calming in West Pelham Village Center
4. Information and resources regarding speed zones, bike and pedestrian infrastructure, and potential funding sources for further design and implementation of proposed plans

The findings of this report were developed in part using GIS (map-based) analysis. GIS is an effective tool for capturing an overview of general conditions for bicycling and walking in the town. GIS analysis was supplemented by a site tour of Pelham and virtual reconnaissance using

Google Street View and MassGIS parcel information. Other information was gathered from past planning and outreach efforts including the plans and studies mentioned above, as well as the *Urban, Rural and Suburban Complete Streets Design Manual for the City of Northampton and Hampshire County* (Alta Planning & Design, 2017).

Vision Statement

In the adopted (2018) zoning amendments, the Village Center Districts Regulations include the following statement of intent, which may also serve as a vision for the development of bicycle and pedestrian facilities in the village center:

Development within the Village Center Districts should provide commercial, civic, residential uses and public open space within easy, safe walking distance of each other. Vehicular circulation should be safe and well organized, with the use and visual impact of cars minimized. There should be tree-lined streets, sidewalks or paths for pedestrians, well-designed architecture, and public spaces. Property developers are encouraged to provide amenities such as protected open space, high-quality landscaping, street furniture, public spaces, and greater integration of mixed uses.

2. Public Input and Review of Past Plans

The Pelham Walking, Biking and Traffic Calming Plan was developed by staff of the Pioneer Valley Planning Commission (PVPC) with review and input by members of the Pelham Planning Board. The Planning Board provided guidance on the scope of this project with regard to the vision for the village center and bicycle and pedestrian infrastructure on roadways throughout the town. Public input was gathered on the Village Center Conceptual Plans and a map of potential biking and walking routes at a Public Forum on November 28, 2018 and through comments made on the Conceptual Plans that were on display at the Pelham Library for two weeks before the Public Forum. A review of planning studies and recent zoning studies also informed the development of this report.

Review of Town Plans and Reports

The Town of Pelham began focusing on the Village of West Pelham in conjunction with the Pioneer Valley Planning Commission (PVPC) in a study that resulted in the 2010 Pelham Village Center Report. A Housing Needs Assessment followed (in 2014), and subsequently the 2017 Land Inventory and Assessment (Dodson & Flinker) to determine the most suitable areas for increased housing density within the town and particularly in the village of West Pelham. The Land Inventory provides a useful analysis of development constraints and areas with the greatest potential for development within the village center. Most recently, the Town has adopted amendments to their Zoning regulations (2018) that incorporate new Village Center Districts for the Village of West Pelham. The town also completed a Community Resilience Building Workshop which names the “town campus,” a grouping of buildings in West Pelham that includes the school, library and public safety complex as an emergency shelter. Details of these reports as they have informed this Plan and are summarized below.

Pelham Village Center Report (2010)

In 2010, a Pelham Village Centers Subcommittee completed a report to summarize the process of identifying West Pelham as the area with the greatest potential for a vibrant village center. The Pelham Elementary School, Pelham Public Library, Community Center and Public Safety Building are all located on Amherst Road at the intersection of North and South Valley Roads. The report notes that housing in this area is more dense than in any other part of town, and the proximity to Amherst makes it a good location for additional development. North Valley Road is used by commuters from Shutesbury and Wendell on their way to Amherst and other employment hubs in the Pioneer Valley. The report recommends that

the boundary of a potential village center begin at the Amherst town line and extend up Amherst Road east to Arnold Road. It suggests that Amethyst Brook and Buffam Brook serve as natural boundaries to the north, and that the village extend along South Jones Road to South Valley Road.

The Village Center Report notes that “walking from the Pelham library to the Amherst town line (where the sidewalk begins) is not a positive experience. In fact, it is a risk to life and limb... A good sidewalk, beginning at the town line on Amherst Road and running uphill to the school would do much to alleviate this.”¹

The report also comments on the high speed of traffic on Amherst Road and the presence of truck traffic. It notes the potential of defining Amherst Road in West Pelham as “Thickly Settled” in order to decrease the speed limit to 30 mph. The study recommends exploring and implementing the process of designating the area as Thickly Settled. It notes that Amherst Road was a “county road” but was unsure of whether the road jurisdiction was transferred to the town.

Housing Needs Study (2014)

The main finding of the 2014 Housing Needs Assessment as it relates to pedestrian amenities was that the town’s population is shifting to fewer families with children, more single person households, and an aging population. “Population projections by age suggest that Pelham will continue ‘aging,’ predicting that the share of residents age 65 or older may grow to as much as 40% of all Pelham residents.” This finding, and the fact that as people age they are more likely to have ambulatory or other disabilities, supports the need for pedestrian facilities that are accessible and include benches and other supportive devices.

Pelham Land Inventory and Assessment for Future Housing Development (2017)

The Pelham Housing Committee contracted with Dodson and Flinker Landscape Architecture and Planning to conduct an analysis of land suitability for future housing in town. The study reviewed land constraints and determined land that is suitable for development of housing, particularly higher density housing in the area proposed for the village center. The study proposed zoning changes that would allow for additional housing development in the village center area. It also noted the proposed route for new sewer lines along Jones Road, South Valley, and Caldwell Street.

¹ Pelham Village Center Study Committee, Report of Findings (October 2010)

Village Center Zoning District (2018)

Following the Land Inventory and Assessment, the Pelham Planning Board worked with the Pioneer Valley Planning Commission to adopt new Village Center Zoning Districts which include Village Center Mixed Use, Village Center Neighborhood, and Village Center Rural Edge (see Figure 1).

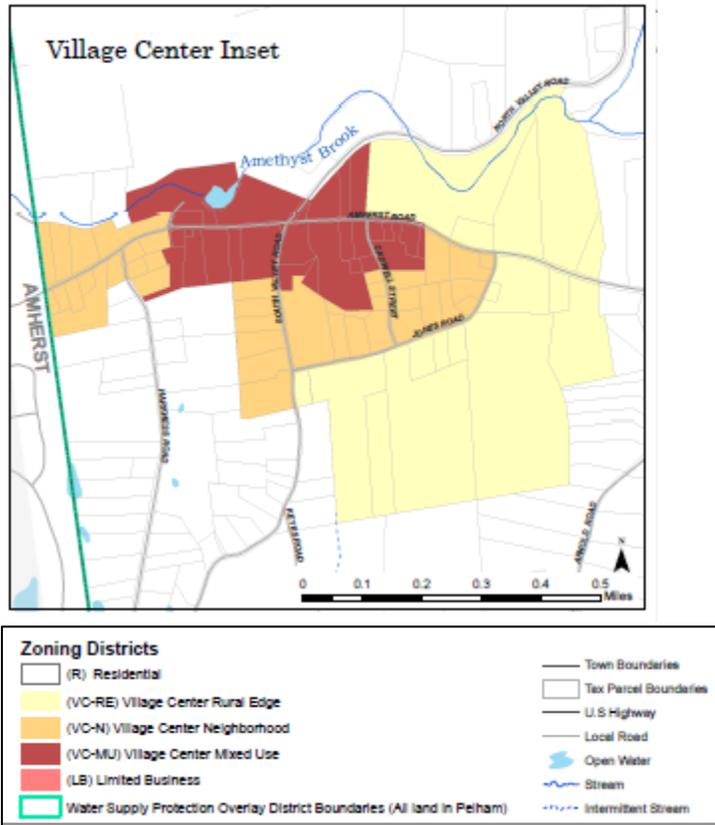


Figure 1: Pelham Village Center Zoning Districts

Within the new Village Center District regulations (adopted in 2018), are requirements for building design, parking, lighting and landscaping. The requirement for sidewalks in the Village Center Mixed Use District (section 125-8.2 H (3)) are as follow:

H. Site Design and Landscaping

(3) Sidewalks Requirements for the Village Center Mixed-Use District:

- (a) A minimum 5' wide sidewalk and/or side path shall be built along the full width of all parcels in the Village Center Mixed-Use District. Sidewalk designs shall meet or exceed any sidewalk standards adopted by the Town Highway Department. Sidewalks shall be constructed within the road right of way where possible.
- (b) A tree belt that is at least six feet wide shall be provided between a sidewalk and the street edge.

(c) Street Trees. Street trees shall be planted at regular intervals within the street right-of-way parallel to the street along all streets. When possible, street trees shall be planted in the tree belt. Street trees shall have a minimum caliper of 2.5” (measured at a height of 4.5’ from ground level) at the time of planting. Spacing of street trees shall be determined by the species chosen, with the intent that street trees will form a complete canopy upon maturity.

These requirements were used for a conceptual plan for traffic calming and sidewalks in the village center. **See Section __ below.**

Community Resilience Building Workshop (2018)

The Community Resilience Building Workshop was a planning exercise conducted by the PVPC and funded by a Municipal Vulnerability Preparedness (MVP) Planning Grant. The report from this exercise noted the potential of the “town campus” (the elementary school, Community Center and Public Safety complex) to serve as an emergency shelter for the town. It was also noted that roughly 10% of Pelham residents currently live in the area adjacent to the town campus.

Public Comment

The project team gathered public comments on the Pelham Village Center conceptual plan for traffic calming at a public forum held on November 28th, 2018. Forum Participants were also asked to comment on bike and/or walking routes throughout town on a Planning Base Map. In addition, the plans were put on display at the Pelham Public Library for two weeks prior to the public forum with a request for comments. Several comments were posted on the plan with Post-it Notes and are detailed below.

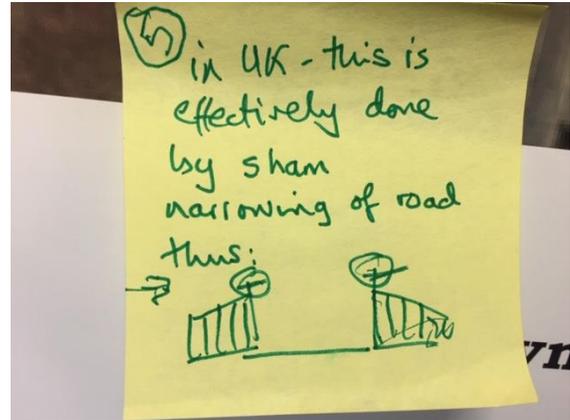
Conceptual Plan Comments – Library

- Add a sidewalk from either Enfield or meeting house to school or library
- Sidewalks from Amherst bus stops
- (regarding proposed changes to parking for mobile home park) – This will force pedestrians to walk on grass/trees or private property
- Don’t put speed table in front of house – concern about noise from traffic traveling over speed table
- Sign for “Entering Village Center” should be at town line
- “Thickly Settled” areas are 30 mph speed limits – lower speed limit to 30 mph before anything else
- Include Jones Road on map

Conceptual Plan Comments – Public Forum

- There is a house very close to Amherst Road on the north side so sidewalk on that side of the road may not work
- Biking will probably only happen on the sidewalk
- Consider truck speed and ability to stop
- Consider a light at North Valley Road
- Can the speed limits extend into Amherst by cooperating with Amherst?
- Important to have welcoming “Village Center” signs. Also warn drivers of speed tables. “Thickly Settled” is weak language.
- Sidewalk should be on same side of road as the one coming from Amherst (south side)
- Consider proper sidewalk up to the library, especially if 40B housing project is developed (west of Library and school)
- Two speed tables on each side of village, not three
- More street lights to highlight village center
- I would like to see significant speed limits reduced from before entering the village center and continuing down the hill beyond the village center – from Jones Road to Harkness Road
- I would prioritize the yellow lined sidewalks and not provide any bike lanes
- Sidewalk should be on south side of Amherst Road:
 - There is a house very close to the road on the north side, near Harkness Road
 - Amherst sidewalk is on the south side
 - There is a deep gully on the north side of the road across from Harkness road
 - Town center/school & library are on the south side
 - Crossing Amherst road is dangerous
- Traffic turning left from North Valley Road onto Amherst Road heading east will not be able to see if the curb is pushed out.

- In the UK, this (traffic calming) is done by sham narrowing of the road thus:



Map Comments – Public Forum

- Harkness Road can be accessed from South Valley which leads to Station Road bikeway. Encourage people to park in town center and bike this route
- Public trail noted on Pelham Farm and Butter Hill across from Harkness Road (??)
- Community Forest land was noted in the area between North Valley Road and Buffam Road
- A walking route was drawn up North Valley Road to a trailhead approximately ¼ mile from the intersection with Amherst Road
- A walking route was drawn from the Elementary School and Library, down South Valley Road to Harkness Road, and along Amherst Road from the town line back to the school
- Both groups drew Bike Routes on North Valley Road and up Buffam Road toward Shutesbury, on the South Valley and Harkness Road loop, and from Amherst Road south on Enfield Road into Belchertown
- It was noted on the map that the speed limit drops to 35 mph when Amherst Road becomes Pelham Road in Amherst

3. Existing Conditions Analysis

A thorough evaluation of the road system in the Town of Pelham was conducted in order to assess the suitability of the existing infrastructure to accommodate bicycle and pedestrian traffic. This chapter summarizes the existing conditions as documented in past reports and studies, public engagement, and GIS analyses produced for this plan. It is important to understand the existing features of the transportation system in order to develop appropriate recommendations to improve bicycle and pedestrian opportunities in Pelham.

As bicycle traffic will extend beyond the boundaries of West Pelham, a **Base Map** of the town road network has been provided for the purposes of discussion of a bicycle network throughout the town (see **Appendix B**). The base map shows key information for bicycle planning including traffic volumes, speed limits, trail networks, public buildings and sites of interest in town.

Overview of Pelham's Road Network

The Town of Pelham is bordered on the west side by the town of Amherst and on the east by the Quabbin Reservoir. Roads in Pelham range from low volume (Average Daily Traffic [ADT] less than 1,000) back roads to highly traveled roads (ADT of 2,000 to 7,500 on Route 202) used by commuters and through traffic. The two busiest roads that travel through the town are Amherst Road, which intersects the village of West Pelham and becomes Pelham Road at the Amherst town boundary; and State Route 202, which connects Belchertown (on the south) with Route 2 on the north, and runs parallel to the western node of the Quabbin Reservoir. On the east side of Route 202, a network of dirt roads and trails travel through state owned land surrounding the Quabbin Reservoir. These roads may be used for walking; however, bikes and dogs are prohibited from the state-owned land surrounding the Quabbin.

Traffic Speed

The speed limit on Amherst Road is 40 mph from the Amherst Town Line east to Pine Tree Circle, where it changes to 45 mph. A School Zone of a 20 mph (while flashing) is present along the length of the school property while school is in session. Speed limits on side roads are 30 mph, and the limit on state-owned Route 202 is 45 mph. Daniel Shays Highway (Route 202) has wider shoulders that are good for bicyclists; however, wider travel lanes also lead to higher actual traffic speeds.

Actual traffic speeds traveling into the village of West Pelham from both directions are higher than the posted speed limit. A blind curve and steep road traveling into the village center lead to dangerous conditions for pedestrians, especially with trucks traveling at high speeds into the intersection and school zone.

Road Width and Right-of-Way (ROW)

After conversations with Pelham’s Public Work Director, Richard Adamcek, we learned that although the Town Right-of-Way (ROW) along Amherst Road may be 60 feet in many locations, the actual area where work can occur is likely much less. Over the years, structures were built close to the roadway without consideration or enforcement of the Right-of-Way boundaries. A better measurement of a more feasible ROW along Amherst Road and other roads in the Village Center district is 40 feet. For the purposes of this report, we also looked at the actual roadway measurements using Google Earth and Street View. We have proposed roadway modifications using these measurements as well as some encroachment into land owned by the town. Any improvements that the Town decides to pursue going forward would need to include an engineering design and survey in order to determine the actual widths and boundaries of roadways and ROWs.

Bike and Pedestrian Facilities

There are no sidewalks in Pelham currently, and no bike lanes. Shoulders along Route 202 can accommodate bicycle traffic, but they are narrow in places, and there is no physical separation from automobile traffic, meaning that these facilities are likely only used by the serious and courageous bicyclist.

Roads that lead off of Amherst Road (North and South Valley Roads, and Enfield Road) have traffic counts of approximately 552 (count year 2016), and were noted as bicycle routes during the Public Forum. As these roads are steep in places, they are likely used by the more serious bicyclist. As traffic counts are low, bicycle lanes or shoulders are not likely required for safe bicycling. These roads could benefit by signs such as “Bike Route” or “Share the Road” to make drivers aware that bicyclists may be present around a corner or coming down a hill.

A sidewalk is present in Amherst along the south side of Pelham Road to the Pelham town line. Participants at the Public Forum noted that the speed limit on this section of Pelham Road is 35 mph until the road enters into Pelham, where it changes to 40 mph.

ADA Accessibility

Although there are not currently sidewalks present in the village of West Pelham, planning for sidewalks should meet Universal Design Standards. The Americans with Disabilities Act (ADA) guarantees that people with disabilities have the same opportunities as everyone else to participate in all activities. This includes accessibility to public infrastructure such as sidewalks via ramps that allow wheelchairs safe and efficient access to sidewalks and crosswalks. Wheel chair ramps must be wide enough to accommodate wheelchairs with a gentle slope that can be safely navigated by a manually powered wheelchair. There should be separate dedicated reciprocal wheel chair ramp curb cuts at each end of a crosswalk.

Roadways accommodate a variety of pedestrians who have a different physical, cognitive, and sensory abilities. Their abilities vary in agility, balance, cognition, coordination, endurance, flexibility, hearing, problem solving, and strength. Some pedestrians require more time to cross a street and pedestrians who are visually impaired may require audible and tactile cues.

The Bureau of Census data indicates that:

- Approximately 20% of all Americans have a disability, and that percentage is increasing.
- By the year 2030, one in five Americans will be 65 years or older.

Universal design principles are based on creating an environment that is usable for people of all abilities. Incorporating these principles into all aspects of sidewalk development can eliminate the barriers and create a truly functional sidewalk system.

The following notes are summarized from MassDOT [guidance](#) and are not meant to replace or used as interpretation of the regulations.

The MassDOT recommends a walking surface width not less than 5'-0". When the sidewalk is to be constructed adjacent to a curb, it is shown on the plans as 5'-6" which includes the curb width. When the sidewalk is separated from the curb by a planting strip, it is generally dimensioned separately and is at least 5'-0". An unobstructed 3'-0" path of travel, excluding curb must be maintained, past any sidewalk obstruction, including but not limited to utility poles, mail boxes, trees and open areas around them, street lights, traffic signal bases and pre-cast foundations and other signal hardware, hydrants, signs and poles.

Trail Network

Pelham has an extensive trail network throughout both conserved and private properties that make up a large portion of the town's land area.

While not a part of the road network, the locations of trailheads should be considered when planning for bicycle and pedestrian needs as there may be opportunities for connections where trail users can walk or bicycle to trailheads. Trails have been included on the Base Map (**Appendix A**) for informational purposes.

Water and Sewer Lines

Currently the village of West Pelham is served by public water, and partially by public sewer. Water lines are located along Amherst Road, Harkness Road, Jones Road, and South Valley Road. A sewer extension from the Town of Amherst serves properties on Amherst Road and Harkness Road and is proposed for extension on Jones Road, South Valley Road, and Caldwell Road. Although the school, library and police station may hook into the sewer line, they are currently using an on-site septic system with a leach field located on the north side of Amherst Road between the school and the road. The location of water and sewer lines may be a consideration in the design and placement of sidewalks as any maintenance or problems with the water or sewer lines would involve removal and reconstruction of the sidewalk.

Existing Conditions Conclusion

The analysis of existing conditions shows that:

- The Town of Pelham has been planning for a more active village center with mixed use and higher density housing development. In the village center area, sidewalks and traffic calming measures are needed to create a safe and welcoming environment for pedestrians.
- New Village Center Zoning in West Pelham creates the opportunity for denser housing development in the Village Center. While current traffic volumes are low, additional housing development will create more automobile and pedestrian traffic. Sidewalks on roads in the designated Village Center district are warranted for safety and to encourage more pedestrian activity.
- Amherst Road has a posted speed limit of 40 mph through the Village Center with the exception of a short segment that is posted as a school zone with a 20 mph speed limit while class is in session. A steep hill following a curve in the road as Amherst Road leads into the intersection with Amherst Road and North and South Valley Roads create dangerous conditions for pedestrians crossing the road from the school to the historic Community Hall.

- Pelham has a number of roads that have low traffic volume and are therefore low stress for bicyclists. Many roads have steep slopes so would likely be used for more adventurous riders. Since traffic volume on these roads is low, road striping or other bicycle and/or pedestrian infrastructure will not likely be needed under current conditions. Signs noting that the road is shared with bicyclists and pedestrians are recommended to increase driver awareness and caution when driving around corners.

4. Reducing Traffic Speed in West Pelham

The clearest outcome of the Public Forum, review of the existing roads, and discussions with the Pelham Planning Board was that there is a need to slow traffic coming into the West Pelham Village Center in order to make the village safer and more inviting for pedestrians. A Conceptual Plan of sidewalks, crosswalks, and traffic calming measures in the Village Center area was presented for comment at the Public Form and was displayed at the Library for two weeks before the forum. Participants at the Public Forum requested information regarding how the Town could reduce the speed limit on Amherst Road as a first step toward reducing traffic speed in the Village Center. This section presents the steps that the Town would have to take to reduce the speed limit, and then offers a Conceptual Plan for traffic calming measures that would aim to reduce traffic speed on Amherst Road.

Speed Zones

The Municipal Modernization Act of 2016 allows municipalities to establish regulatory speed limits on locally owned roadways lower than the statutory or default speed limit in certain contexts. These include 20 mph **School Zones**, 20 mph **Safety Zones**, and 25 mph in “thickly settled” areas in business districts. Establishing speed regulations on MassDOT-owned roadways requires MassDOT approval. Below is a summary of the requirements for each category of speed zone.

School Zones

The Town of Pelham currently has a posted School Zone with a flashing 20 mph speed limit sign that is in effect during school hours. The zone extends the length of the school property (per state regulation), and the School Zone signs are placed at each end of the school property on the side of the travel lane where the speed limit applies.

In addition to the School Zone signs, the towns may erect supplemental **“School Zone Ahead”** signs in advance of the beginning of each School Zone sign to notify motorists of their approach to a School Zone. Authorized speed limit signs must be placed at least 850 feet from the start of the School Zone in rural areas (500 feet in urban areas). On the side after the end of the school zone, the speed limit sign should be placed just beyond the end of the school zone.

Safety Zones

Cities and towns are permitted to reduce the speed limit to 25 mph on any local, non-state roadway in a thickly settled or business district. Prior to the 2016 changes to Chapter 90 of the Mass General Laws through the Municipal Modernization Act, towns were statutorily obligated to have a posted speed limit of 30 mph on any roadway in a thickly settled or business district. The Town must notify the MassDOT of the change on locally owned roads. The MassDOT must grant approval of Safety Zones on, at, or near any state highway. The MassDOT has created the following minimal criteria for establishing safety zones:

- The Street should be adjacent to a land use that his likely to attract vulnerable road users (i.e. parks, senior centers, day care facilities).
- The Safety Zone should contain one or more areas that have potential conflicts between motor vehicles and vulnerable road users that warrant a reduction in speeds such as crosswalks, driveways, or side streets.
- The minimum length of the Safety Zone should be at least ¼ mile and should not extend more than 500’ beyond a side street unless an applicable land use continues along the adjacent block.

Thickly Settled zones

Roadways in business districts or thickly settled areas may have a speed limit of 25 mph. Thickly settled areas and business districts are defined as corridors where buildings are less than 200 feet apart on an average over a 0.25 mile stretch.

The following measurement was made from a Google Maps view of the stretch of Amherst Road from the Amherst town line to Jones Road. According to this image, there are 21 buildings in a 4,200 foot stretch of road, which would be one building per 200 feet of road.

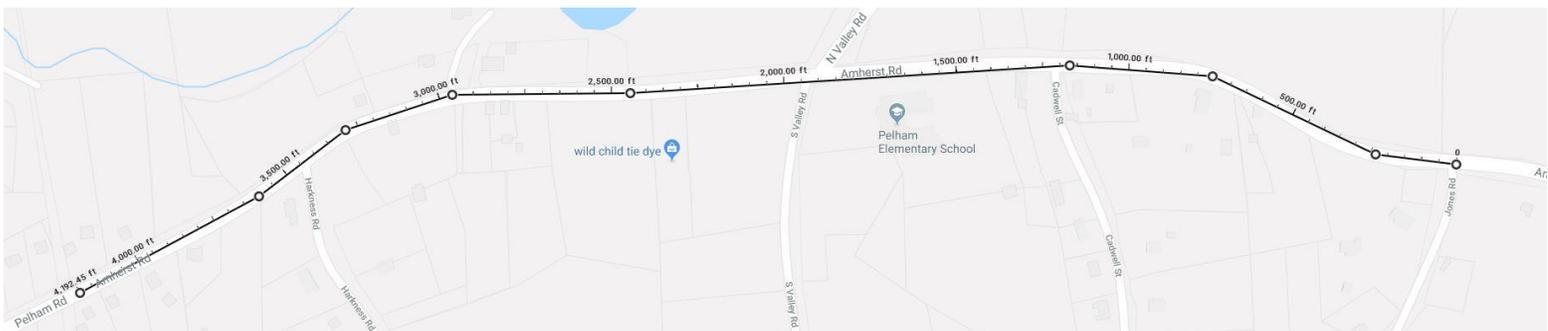


Figure 2: Road measurements from Amherst Town Line to Jones Road – Google Maps

The Town should work with PVPC and MassDOT to confirm these measurements and to request a change to a 25 mph or 30 mph “Thickly Settled” zone, or to designate this stretch of road as a Safety Zone. The DOT may require an engineering study before granting a change in the speed zone.

Traffic Signals

Some participants at the Public Forum asked if a traffic signal could be installed at the intersection of Amherst Road and North and South Valley Road. Similar to speed zones, MassDOT provides specific requirements that must be met in order for a traffic signal to be warranted. Traffic counts must be conducted on the main road where the signal would be located as well as on side roads. The following table gives a summary of the traffic volume that would support the need for a traffic signal at the Amherst and Valley Road intersections.

±

Condition A—Minimum Vehicular Volume									
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100% ^a	80% ^b	70% ^c	56% ^d	100% ^a	80% ^b	70% ^c	56% ^d
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112
Condition B—Interruption of Continuous Traffic									
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100% ^a	80% ^b	70% ^c	56% ^d	100% ^a	80% ^b	70% ^c	56% ^d
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

^a Basic minimum hourly volume

^b Used for combination of Conditions A and B after adequate trial of other remedial measures

^c May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

^d May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

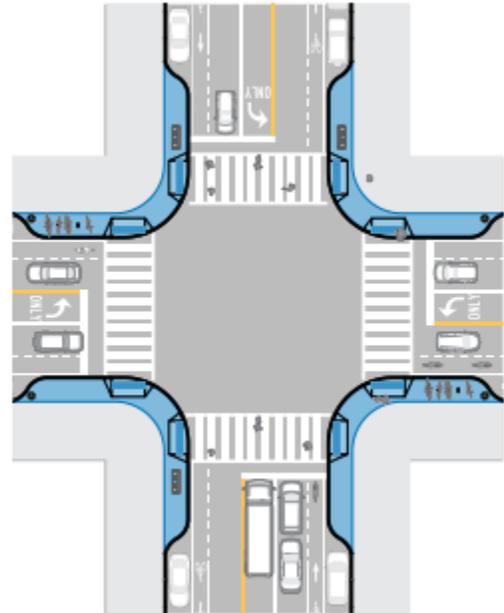
A traffic count conducted on Amherst Road by PVPC on 11/16/10 showed the highest hourly count of 380 vehicles between 9 am and 10 am and an average hourly count of 162 vehicles. In order to determine if a traffic signal would be warranted, the Town should work with PVPC and MassDOT to request the most recent traffic count data and to determine if additional counts should be requested.

Traffic Calming

Where traffic signals are not warranted according to MassDOT design standards, and speed limits are not adhered to, design elements may be added to the road to slow traffic. This approach, called “traffic calming,” uses a number of tools for slowing automobile and truck travel speeds on the road for the purposes of making a safer environment for more vulnerable users of the road. The following are some design elements that can be used to slow traffic on the road.

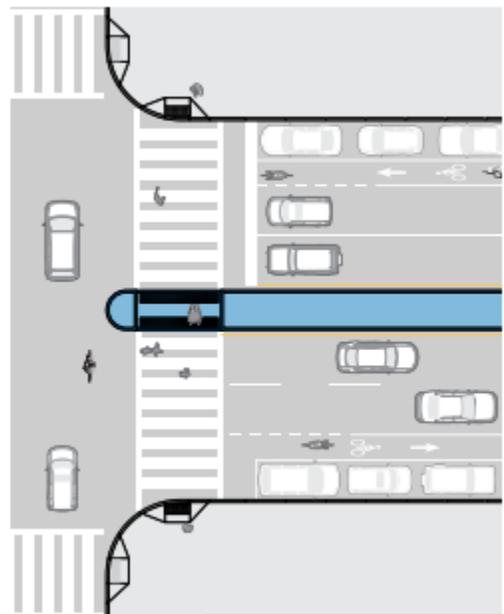
Curb Extensions

A narrowing of roadway widths at crosswalks or intersections through extending the curbs into the travel lane creates a shorter distance for pedestrians to cross the road and slows down turning traffic.



Pedestrian Islands

Pedestrian islands allow a place for pedestrians to stop in the middle of a roadway to wait for traffic.



Speed Bumps, Humps & Tables

Speed bumps, speed humps and speed tables, also referred to as “vertical deflection” are usually placed in a series along municipal roadways and cause traffic to slow down, and sometimes causes drivers to modify their routes. Raised crosswalks are also a form of speed table, and have the added benefit of keeping pedestrians and wheelchairs at the same height as the sidewalk.



Traffic Calming Conceptual Plans for West Pelham

PVPC created a conceptual redesign of the Village Center district to demonstrate possible traffic-calming solutions within the known right-of-way. The perceived extent of the right-of-way on Amherst Road has been a contentious issue for the Town in the past. Some private residences were built adjacent to or on the right-of-way line, resulting in uncertainty of over where the public right-of-way ends and private property begins. The conceptual design assumes:

- a 60 foot right-of-way from the centerline of the section of Amherst Road east of the Amherst Road / North and South Valley Road intersection,
- a 44 foot right-of-way from the centerline of the section of Amherst Road to the west of the Amherst Road / North and South Valley Road intersection, and
- unknown right-of-ways and centerlines on North and South Valley Roads (conversation with Richard Adamcek, Superintendent of Public Works).

It is important to reiterate that this design is conceptual, and that should the Town move forward with implementing a redesign of the Village Center district, the design services of a professionally certified engineer would be required to determine the feasibility and effectiveness of design features.

Slowing Traffic

The conceptual design suggests installing visual cues to increased pedestrian activity as a first method of calming traffic. “Entering Village Center” signs, designed to alert to motorists that they are entering a densely developed residential and commercial area with the possibility of increased pedestrian traffic, could be installed at the actual district boundaries or could be sited closer to the Amherst Road / North and South Valley Road intersection, where the densest development currently exists. These signs are **Feature 5** on the design rendering. In-Crossing Pedestrian Signs (**Feature 4**) are another effective method of alerting motorists to pedestrian right-of-way within a marked crosswalk. Bright yellow with reflective markings and located in the street centerline, the signs are highly visible to pedestrians and motorists alike. In the Village Center design, these signs are located at on crossings to the east and west of the Amherst Road / North and South Valley Road intersection. While the location of the crossing on the east side of the intersection already exists, the crossing on the west side would be a new installation. Choosing a continental, zebra, or ladder-style design would further enhance visibility of the new crosswalk.

In addition to visual cues, the design relies on physical barriers to speeding. Speed tables are strategically placed to prevent automobiles and freight trucks alike from gathering speed on the descent toward the school and library/fire/police station from the east and from the Amherst town line to the west (**Feature 3**). These speed tables can be sized and spaced to slow traffic traveling within various speed ranges—in this conceptual design, the speed tables are rendered to slow traffic traveling at an average speed of 35 mph without having a significant impact on the speed of emergency vehicles (https://safety.fhwa.dot.gov/speedmgt/ePrimer_modules/module3pt2.cfm).

This concept also redesigns the crosswalk to the east of the Amherst Road / North and South Valley Road intersection, the existing solid-style marked crossing with a raised crosswalk (**Feature 2**). The raised crosswalk is a variation of the speed tables, with the flat top of the speed table signed and marked as a pedestrian crossing. A 10-foot flat top on a typical speed table conforms to a desired crosswalk width (https://safety.fhwa.dot.gov/speedmgt/ePrimer_modules/module3pt2.cfm). The raised crosswalk forces vehicles to slow down, even as they are further alerted to possible pedestrian activity by the strategically-placed In-Crossing Pedestrian sign.

The design further addresses traffic speed by placing curb bump-outs at the corners of the Amherst Road / North and South Valley Road intersections (**Feature 1**). Corner radii directly impact vehicle turning speeds and pedestrian crossing distances, with larger radii allowing for higher turning speeds and necessitating longer pedestrian crossings. According to NACTO, standard curb radii are 10–15 feet, although many cities use corner radii as small as two feet (<https://nacto.org/publication/urban-street-design-guide/intersection-design-elements/corner-radii/>). In this conceptual design, the wide turn radii have been reduced to approximately five feet to necessitate a near stop for a vehicle turning from Amherst Road onto North or South Valley Road, and a full stop for vehicles turning onto Amherst Road. The reduction in curb radii has been accomplished via vegetated curb bumpouts, which also serve to reduce in-street crossing distance for pedestrians.

Although the strategy is a proven method for traffic-calming, this design does not propose narrowing lane widths on Amherst Road as the existing travel lanes are not overly wide at approximately 12 feet. At the public hearing for the design, there was some support for pursuing that line inquiry further. The Town should engage in further discussion with emergency managers, such as the chiefs of police and fire, to determine if narrowing road widths is feasible on Amherst Road.

Making Space for Pedestrians

The conceptual design suggests installing sidewalks on the south side of Amherst Road, and on the north corners of the Amherst Road / North and South Valley Road intersection. These sidewalks are sized to be five feet wide, in accordance with the Village Center zoning regulations, and installed with tactile warning strips at all curb-cuts to comply with ADA requirements. As there are not currently any sidewalks in the Village Center district, these amenities will provide the first designated space for pedestrian traffic within the village. The sidewalks are designed to extent to the Village Center boundaries, connecting with the Amherst town sidewalks to the west.

A six-foot tree belt, also required in the Village Center district zoning regulations, provides a buffer between the southern sidewalk and vehicular travel lane. The tree belt serves multiple functions, including increasing pedestrian safety and comfort, providing shade, providing green stormwater management and reducing the likelihood of roadway flooding, slowing traffic, and beautifying the Village Center district.

The design introduces new pedestrian crosswalks while enhancing the visibility of existing crosswalks. As described above, the existing crosswalk to the east of the Amherst Road / North and South Valley Road intersection has been transformed into a raised crosswalk, highlighting pedestrian right-of-way and necessitating reduced traffic speed. A new crosswalk to the west of the Amherst Road / North and South Valley Road intersection allows for easier pedestrian crossing for those walkers approaching the school or library from the west. Prominent new crosswalks also give right-of-way to children and families crossing the elementary school parking lot's ingress and egress lanes. All of the painted crosswalks should be installed for maximum visibility, with solid, continental, zebra, or ladder styles being the most prominent.

Traffic Calming in the West Pelham Village Center

A draft conceptual design for a walkable village center



Feature Definition

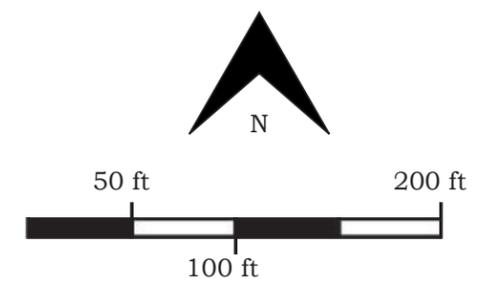
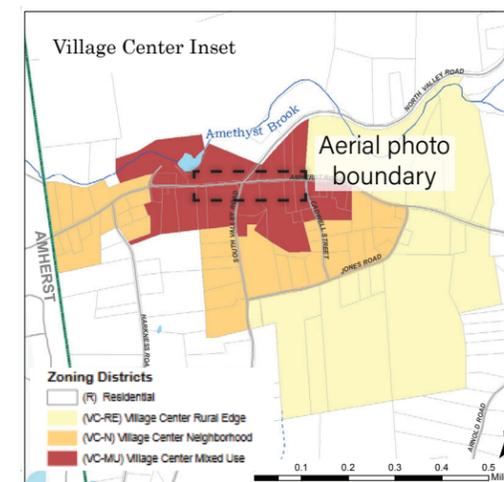
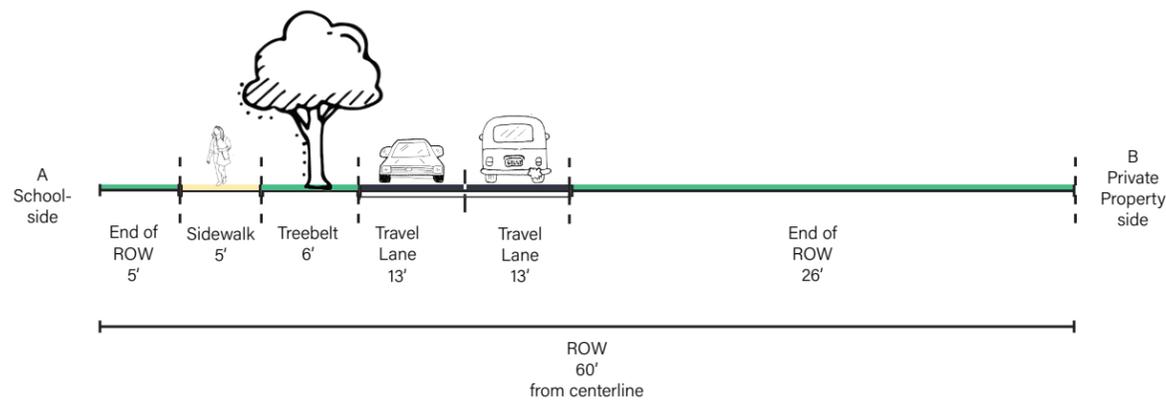
- ① **Small Curb Radii:** 5 ft curb radii slow turning traffic.
- ② **Raised Crosswalk:** Reinforces slow speeds and encourages motorists to yield to pedestrians at the crosswalk.
- ③ **Speed Table:** Placed to signal entry to Village Center. Shown here as 22 ft in width, designed to slow 35-45 mph traffic. Most effective when constructed in a series.
- ④ **In-Crossing Pedestrian Sign:** Relatively low-cost, highly effective tool used at the road centerline within crosswalks to increase driver awareness of pedestrians.
- ⑤ **"Entering Village Center" Sign:** Signals to motorists that they are entering a highly trafficked, dense area with a change in ROW use.



Symbol Legend

-  Street tree
-  Sign
-  Sidewalk tactile warning pad
-  Speed table
-  Crosswalk
-  Treebelt / vegetated buffer
-  Sidewalk

Cross Section of Amherst Road ROW



5. Bicycle and Pedestrian Facility Types

Pelham is a small town (population 1,321 according to the 2010 Census) and little data has been collected regarding the usage of town roads by bicyclists and pedestrians. According to participants at the Public Forum, some routes are used by the more avid riders. However, steep slopes on many side roads and traffic speeds on the more traveled roads (Amherst Road and Route 202) make bike travel daunting. One participant said that he would never ride in Pelham but puts his bike on the car and drives to the Norwottuck Trail in Amherst to ride on separated trails.

Roads in the Pelham roadway network were evaluated for bicycle and pedestrian suitability based on existing data on average daily traffic (ADT), crash data, traffic speed, road and shoulder widths as compared to recommended road geometry, and road slopes. Routes where sidewalks or other improvements for pedestrian use are recommended were also evaluated based on the available land within the existing road width and the Town's Right of Way (ROW) that could be used for construction of pedestrian improvements. As noted previously, although the Town's ROW is up to 60 feet in several sections of Amherst Road, several structures have been built within this ROW and therefore the amount of actual space that could be used for widening the roadway or adding sidewalks would have to be reviewed on a case-by-case basis.

This section provides potential cross-sections for street types within and around the village of West Pelham. These cross-sections may be used for planning and decision-making purposes for the development of a final bike and pedestrian network in the town.

The network has been broken down into four road types. The roads that would fall into these road types have been listed in each section.

- Village Center Corridor
- Primary Connector
- Neighborhood Street
- Rural Road

The drawings that follow show a variety of potential bicycle and pedestrian facility treatments appropriate to each of the four street types listed above. These drawings present a variety of options for bicycle and pedestrian facilities given different road widths, including the existing road width and widths that would allow for additional infrastructure (a bike lane as well as

sidewalks, for example), but would require that the Town expand the road width or build sidewalks within the Town's ROW.

Intent of Drawings

The drawings contained in this report are for planning purposes only. Determining appropriate lane configurations and dimensions for specific locations would require field verification of existing conditions, projection of future traffic demands, and design by a qualified professional. All dimensions shown should be viewed as approximate. Dimensions shown often indicate typical minimum requirements. Depending on context, the dimensions shown here may be less than recommended ideal widths cited in standard design guides. In other contexts, lane widths may be larger than necessary.

Village Center Corridor

Where: Amherst Road from Valley Street to Jones Road

Existing Conditions: This section of Amherst Road travels through the village of West Pelham. From west to east the road passes by the fire station, Community Building, and Pelham Elementary School and continues to Jones Road, which is the last side road off of Amherst Road in the Village Center District. The speed limit on this section of Amherst Road is 40 mph except when the school speed limit sign is flashing, at which time the speed limit is reduced to 20 mph. There are currently no sidewalks in the village, but a painted crosswalk connects the police station with an unpaved parking area next to the Pelham Community Hall.

Sample Treatments: The sample treatments below present options for sidewalks and/or bicycle facilities according to the existing road width (approximately 30 feet in most locations) up to an “ideal” width (46’) that would include more of the Town Right of Way and provide space for bike lanes, sidewalks and street trees. These sample treatments may be used in addition to or substituted for the treatments presented in the Village Center Conceptual Plans in Section 4 of this document.



Figure 4: Sidewalks and 11' Travel Lanes, Shared Lane Markings for bikes

West Pelham - Amherst Rd - 36'



Figure 5: Sidewalks & Street Trees, Shared Lane Markings for Bikes

West Pelham - Amherst Rd - 40'

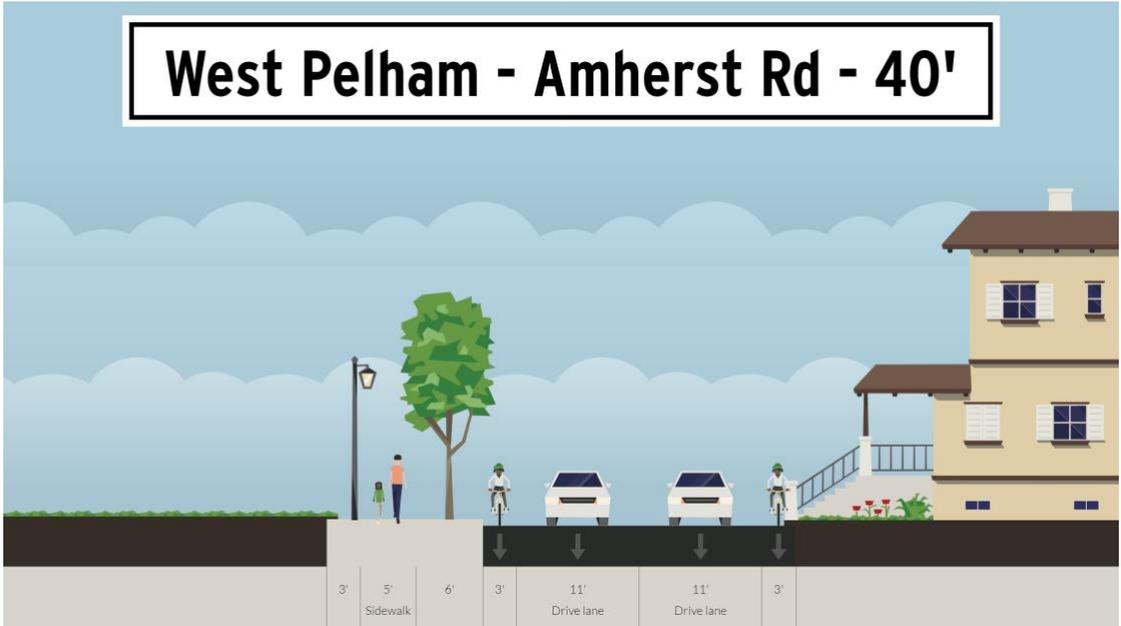


Figure 6: Sidewalks, Street Trees, Shoulders for Bikes

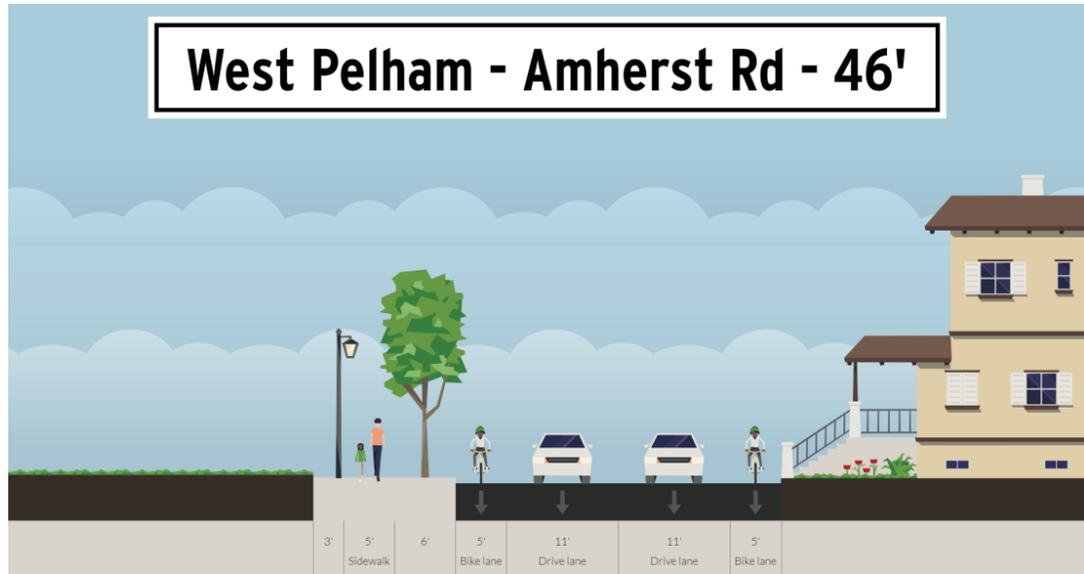


Figure 7: Sidewalks, Street Trees, Bike Lanes

Primary Connector

Where: Amherst Road from Jones Road east to Route 202

Existing Conditions: This section of Amherst Road connects the village of West Pelham to the eastern part of town and the Quabbin. The speed limit on this section of Amherst Road is 40 mph until Pine Tree Circle, where the speed limit changes to 45 mph. Although shoulders are present, they are narrow in many sections. This road is not likely the best route for pedestrians or more timid cyclists, but provides a good connection between Amherst and Route 202, and is used by more courageous riders.



Sample Treatment: If a 32-foot road width is assumed, travel lanes could be narrowed to 11' and 5' bike lanes added. This would add some comfort for bicyclists and bike lanes could be used by pedestrians if needed. The potential downside of this treatment is that a wider road width could cause automobile traffic to go faster. Enforcement of speed zones and signage noting that the road is also used by bicyclists would help to alleviate traffic speed on the road.



Figure 8: Travel lanes narrowed to 11', 5' bike lanes

Neighborhood Street

Where: Hartness Road, South Valley Road, Jones Road

Existing Conditions: These residential streets carry less traffic and have lower speed limits, so are accessible for bicyclists and pedestrians. However, road widths are narrow (approximately 24') and blind curves are present in some locations. Harkness Road is used as a through route from Pelham to Amherst, bringing greater traffic volumes and speeds.



Proposed Treatment: As a divider line is not currently present on many of these roads (South Valley, Jones Road), shared lane markings would not be useful. The existing road width of 24' and low traffic counts make these roads appropriate as “local shared roads” (see Figure __).

Sidewalks are recommended if traffic volumes increase, meaning that the Town would need to widen the road area to include enough widths for sidewalks. The treatment below assumes 10.5' lane widths and a six-foot sidewalk with a 2' buffer from the road. This would total 29' or an increase of 5' beyond the current road widths.



Low volume, low speed local roads may be appropriate for a shared roadway treatment.



6. Funding Options

This section provides an outline of potential funding sources for the bicycle and pedestrian projects outlined in the Amherst Bicycle and Pedestrian Network Plan.

Transportation Improvement Program (TIP)

Most large scale transportation improvements are funded through the TIP. The Pioneer Valley TIP is a four-year schedule of priority highway, bridge, transit, and multimodal projects identified by year and location complete with funding source and cost. The TIP is developed annually and is available for amendment and adjustment at any time. Each program year of the TIP coincides with the Federal Fiscal Year calendar, October 1 through September 30.

As the lead planning agency for the Pioneer Valley Metropolitan Planning Organization (MPO), the PVPC accepts the responsibility for developing the TIP in a cooperative process with members of the MPO and the general public. The final TIP is voted on for endorsement at a formal meeting of the MPO.

The MPO relies on a transportation advisory committee to carry out the cooperative process during TIP development. The Joint Transportation Committee (JTC) is a group of community appointed officials, MPO member representatives, public and private transportation providers, citizens, and special interest groups and agencies. The JTC establishes and recommends to the MPO procedures for submitting, prioritizing and selecting projects for the TIP.

Communities submit projects to be considered for programming on the TIP through the process outlined in Chapter 2 of the Massachusetts Project Development & Design Guidebook (2006). This request must be initiated through the chief locally elected official. Projects are evaluated by MPO staff based on the current regional evaluation criteria (<http://www.pvpc.org/projects/transportation-evaluation-criteria-information-center>), their current design status and the availability of funding. Communities are generally responsible for the cost of the design of the project.

Massachusetts Complete Streets Program

The Complete Streets Funding Program, authorized by the 2014 Transportation Bond Bill, offers Massachusetts municipalities incentives to adopt policies and practices that provide safe and accessible options for all

travel modes – walking, biking, transit and vehicles – for people of all ages and abilities. To be eligible for up to \$50,000 in technical assistance and up to \$400,000 in construction funding, a municipality must meet three primary requirements:

1. Attendance of a municipal employee at a Complete Streets training
2. Passage of a Complete Streets Policy that scores 80 or above out of a possible 100 points (Tier 1)
3. Development of a Complete Streets Prioritization Plan (Tier 2)

Upon completion of these requirements, a municipality is eligible for implementation funding up to \$400,000 to construct projects identified in their prioritization plan.

The Town of Amherst recently adopted a Complete Streets Policy, so is eligible to apply for funding to develop a Complete Streets Prioritization Plan. For more information, go to: <https://www.mass.gov/complete-streets-funding-program>

Safe Routes to School

Infrastructure improvements to the roads and walkways surrounding schools can be funded as part of the Massachusetts Safe Routes to School program. Bicycle and pedestrian improvements can consist of upgrades to school crossing areas, the upgrade of school access through on or off-road bicycle facilities, bicycle parking, and sidewalk improvements. For more information: <https://www.mass.gov/safe-routes-to-school>

Highway Safety Improvement Program (HSIP)

The HSIP program provides funding to reduce traffic fatalities and serious injuries on public roadways. This program requires a data-driven process to verify the existing safety problem and the development of an improvement project to correct the problem that is consistent with the State Strategic Highway Safety Plan. MassDOT identifies HSIP “clusters” for locations that are within the top 5% of all clusters in that region. Many intersection improvement projects are funded via HSIP. For more information: <https://safety.fhwa.dot.gov/hsip/hsip.cfm>

Surface Transportation Block Grant (STBG) program for Transportation Alternatives (TA)

A set aside source of funding under the Surface Transportation Block Grant Program (STBG), TA provides funding for smaller scale projects such as pedestrian and bicycle facilities, recreational trails, safe routes to school

projects, and historic preservation. In the Pioneer Valley, TAP funding is awarded to roadway improvement projects programmed on the TIP to assist in funding the TAP eligible components of the larger project. Stand along projects are not currently eligible for TAP funding through the TIP. For more information:

<https://www.fhwa.dot.gov/fastact/factsheets/transportationalternativesfs.cfm>

Local Aid (Chapter 90)

Chapter 90 funding is a local aid reimbursement program for road projects funded from the Commonwealth. This funding is extremely flexible, and can generally be used for bicycle and pedestrian facilities within road right of way. Off-road paths are not eligible for Chapter 90 funding. The most promising opportunity in Amherst lies in identifying Chapter 90 projects in which bicycle and pedestrian facilities can relatively easily be added. This provides a low-cost option for installing bicycle and pedestrian facilities as projects are done. For more information: <https://www.mass.gov/service-details/chapter-90-funding-guidelines>

Community Preservation Act

The Community Preservation Act (CPA) is a state matching program that serves to promote the preservation of open space, historic sites, and affordable housing in the Commonwealth's communities. Communities that vote to adopt the CPA raise funding locally through a property tax surcharge, which is then matched by the state at a rate currently of around 30%. CPA funding must be approved by the Amherst Community Preservation Committee and adopted into the budget. Bicycle and pedestrian facilities located in recreational open spaces is eligible for funding, though would not apply to road projects. For more information: <https://www.mass.gov/service-details/community-preservation-act>

MassWorks

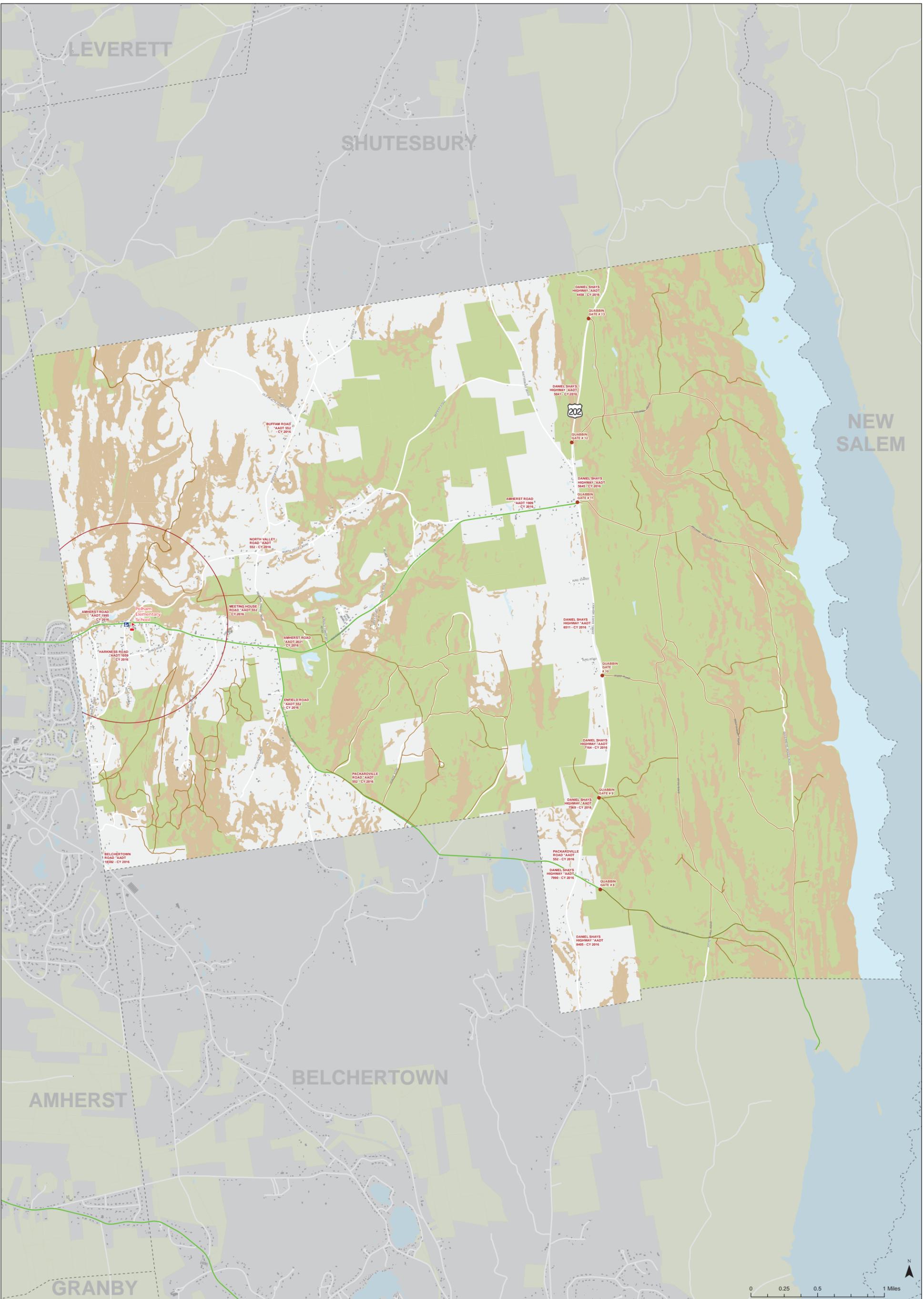
MassWorks is a funding program administered by the Office of Housing and Economic Development. The purpose of the fund, according to the website, is to “support housing and commercial growth opportunities that contribute to the long-term strength and sustainability of Massachusetts, with a particular emphasis on projects that support the production of multi-family housing (consistent with the Commonwealth’s 10,000 Multi-Unit Housing Production Goal) in appropriately located mixed-use districts, or that support economic development in weak or distressed areas.”

Importantly, MassWorks has been used to fund transportation improvement projects that support mixed-use, multi-family housing. One recent example is in Salem. From the website:

The City of Salem was awarded \$1.275 million to support the improvement of Grove Street from Harmony Grove Road to Goodhue Street. The project will produce a "complete streets" circulation environment with pedestrian and bicycle accommodations. MassWorks funds will be used for construction, environmental remediation, and design. The infrastructure development will directly support the proposed redevelopment of Legacy Park and four other key sites within the North River Canal Corridor to create a total of 315 housing units. These projects will revitalize this blighted, former industrial area into a mixed-use neighborhood consistent with the goals of the North River Canal Corridor Master Plan.

For those parts of the plan that align with the goals of the MassWorks fund, this could be a fruitful source of funding for implementation. For more information:

<http://www.mass.gov/hed/economic/eohed/pro/infrastructure/massworks/>



Bicycle & Pedestrian Base Map
Bicycle/Pedestrian Plan

PELHAM, MA

- Bicyclists' Preferred Routes
- Trails
- Quabbin Gates
- Library
- Public School
- Village Center 3/4mile Buffer
- Municipal Boundaries
- Building Footprints
- Open Water
- Steep Slopes >15%
- Protected and Recreational OpenSpace