



RUTGERS, THE STATE UNIVERSITY OF NEW JERSEY

TOWN OF CARMEL COMMUNITY PLANNING WORKSHOP



RUTGERS

Edward J. Bloustein School
of Planning and Public Policy

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INTRODUCTION

The New York Metropolitan Transportation Council (NYMTC) is the Metropolitan Planning Organization (MPO) for New York City, Long Island, and the Lower Hudson Valley region. NYMTC's planning area includes 2,440 square miles and a 2020 population of 13.17 million, approximately 65% of New York State's population and 4% of the nation's population. As an MPO, NYMTC provides a collaborative planning forum to address transportation-related issues, develop regional plans, and make decisions using federal transportation funds for its jurisdiction. As a follow-up to their recent long-range regional transportation plan, *Moving Forward*, NYMTC has partnered with The Public Outreach and Engagement Team (POET) at The Alan M. Voorhees Transportation Center (VTC) at Rutgers University to plan and execute Community Planning Workshops in municipalities throughout the NYMTC region. These workshops will serve as informative catalysts and aid in advising future infrastructure projects in the participating municipalities. This report will outline the Community Planning Workshop results and recommendations for one of the towns in this series, The Town of Carmel.

MOVING FORWARD OVERVIEW

Moving Forward is the long-range regional transportation plan for fiscal years 2022-2050 for the NYMTC planning area; it is one of the four planning products NYMTC is federally required to produce as part of the metropolitan transportation planning process to secure federal funding for the region. The Plan currently fulfills federal planning requirements and maintains NYMTC's eligibility for federal funding for transportation planning and improvement projects. *Moving Forward* is a blueprint to help support sustainable growth and guide transportation investment in the region; it includes forecasts for future conditions and needs and potential transportation improvements and outlines a shared strategic vision for transportation and development within the NYMTC planning area. *Moving Forward* has outlined six *Coordinated Development Emphasis Areas* (CDEAs) as a targeting mechanism to guide the planning process in communities seeking transportation planning assistance from NYMTC.

1. Encourage development in centers and downtowns to reinforce walkable, aesthetically pleasing, and transit-accessible environments.
2. Include local transportation issues in comprehensive/master planning and community visioning processes.
3. Make walking safer and more convenient through safety and streetscape improvements.
4. Support downtown development/redevelopment.
5. Encourage walkability, Complete Streets, and remote parking in targeted centers.
6. Complete and distribute the MTA First Mile/Last Mile Station Access Toolkit.

ABOUT THE COMMUNITY PLANNING WORKSHOPS

NYMTC and POET are conducting community workshops in line with the Moving Forward regional transportation plan. The workshops will target suburban municipalities and New York City community boards in the NYMTC planning area. Workshop topics and locations will be established through NYMTC's member agencies using the Coordinated Development Emphasis Areas (CDEAs) identified in NYMTC's Regional Transportation Plan and the congested roadway corridors and bottleneck locations in NYMTC's 2021 Congestion Management Process (CMP) Status Report as targeting mechanisms. Workshop topics include expanding non-motorized transportation, transit-oriented development, parking management, safety audits, reduced traffic congestion, and improved access to public transit. These workshops provide planning assistance to local municipalities and community boards. They will facilitate discussions, enabling participants to develop, evaluate, and implement improvements consistent with the topic chosen.

TOWN PROFILE- CARMEL

Map of Carmel, New York

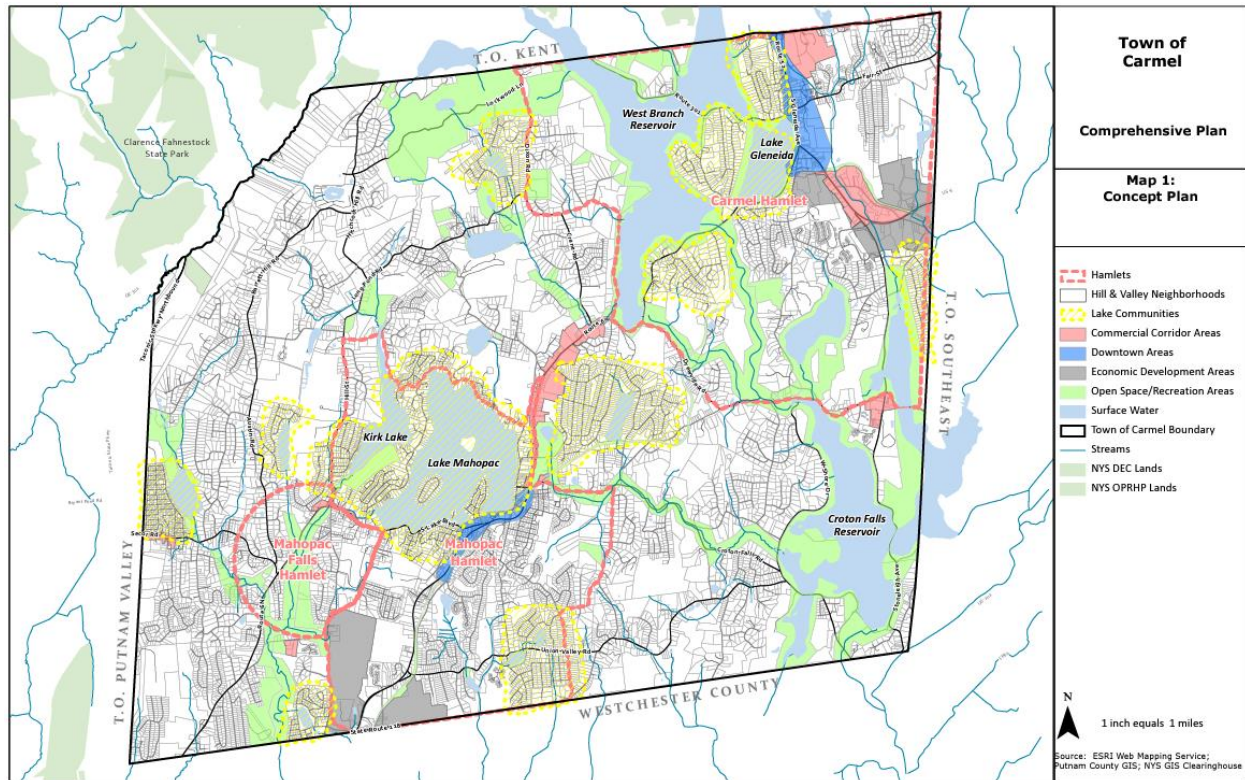


Figure 1 Map of Carmel, NY Source: Town of Carmel 2022-2035 Comprehensive Plan

The Town of Carmel, in Putnam County, is approximately 40 square miles in the southern central portion of Putnam County. The Town contains several reservoirs and lakes used by residents and visitors for recreation and leisure. Concentrated around these lakes are two Hamlets: Carmel and Mahopac. For this project, the Town of Carmel has identified critical areas of focus within the downtown of the Mahopac hamlet.

BACKGROUND ON DOWNTOWN MAHOPAC

Cherry Lane borders downtown Mahopac to the west, the Tompkins Mahopac Bank to the east, and the southern shore of Lake Mahopac to the north. The area is home to residents of various socioeconomic backgrounds, with a median household income higher than that of Putnam County. Mahopac Point, the peninsula north of the downtown, is a concentrated section of higher-income homeowners. These high-income homeowners also expand around the coast of Lake Mahopac. Mixed-use, row-type buildings on the downtown strip provide more affordable housing options for lower-income families and individuals. Several municipal and Town

facilities, like the library and fire station, are located along the waterfront. Most businesses are located south of the downtown strip (Route 6), as the northern portion gives views of the beautiful Lake Mahopac. Several parks line the banks of the lake and provide residents with places to play, visit, and relax.

FIELD OBSERVATIONS AND TRIP PATTERNS

Route 6N (South Lake Blvd) winds alongside the southern portion of Lake Mahopac from west to east, eventually merging into Route 6. Route 6N bisects downtown, with businesses on the North and South sides and two recently installed crosswalks. After merging into Route 6, pedestrian crossings decrease, and amenities like sidewalks become infrequent and inconsistent.

Route 6 is an essential highway for the region, connecting Carmel with Westchester County to the southwest and Connecticut to the east. This two-lane highway is heavily utilized and is congested often, with about 16,860 vehicles utilizing it on a typical day. The most frequent reason for using this roadway is to pass through Mahopac on their way to somewhere else. While the corridor offers public transit like Putnam Area Rapid Transit (PART) Line 2 and Westchester County BeeLine Route 77, 97% of those traveling to Mahopac do so with a personal vehicle. The high usage of vehicles has created a significant demand for parking in the downtown area. This problem is particularly apparent during the summer when the marina is active. A recent parking study found that at peak hours, downtown Mahopac is experiencing a deficit of 70 parking spaces (Walker Consultants 2018). During a site visit, the NYMTC/ POET project team observed high concentration along Route 6 and Route 6N, limited pedestrian presence, and high parking utilization. Parallel to Route 6, the Putnam Trailway provides 12 miles of paved road for

cyclists and pedestrians. During the site visit, this amenity appeared to be significantly under-used.

**** Data used above was collected from “Corridor 3: Route 6 Hamlet of Mahopac” from Putnam County Commercial Corridors Study**



Figure 2 Traffic stopped on Mt. Hope Road at the intersection of Route 6 and Mt. Hope Road in Mahopac, NY. Source: POET.

PROBLEM STATEMENT: PEDESTRIAN SAFETY

CURRENT SAFETY CONDITIONS: DATA REVIEW

Crash data from the New York State Department of Transportation (NYSDOT) for 2023 reported 1,873 crashes within Mahopac, at least four of which were fatal, and about 200 resulted in injuries. The intersection that claimed the highest number of high-severity hits for those years was the intersection of Mt. Hope Road and Route 6, which is also the location of the current crossing for the bikeway. The exit of the Senior Home along Route 6 is another location of high-density crashes. This challenging intersection requires drivers who wish to exit left out of the senior center to yield to Northbound traffic. However, the sightline must be improved as the hill often hinders the view of oncoming traffic.

Heat Map of Crashes in Downtown Mahopac in 2023

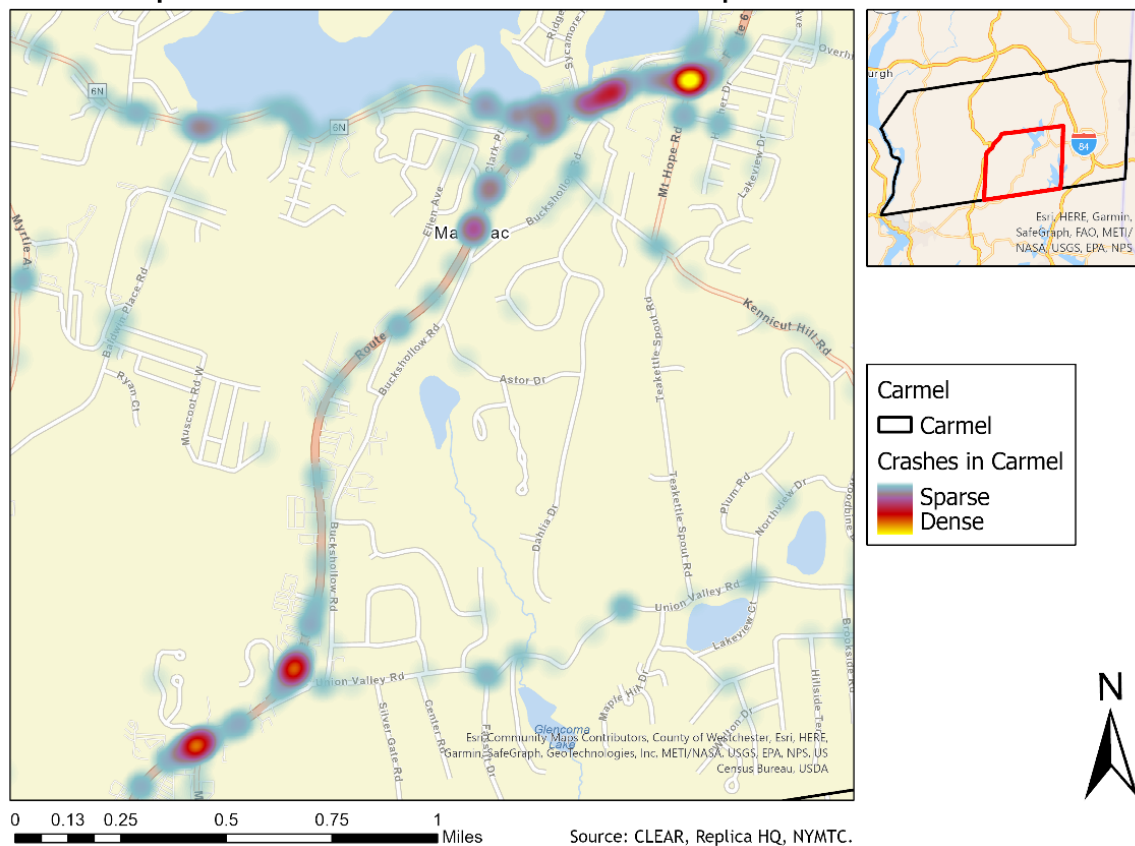


Figure 3 Carmel Crash Data 2023, NYMTC, NYSDOT, map by Voorhees Transportation Center.

GOALS FOR PROPOSED IMPROVEMENTS

The Town identified the need for pedestrian safety and connectivity improvements in the hamlet of Mahopac. The connectivity improvements proposed by the Town include improving and building sidewalks and crossings, as well as establishing new pathways. The proposed safety improvements also include improving the sidewalk network and reconfiguring some road structures. Increasing the amount of available parking was another need for the Town. The goals of these improvements are to:

- Increase community safety and pedestrian experience.
- Improve accessibility of the downtown.
- Increase local economic or business activity as a result of improved connectivity.

KEY LOCATIONS AND AREAS OF INTEREST

The general areas of interest the Town seeks to pursue future improvements are along the Route 6 corridor. For this community planning workshop, the Town of Carmel pinpointed five critical locations of focus as follows:



Figure 4 The length of Mt. Hope Rd Crosswalk exposes pedestrians to potential collisions. Those utilizing the Putnam trail and nearby parking have to cross this busy intersection on their way towards downtown Mahopac.

Source: POET.

Mt. Hope & Putnam Trail

The start of the Putnam Trail is located along Mount Hope Road, a road intersected by Route 6. With high traffic volumes and high speeds, this intersection is a crash hot spot. Pedestrians and cyclists experience long crossing distances and dangerous conflicts with turning cars. Improvements along and around this intersection can encourage the use of the bikeway and increase safety for users.



Figure 5. The current entrance and exit of the Senior Housing development along Route 6.

Senior Center Connector Road

The current entrance and exit for the William Koehler Memorial Senior Center open onto Route 6 and requires a dangerous left-hand turn to continue north on Route 6. Several collisions have occurred at this location and are of significant concern to the Town.

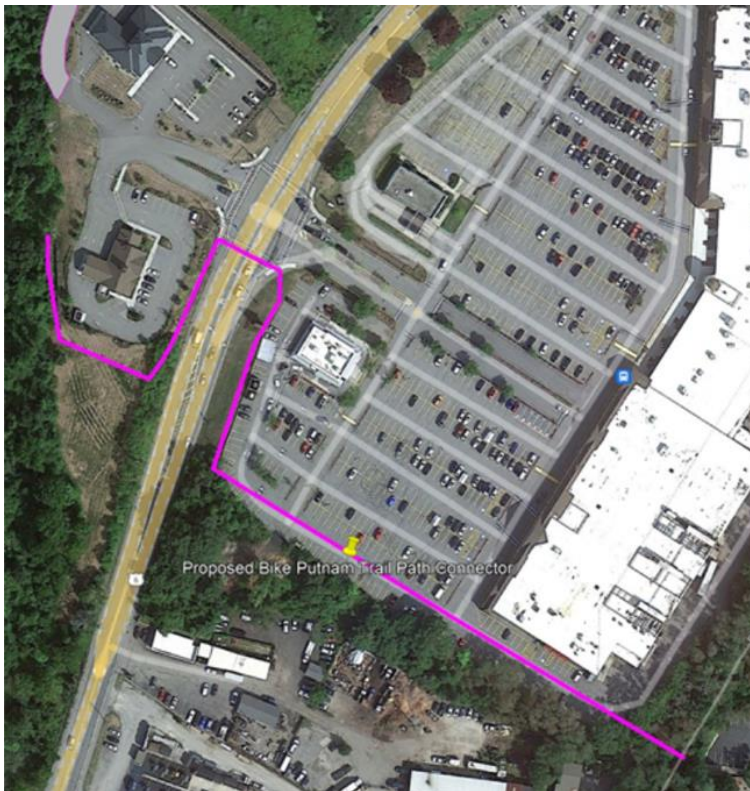


Figure 6. The potential connector pathway to run between the Putnam Trailway and the future Mahopac Falls Trailway

Mahopac Falls Trailway

The Town is redeveloping old train tracks into the Mahopac Falls Trailway, northwest of Route 6, beside the Senior Center. To plan for the future of this trailway, the Town would like to develop a safe connection between the current Putnam bikeway and the future trail.

Downtown Accessibility

The Town is concerned that limited parking may deter people from visiting downtown Mahopac. Addressing these deficits may help to increase accessibility and thereby increase the volume of visitors. Using a parking study focused on the needs of downtown Mahopac, the Town is deciding on several proposed locations for a municipal parking lot.

The Town of Carmel can improve accessibility to downtown Mahopac by taking advantage of the Putnam Trail's proximity, as it is only a few hundred feet south of Route 6. By providing an access point to the trail from downtown, residents between Carmel's Town Hall and Astor Dr/Bucks Hollow Rd would have a low stress walk of less than one mile into Mahopac. Figure 7 shows the existing path from the Putnam Trail to a parking lot with Route 6 visible in the background, indicating that some people regularly walk to the downtown area.



Figure 7. The only current connector between the Putnam Trail and downtown Mahopac is an unmarked, poorly maintained dirt path. The use signifies a demand for a better connection. Source: POET.

Route 6 and Cherry Lane

Route 6N currently allows traffic in both directions, which increases the speed along the roadway and increases the amount of traffic. The Town hopes to reduce this traffic volume and speed by proposing a one-way section of 6N between Cherry Lane and Sycamore Road/Mahopac Point, as illustrated in Figure 8. Traffic on Route 6 moving east to southwest can use Cherry Lane, already a one-way road, to reach downtown. While the Town hopes this proposal will make it safer for pedestrians on Route 6N, key County and State decision-makers would likely require a traffic study to determine the impact it would have on regional travel



Figure 8. The current condition of Route 6N with traffic in both directions. The merge with Route 6 has been a site of several traffic collisions. Source: POET.



Figure 9. The Town's proposed reconfiguration of Route 6N to a one-way street, as presented at the workshop for public input.

WORKSHOP

Carmel- Mahopac Community Workshop

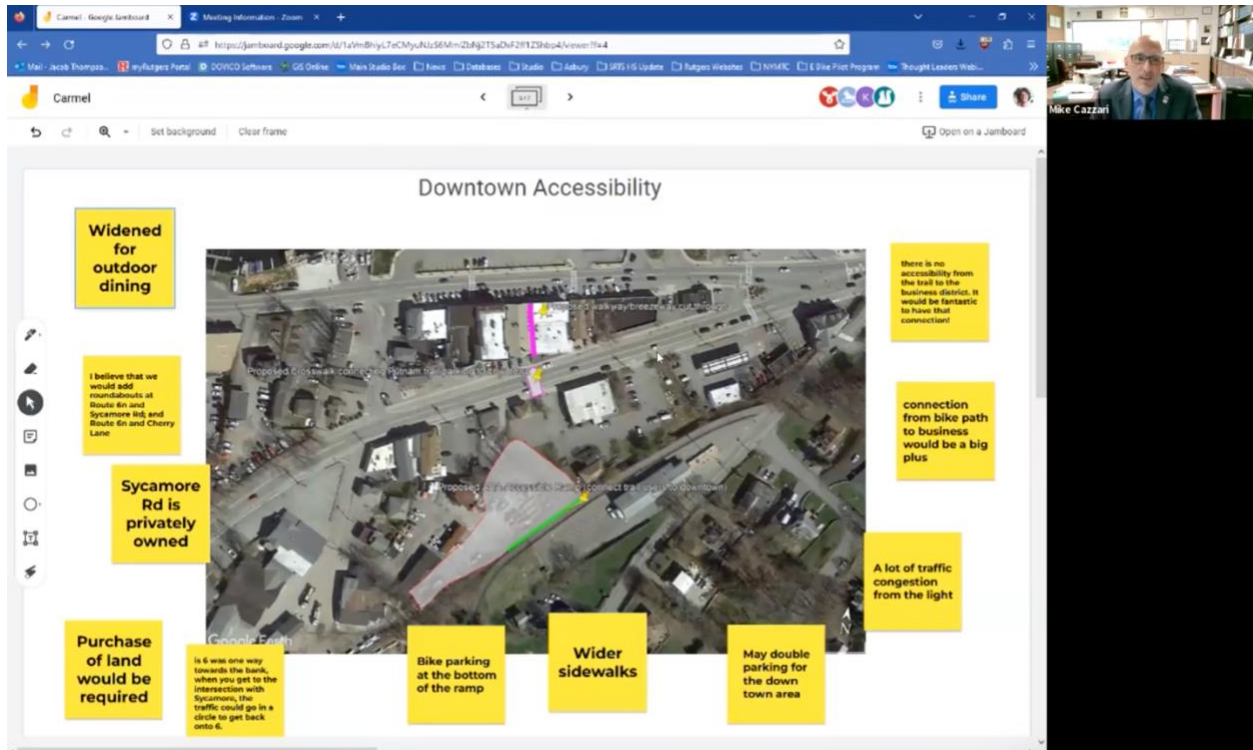


Figure 10. Mike Cazzari answering questions during the Community Workshop on Zoom, May 16, 2023.

The Carmel Community Planning Workshop was the third in the series of Community Workshop Projects. The following sections detail the events leading up to the workshop and the meeting outcomes on May 16, 2023.

PROMOTION AND OUTREACH

Rutgers-POET and NYMTC worked with the Town of Carmel to develop an outreach strategy plan, including promotional materials and strategies to disseminate information throughout the Town. The Town of Carmel provided a preliminary list of organizations and individuals to contact by phone and email. POET produced materials, such as social media graphics, flyers, and a contact list. POET distributed these materials to businesses, institutions, and local non-profits, both via email and in person, on a site visit to downtown Mahopac.

FORMAT AND AGENDA

The Town of Carmel, NYMTC, and POET convened for a virtual Community Planning Workshop on May 16, 2023, at 5:00 PM. The primary purpose of the meeting was to collect feedback from Carmel Residents on walkability and pedestrian safety improvements, which could be funded through the federal process with a particular focus on the neighborhood of Mahopac. POET facilitated a Google Jamboard activity to collect feedback from residents.

Jacob Thompson and Miriam Salerno of the Voorhees Transportation Center served as subject-matter experts for the workshop.

Community members gave verbal feedback on potential improvements and solutions presented throughout the meeting via discussion and online chat. The session was recorded.

While 27 individuals registered for the meeting, only 16 attended the Zoom meeting. Participants included nine facilitators or speakers (POET, NYMTC, and municipal staff), two participants were from Putnam County staff, and five residents.

Meeting agenda was as follows:

Pre-meeting Set up		
6:30 PM	Project Team and Facilitators join Zoom meeting to test audio and video	15 min
6:50 PM	Opening Image will be launched on screen Begin monitoring waiting room for attendees	10 min
Plenary Session		
7:00-7:05 PM	Welcome and Review Agenda <i>Miriam Salerno, POET and David Drits, NYMTC</i>	5 min
7:05-7:10 PM	NYMTC Background and Moving Forward <i>David Drits, NYMTC</i>	5 min
7:10-7:15 PM	Community Workshop Purpose Carmel/Mahopac Context <i>Miriam Salerno, Rutgers University</i>	5 min
7:15-7:50 PM	Streetscape and Bike & Pedestrian Safety Presentation <i>Subject matter expert- Jacob Thompson</i> • Overview of proposed parking improvements – present renderings • Overview of bike & ped connectivity concerns and proposed intersection improvements: • Putnam Trailway & Mt. Hope Rd • Rt 6 & Senior Center	35 min
7:50-8:00 PM	Overview of Jamboard Activity	10 min
Jamboard Activity		
8:00 – 8:45 PM	Jamboard Session <i>Facilitator- Jacob Thompson</i> • Use Jamboard or other visual facilitator tool to • Collect suggestions from community members – as specific and detailed as possible • VTC monitors comments from chats	45 min
8:45-9:00 PM	Return to plenary • Report back highlights – <i>all facilitators</i> • Next Steps and Closing Remarks – <i>David Drits</i>	Up to 15 – can open for additional questions if there is time.

FEEDBACK FROM PUBLIC PARTICIPATION IN ACTIVITIES

The following sections discuss resident participation patterns in the activities presented throughout the workshop.

Google Jamboards

The Jamboard activity gathered public input for potential improvements in the five key locations previously identified by the Town and for general streetscape aspirations of the city. During the Jamboard activity, facilitators collected verbal and written input via Zoom chat and through participants posting directly onto Google Jamboards (See Appendix A).

For this activity, the project team categorized each resident's comment into one theme. However, some comments could fall into more than one theme. Additionally, the identified themes are not exhaustive of all possible themes discussed; they are merely reference points for classification. The site-specific discussions led to the following findings:

Board #1: Mt. Hope & Putnam Trail

Public Commentary: The following are the summarized points of feedback for this site:

Requests

- Consider including turn signals for Mt. Hope Road; drivers get impatient making left turns.

Concerns

- The length of the crossing is too long for pedestrians
- Traffic turning onto Mt Hope Rd often don't stop or follow the right of way rules

Questions/ Comments

- Making the turns narrower is a great concept and would slow people down.

Board #2: Senior Center Connector Road

Public Commentary: The following are the summarized points of feedback for this site:

Requests

- Is it possible to connect the road to Baldwin Place Road to relieve traffic?

Concerns

- Would this plan conflict with septic areas?

Questions/ Comments

- Making a left turn onto Route 6 is dangerous; having an alternative exit is a great idea.

Board #3: Proposed Mahopac Trail

Public Commentary: The following are the summarized points of feedback for this site:

Requests

- Eventually, a bridge that goes over Route 6. There was an acknowledgment that this proposal is the shorter-term alternative to the bridge.

Feedback

- No turns on red currently at the intersection

Board #4: Downtown Accessibility

Public Commentary: The following are the summarized points of feedback for this site:

Requests

- Bike parking downtown and, specifically, at the bottom of the ramp
- Widened sidewalks for outdoor dining
- Parking for residents if building housing above retail
- Additional parking for outdoor dining
- Trolley service could help to spark revitalization (Cold Spring as an inspiration)
- A drop-off area to reduce traffic and parking issues
- Plan for all modes now and do it right from the start
- Plan for an increase in density with future zoning
- Connect visitors from farther out of the central business district with Putnam Area Rapid Transit
- Plan for the summer influx of visitors

Concerns

- Purchase of land may be required to make this happen
- Equity concerns over older residents walking safely
- The changes in seasons will greatly impact the parking needs and outdoor dining demand
- If people stay longer in these businesses or services, then there will be less turnover in parking
- The Town needs to work on an infrastructure plan for the future. Currently, the infrastructure is falling behind and is unable to support itself
- There is a new restaurant opening in the area. It is important to make sure there is enough parking
- If people can't park in front of where they want to go, they will just go to a different town that can provide that

- Accessing the downtown as a cyclist is pretty challenging
- There is a lot of traffic congestion from the light
- This is a rural area that is most often traveled to by car, and so parking is necessary to encourage surrounding residents to visit the downtown and visit businesses

Questions/ Comments

- Plan pending with DOT to widen sidewalks and add sidewalk café, removing 14 parking spaces in the process.
- What are the current parking needs? At this point, it may be closer to 145
- An increase in parking will also increase safety as it could potentially avoid drivers circling around
- Parking is a municipal issue, not to be provided by private developers and businesses.
- Additional parking may be needed if biking increases
- A connection (like the one proposed) between the bike trail and downtown businesses would be a “big plus” and “fantastic.”
- Keep count of trail users right now in order to compare in the future.

Board # 5: Roundabout or turnaround on 6N if made one-way

Public Commentary: The following are the summarized points of feedback for this site:

Requests

- Move the roundabout to the intersection with 6N and 6

Concerns

- The various entries onto the road may make this a challenging proposal
- Will a roundabout fit here?
- The high level of traffic may make this difficult
- Sycamore Road is privately owned

Questions/Comments

- This was the plan with a previous mayor in 1996
- The roundabout at Route 6N and Sycamore Road and Route 6N and Cherry Lane
- If 6 was one way towards the bank, when you get to the intersection with Sycamore, the traffic could go back in a circle to get back onto 6

SUMMARY OF RESULTS

Workshop participants were generally positive and enthusiastic about the Town's proposed infrastructure improvements and the solutions presented by the project team. The three major themes discussed across all sites included infrastructure development, accessibility, and safety. Many participants were appreciative of solutions that improved accessibility for several transportation modes like walking, cycling, and driving. Residents agreed that calming traffic measures, improved streetscaping, installation of connecting trails, and additional parking could help revitalize the downtown and ensure a variety of individuals could utilize it.

Questions about feasibility, negative consequences, and resident behavior (pedestrians, cyclists, and motorists) were presented by residents and noted by the Town stakeholders, who will take steps to consider these concerns and feedback to their plans.

Major Themes Identified in Jamboard Discussions

Themes	Number of comments					Theme totals
	Mt. Hope & Putnam Trail	Senior Center Connector Road	Proposed Mahopac Trail	Downtown Accessibility	Roundabout or turnaround on 6N	
Design	1					1
Location		1			2	3
Auto driver behavior	2		1	1		4
Visitor volume				6	2	8
Jurisdiction		1		2	2	5
Access/Connectivity			1	6		7
Safety	1	1		2		4
Infrastructure				10		10
Comments per board	4	3	2	27	6	43
Total comments						

Source: Adapted from Jamboard Data, See Appendix B.

RECOMMENDATIONS AND NEXT STEPS

PROJECT PRIORITIES AND RECOMMENDATIONS

The Town of Carmel’s initial concerns were mainly tied to expanding parking options and seeking ways to leverage the Putnam Trail as a practical transportation option. However, through meetings with town officials, this project expanded to include suggestions for increasing safety for all road users at key intersections, expanding transportation options into downtown Mahopac, and improving pedestrian infrastructure to create a vibrant central business district.

Public feedback from the workshop helped to identify top concerns such traffic reduction, improving and widening sidewalks, and ensuring adequate parking to accommodate residents, seasonal visitors, and people visiting from nearby rural areas. While the Town of Carmel is in a car-centric region, there are opportunities to promote and encourage other modes of transportation. Based on discussions at the workshop, both the public and decision-makers are open to the proposed recommendations that include policy and project-specific solutions for areas of concern identified by the Town of Carmel and public feedback.

Considering public input, impact, and project feasibility, the Hamlet of Mahopac should seek funding for the realization of the following improvements to enhance Downtown:

1. Draft a Complete Streets Plan
2. Connect the existing Putnam Trail to Downtown
3. Consolidate parking into and create a municipal parking lot
4. Improve intersections to increase traffic safety
5. Connector road at senior center to divert traffic from unsignalized intersection
6. Connect Mahopac Trail to the proposed trail (behind the senior center)
7. Improve service of Putnam Area Rapid Transit to Downtown

Draft a Complete Streets Plan

In 2012, New York State’s Complete Streets Act was signed into law, requiring transportation projects to “consider people of all ages and abilities and all appropriate forms of transportation.” As such, the Town of Carmel should consider undertaking a municipal Complete Streets Plan as a tool to guide growth and road improvements.

Complete Streets are very context-dependent, meaning that a “complete street” in a downtown like the Hamlet of Mahopac would look different than a “complete street” in a rural farming community, even within the same state. A town-specific Complete Streets Plan would lay out all the requirements for any new improvements in the public right-of-way based upon goals explicitly stated by the town, and they would reflect the existing conditions and the community's

ideal future growth. By formalizing these goals, the approval process for projects that align with the Town's goals can require less time to review and obtain approval. Furthermore, specific projects that encourage a mix of transportation options will have a wider array of funding sources available to them or might have the chance to experiment with projects not allowed under traditional roadway projects.

Connect the existing Putnam Trail to Downtown

The Putnam Trail is a 12-mile trail that runs from Mahopac to Brewster. The section in Mahopac runs mainly parallel to US 6, and it passes by several residential areas, including densely populated apartment subdivisions, shopping centers, and adjacent to downtown Mahopac. Unfortunately, it does not have a formal access/exit to downtown; instead, there are a few desired trails and locations where people have made a path into town. The ideal access point to downtown, as noted during the workshop, would be at the same location as the Town's preferred location for a municipal lot. Its location in the municipal lot would also make it easier to include bicycle parking and other amenities, such as a bicycle repair station for trail users to ensure their rides are safe for travel.

The main obstacle in this location for an access point to the trail is the elevation difference; the Putnam trail is approximately 12 feet above the rest of the downtown. Notwithstanding the topographic differences, the unique shape of the adjacent lot, which is the proposed municipal parking lot, would leave sufficient space for an accessible on/off ramp to be constructed and used by bicyclists and pedestrians of all ages and abilities. Figure 11 is an illustration shared with the community during the May 16 workshop. The green line indicates the ideal location of a trail access point to downtown Mahopac. However, constructing the ramp at this location is contingent upon the Town acquiring the highlighted lot to create a municipal parking lot.

Create a municipal parking lot

In 2018, the Town conducted a parking study to determine the state of existing parking in downtown Mahopac. The study found that the town currently does not have enough parking spaces to accommodate surrounding businesses and residences. The recent reconfiguration of US 6 further reduced available parking, leaving few on-street spaces. All off-street parking is currently privately owned. In the parking study, three potential lots were identified and analyzed for suitability.

The town determined that the proposed lot in Figure 11 is the ideal candidate for additional parking capacity due to its size and location. This particular lot is not well-suited for other commercial uses and its location makes it less visible and more aesthetically pleasing than other candidate locations. It is also the closest point to the Putnam Trail, though the elevation difference would require building a suitable ramp to connect the two (as recommended above). However, this ramp would create a multimodal node for downtown Mahopac and increase alternative transportation options by turning the Putnam Trail into a useful corridor in the regional network. To accommodate trail users, the proposed municipal lot should include adequate bicycle parking facilities, both in capacity and security. Furthermore, the parking study cited the dimensions of this lot as an opportunity for the Town to explore incorporating green infrastructure into its designs. Such a space can also be used to host some community events as



Figure 11. Proposed municipal lot in downtown Mahopac with pedestrian improvements.



Prior to Complete Streets updates, pedestrians had to cross a four lane road (two traveling lanes and two parking lanes). After improvements were made, the crossing distance was reduced to the length of just the two traveling lanes, and a sign was put in place to make drivers more aware of the crosswalk.

Figure 12. A crosswalk improvement from the New York State Complete Streets Report, 2014.

Improve intersections to increase traffic safety

Downtown Mahopac could also improve intersections throughout the hamlet to prioritize bicycle and pedestrian safety, create a more welcoming environment, and encourage people to explore other modes of transportation besides vehicles. The current configuration of several intersections caters almost exclusively to cars while neglecting the needs of other road users. Long crossings can be improved by installing bump-outs and pedestrian islands, where necessary. Curb bump-outs or extensions also help narrow the turn radius, forcing cars to slow down when turning, and they add the ability to incorporate green infrastructure into the streetscape.

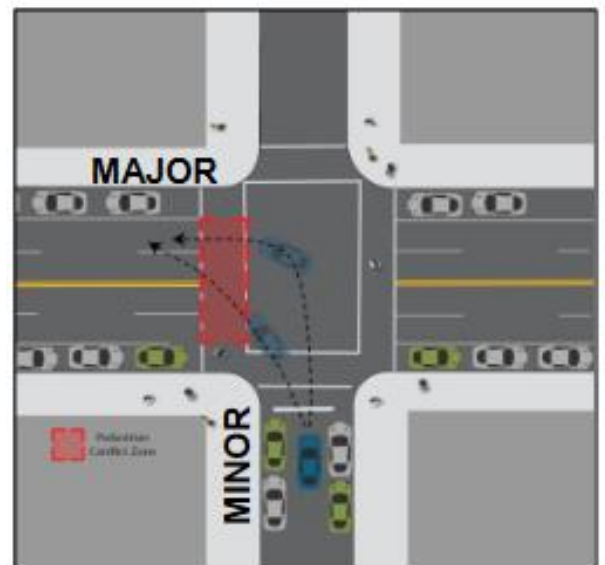


Figure 13. Left turn radii diagram from the NYC Left Turn Pedestrian and Bicycle Crash Study

Town officials identified two intersections during the preparation for the workshop, and the crash data map confirmed that those are both crash hot spots. One of those intersections is the intersection of the Putnam Trail, Mt Hope Road, and US 6, while the other is the entrance to the William Koehler Senior Center on US 6. The biggest concern voiced by residents is that left-turning traffic gets impatient while waiting to turn, which leads to drivers accelerating rapidly once there's an opening. For this intersection, most turn radii can be shortened, forcing traffic to slow down to make a tighter turn. Figure 13 shows how, by installing physical barriers, left-turning vehicles must make a tighter turn, forcing them to slow down, making bicyclists and pedestrians easier to spot. Additionally, in place of a pedestrian island or other median, the Town can explore other options, such as bollards, to prevent left-turning vehicles from taking excessively wide turns, thus lowering their speed.

Install connector road at senior center to divert traffic from unsignalized intersection

The William Koehler Senior Center's driveway lets out onto Route 6. There is only a stop sign at the exit (for people exiting the Senior Center), while traffic along Route 6 does not stop at all. Several workshop attendees agreed that making the left-hand turn onto Route 6 is dangerous at this location, as drivers have limited visibility due to the topography of the road: traffic heading southwest is moving downhill and exiting a blind turn, while traffic heading northeast is coming uphill and is also on a bend, making it difficult to see approaching vehicles. The Town has been discussing the idea of diverting the driveway of the senior center to run parallel to Route 6 behind the building and connecting to the parking lot of the Hudson Valley Credit Union and the PCBS Bank. From here, vehicles from the senior center would use the existing entrance road, which connects to Route 6 at a signalized intersection, as seen in Figure 14.

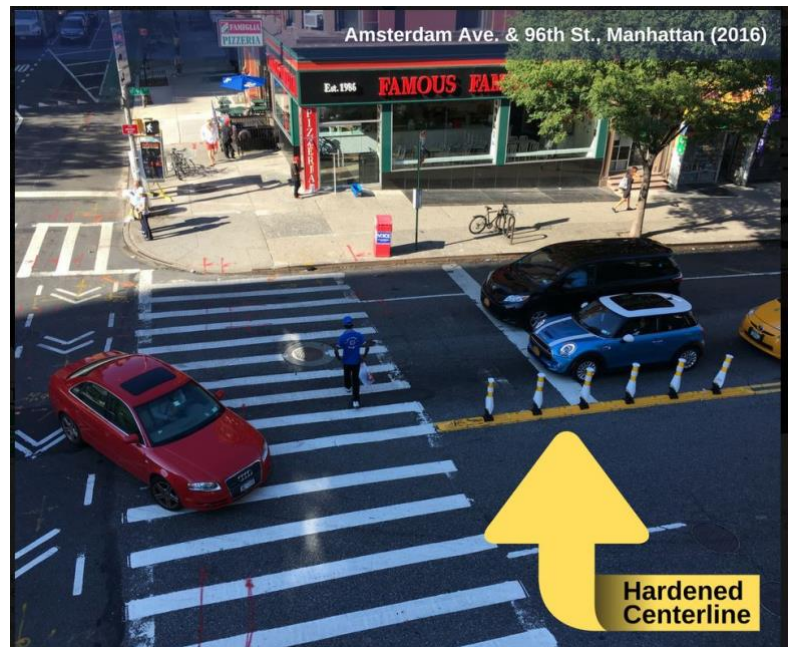


Figure 14. One solution to slow left-turning vehicles is to harden the centerline with physical barriers. Source: NYC Left Turn Pedestrian and Bicycle Crash Study.

Connect Putnam Trail to the proposed trail (behind the senior center)

The Putnam Trail can serve to connect residents at the Senior Center, Mahopac High School, and the proposed residential developments near the high school. There is a planned trail to run along the opposite side of US 6 as the Putnam Trail, and the two can be connected by using the existing intersection of US 6 and the entrance to the Putnam Square Shopping Center as a short-term solution. For a longer-term solution, Town officials mentioned past plans to elevate and build a bridge connecting the trail to the western side of US 6. This proposal, illustrated in Figure 14, was well-received by the workshop attendees, as it provides a safe connection for trail users while taking advantage of the existing built environment.

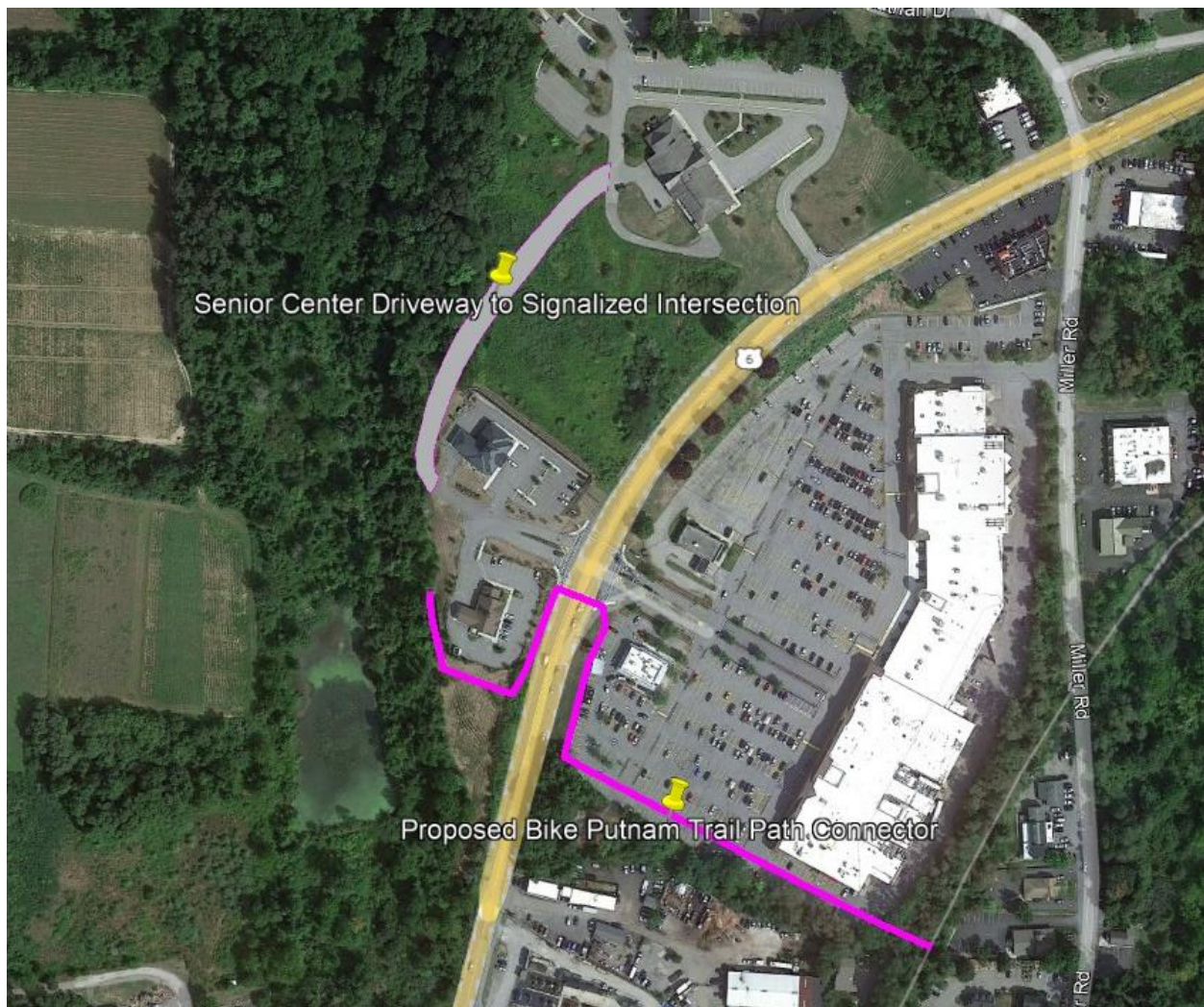


Figure 15. Proposed connector road and Putnam Trailway connector path presented at the workshop, which was met with approval from residents.

Improve service of Putnam Area Rapid Transit to Downtown

Finally, residents and business owners voiced their desire to see an improvement to the Putnam Area Rapid Transit, as it can help connect visitors to downtown Mahopac from farther away. In conjunction with the Putnam County Planning Department, the Town of Carmel can assess the current state of the public transportation system and work towards identifying ways to plan for the Town's needs. This could include exploring options to offer seasonal visitors alternatives to driving or better ways of connecting residents to job centers, train stations, or park-and-ride facilities to decrease congestion in the downtown.



Photo of Upper Front Street in 2000 (before redesign) and 2013 (after completion of redesign). Prior to the redesign, bus passengers were required to wait in a location on the side of the road with no sidewalk access and no shelter. After the reconstruction, passengers are now able to access a new bus shelter by sidewalk, and buses can pull into a separate lane to pick up passengers. A bicycle lane has also been added to this section of Upper Front Street.

Figure 16. NYSDOT Complete Streets improvement in Binghamton.

In addition to promoting the availability of the Putnam Rapid Area Transit routes and expanding the fleet and schedule, the Town of Carmel can work with the County to improve the quality of the bus stops by adding amenities such as seating, clear signage, and a bus shelter to provide respite from inclement weather. Figure 15 shows one such example as part of NYSDOT's Complete Streets improvements. The “before” image shows a bus stop with simply a bench on a patch of muddy grass with no clear pedestrian path between the road, the waiting area, and the adjacent parking lot or street. The “after” image shows the improved bus stop with a covered seating area that is easily accessible via the sidewalk. The bus also has a curbside pullout stop, which allows the bus to stop without impeding traffic.

FUNDING OPPORTUNITIES

The Town of Carmel can apply for multiple federal aid assistance programs for improvements they seek to implement throughout the municipality. The most common federally funded improvement program used by local municipalities to correct and beautify a corridor traveled on by pedestrians and bicyclists is the Transportation Alternatives Program (TAP). TAP provides funding for programs and projects that include:

- on/off-road pedestrian and bicycle facilities
- infrastructure projects for improving non-driver access to public transportation and enhanced mobility
- community improvement activities and environmental mitigation
- recreational trail program projects
- safe routes to school projects
- projects for planning, designing, or constructing boulevards and,
- other roadways primarily in the right-of-way of former Interstate System routes or other divided highways.

To apply for TAP, the Town will have to submit an application that follows, very carefully, the program requirements. The following are essential requirements that the Town will need to meet to apply for the program:

- Projects must have an eligible Sponsor.
- Sponsors must provide a minimum of 20 percent local match and first-instance project costs.
- Projects must fit into one of the selected program eligibility categories and meet the specific program requirements detailed in NYSDOT's Application Process ([Appendix B](#)).
- Project costs must meet the Minimum/Maximum Award criteria.
- Completed Applications must be submitted through Grants Gateway by the deadline.
- Sponsors must attend the Informational Workshop.
- The project must relate to surface transportation and cannot be exclusively recreational.

The state's criteria to measure and rank projects are listed in the table below. The Town's application will need to gain as many points as possible to compete against other projects in the state.

TAP PROJECT EVALUATION CRITERIA

Category	Evaluation Criteria	Available Points
Project Benefits	• Project benefits and proposed solutions • Innovation and creativity • Improves safety	20
Project Alignment	• Alignment with the TAP program and other surface transportation plans, projects, and systems	20
Essential Project Management Elements	• Schedule • Budget • Right-of-Way assurance • Match Assurance and ability to deliver the project	60
Total Points:		100
Sponsor Submitted Application for Pre-review Bonus Points:		5
NYS Professional Engineer Project Review:		Bonus 5

NYSDOT is holding a TAP solicitation, with the application deadline on January 9, 2024. If the Town wishes to apply, it should visit the [NYSDOT TAP and CMAQ page](#).

Besides TAP, the Town can seek federal aid from various formula and discretionary federal fund sources. The Federal Highway Administration put together a comprehensive listing of federal aid programs for improving pedestrian and bicycle facilities, included in Appendix B. The listing identifies criteria, timing, and eligibility that project sponsors must consider when applying for funding. They have also compiled an upcoming schedule with [Key Notices of Funding Opportunities](#) and their deadlines. Lastly, they have organized a [checklist](#) to help local communities prepare themselves for soliciting funds through the federal process, which the Town of Carmel should use when developing their project.

APPENDICES

APPENDIX A: JAMBOARD DOCUMENTATION AND RESULTS

Turning traffic on Mt.Hope often don't stop or do not follow right of way rules.

The length of the crossing is a problem too. It's a long walk.

They get impatient making left turns; turn signals for Mt. Hope Rd could help

This is a great concept and would make people slow down.

Mt Hope & Putnam Trail



Great idea

Proposed Rt 6 to Baldwin Rd - County Road

Potential additional road connecting to Baldwin to relieve traffic

would not conflict with the septic area?

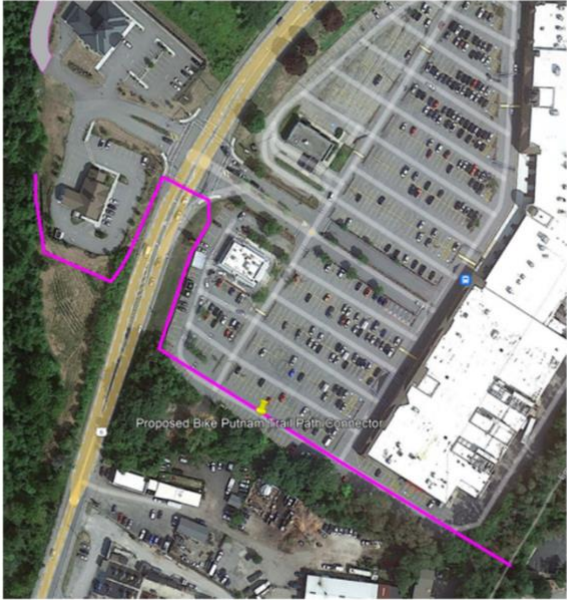
Senior Center Connector Road



Proposed Mahopac Trail

I believe the idea was to connect the Putnam Trailway to Baldwin Place Rd along with sidewalks.

No turns on red currently at intersection



Proposed Bike Putnam Trail Path connector

There was discussion of a bridge at one time.

Bridge could be a longer term solution

Discussion of a bridge over route 6 - this is an alternative to this (short term connector)

Downtown Accessibility

Plan pending with DOT about widening sidewalks to add sidewalks cafes. Removing 14 parking spaces

Equity concerns over older residents walking safely

Need parking for residential as well as businesses if we build above retail

Wider sidewalks

Additional parking for outdoor dining as well

Additional biking may increase parking needs as well

is a drop off area possible for reducing back up and parking issues?

connection from bike path to business would be a big plus

there is no accessibility from the trail to the business district. It would be fantastic to have that connection!

Plan for all modes now, new restaurant going in. Do it right from the start

Area near trail is underutilized from business/development view

Putnam Area Rapid Transit connect visitors from farther out to CBD



Proposed walkway breezeway cut through

Proposed Crosswalk connecting Putnam trail to downtown

Proposed ADA Accessible Ramp (connect trail users to downtown)

the town does not have the infrastructure to support itself. Falling behind on infrastructure. Need infrastructure plan for the future.

Trail plan/count of trail users currently. Project future users with improvements

Real challenge to access the downtown via bike

Additional infrastructure may help support additional influx by allowing people to travel in by bike

new restaurant opening; need to make sure there is enough parking to support new businesses coming

If people can't park in front of where they are going, they are going to go elsewhere

plan for increase in density with future zoning

May double parking for the downtown area

Rural area and people primarily take their cars and so we need the parking to satisfy businesses

the town does not have the infrastructure to support itself. Falling behind on infrastructure. Need infrastructure plan for the future.

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If people can't park in front of where they are going, they are going to go elsewhere

plan for increase in density with future zoning

May double parking for the downtown area

Rural area and people primarily take their cars and so we need the parking to satisfy businesses

I believe that we would add roundabouts at Route 6N and Sycamore Rd; and Route 6N and Cherry Lane

Roundabout/turnaround on 6N if made one-way

Sycamore Rd is privately owned

This was the plan with previous Mayor in ~1996



Could you move the roundabout to the intersection with 6N and 6

Challenge with the various entries onto the road

does a roundabout fit here?

Is 6 was one way towards the bank, when you get to the intersection with Sycamore, the traffic could go in a circle to get back onto 6.

with high level of traffic- may be very difficult

Pedestrian and Bicycle Funding Opportunities: U.S. Department of Transportation Transit, Safety, and Highway Funds

September 9, 2022

This table indicates potential eligibility for pedestrian and bicycle activities and projects under U.S. Department of Transportation surface transportation funding programs. Activities and projects need to meet program eligibility requirements. See notes and basic program requirements below, with links to program information. Project sponsors should integrate the safety, accessibility, equity, and convenience of walking and bicycling into surface transportation projects.

	Pedestrian and Bicycle Funding Opportunities: U.S. Department of Transportation Transit, Safety, and Highway Funds																												
	Key: \$ = Activity may be eligible. Restrictions may apply, see program notes and guidance. ~\$ = Eligible, but not competitive unless part of a larger project.																												
	OST Programs							Federal Transit				NHTSA		Federal Highway Administration															
Activity or Project Type	RAISE	INFRA	RCP	SS4A	Thrive	RRIF	TIFIA	FTA	ATI	TOD	AoPP	402	405	BFP BIP BRR	CRP	CMAQ	HSIP	RHCP	NHPP	PRO TECT	STBG	TA	RTP	SRTS	PLAN	NSBP	FLTTP	TTP	TTPSF
Access enhancements to public transportation (benches, bus pads)	\$	\$	\$	\$		~\$	~\$	\$	\$		~\$				\$	\$			\$	\$	\$	\$				\$	\$	\$	
Americans with Disabilities Act (ADA)/504 Self Evaluation / Transition Plan				\$	TA					\$	\$				\$						\$	\$	\$		\$		\$	\$	
Barrier removal for ADA compliance	\$	\$	\$	\$		~\$	~\$	\$	\$	~\$	~\$			\$	\$				\$	\$	\$	\$	\$	\$		\$	\$	\$	
Bicycle plans			~\$	\$				\$		\$	\$				\$					\$	\$	\$		\$	\$		\$	\$	\$
Bicycle helmets (project or training related)												\$									\$	SSRTS		\$				\$	
Bicycle helmets (safety promotion)																					\$	SSRTS		\$				\$	
Bicycle lanes on road	~\$	~\$	\$	\$		~\$	~\$	\$	\$		~\$				\$	\$	\$	\$	\$	\$	\$	\$		\$			\$	\$	\$
Bicycle parking (see Bicycle Parking Solutions)	~\$	~\$	\$	\$		~\$	\$	\$	\$		~\$				\$	\$			\$		\$	\$	\$	\$		\$	\$	\$	
Bike racks on transit	~\$		\$	~\$			~\$	\$	\$		~\$				\$	\$					\$	\$					\$	\$	
Bicycle repair station (air pump, simple tools)	~\$		\$	~\$		~\$	~\$	\$	\$						\$						\$	\$					\$	\$	
Bicycle share (capital and equipment; not operations)	~\$	~\$	\$	~\$		~\$	~\$	\$	\$						\$	\$			\$		\$	\$					\$	\$	
Bicycle storage or service centers (example: at transit hubs)	~\$		\$	~\$		~\$	\$	\$	\$						\$	\$					\$	\$					\$	\$	
Bridges / overcrossings for pedestrians and/or bicyclists	\$	\$	\$	\$		~\$	~\$	\$	\$					\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$			\$	\$	\$
Bus shelters and benches	\$	\$	\$	~\$		~\$	~\$	\$	\$						\$	\$			\$	\$	\$	\$				\$	\$	\$	
Coordinator positions (State or local) (limits on CMAQ and STBG)				\$							\$					\$					\$	SSRTS		\$					\$
Community Capacity Building (develop organizational skills/processes)				\$	TA					\$	\$														\$			\$	
Crosswalks for pedestrians, pedestrian refuge islands (new or retrofit)	\$	\$	\$	\$		~\$	~\$	\$	\$						\$	~\$	\$	\$	\$	\$	\$	\$	\$	\$		\$	\$	\$	\$
Curb ramps	\$	\$	\$	\$		~\$	~\$	\$	\$					\$	\$	~\$	\$	\$	\$	\$	\$	\$	\$	\$		\$	\$	\$	\$
Counting equipment		\$	\$	\$			~\$	\$	\$									\$		\$		\$	\$	\$	\$	\$		\$	\$
Data collection and monitoring for pedestrians and/or bicyclists	\$	\$	\$	\$			~\$	\$	\$	\$	\$				\$			\$		\$		\$	\$	\$	\$	\$		\$	\$
Emergency and evacuation routes for pedestrians and/or bicyclists	\$	\$	\$	~\$			\$	\$	\$	~\$	~\$				\$				\$	\$	\$	\$	\$	\$			\$	\$	
Historic preservation (pedestrian and bicycle and transit facilities)	~\$		~\$	~\$		~\$	~\$	\$	\$		~\$				\$						\$	\$				\$	\$	\$	
Landscaping, streetscaping (pedestrian/bicycle route; transit access); related amenities (benches, water fountains); usually part of larger project	~\$	~\$	~\$	~\$		~\$	~\$	\$	\$	~\$	~\$				\$				~\$	\$	\$	\$					\$	\$	
Lighting (pedestrian and bicyclist scale associated with pedestrian/bicyclist project)	\$	\$	\$	\$		~\$	~\$	\$	\$		~\$				\$	~\$	\$	\$	\$	\$	\$	\$	\$	\$		\$	\$	\$	\$
Maps (for pedestrians and/or bicyclists)				\$				\$	\$	\$	~\$				\$	\$						\$	\$		\$	\$	\$		\$
Micromobility projects (including scooter share)	\$		\$	~\$		~\$	~\$				~\$				\$	\$						\$	\$					\$	\$
Paved shoulders for pedestrian and/or bicyclist use	\$	~\$	\$	\$		~\$	~\$							\$	\$	\$	\$	\$	\$	\$	\$	\$		\$		\$	\$	\$	\$
Pedestrian plans	\$	~\$	~\$	\$				\$		\$	\$				\$					\$	\$	\$		\$	\$		\$	\$	\$
Rail at-grade crossings	\$	\$	\$	~\$		\$	\$	\$	\$						\$			\$	\$	\$	\$	\$	\$	\$				\$	\$
Recreational trails	\$		\$	~\$			~\$													\$	\$	\$	\$				\$	\$	
Resilience Improvements for pedestrians and bicyclists	\$	\$	\$	~\$		~\$	~\$			\$	~\$			~\$	~\$	~\$			\$	\$	\$	\$	\$	\$			\$	\$	
Road Diets (pedestrian and bicycle portions)	\$	\$	\$	\$		~\$	\$								\$	\$	\$		\$	\$	\$	\$		\$				\$	\$

	Pedestrian and Bicycle Funding Opportunities: U.S. Department of Transportation Transit, Safety, and Highway Funds Key: \$ = Activity may be eligible. Restrictions may apply, see program notes and guidance. ~\$ = Eligible, but not competitive unless part of a larger project.																												
	OST Programs							Federal Transit				NHTSA		Federal Highway Administration															
Activity or Project Type	RAISE	INFRA	RCP	SS4A	Thrive	RRIF	TIFIA	FTA	ATI	TOD	AoPP	402	405	BFP BIP BRR	CRP	CMAQ	HSIP	RHCP	NHPP	PRO TECT	STBG	TA	RTP	SRTS	PLAN	NSBP	FLTTP	TTP	TTPSF
Road Safety Assessment for pedestrians and bicyclists			\$	\$	TA		~\$				~\$						\$	\$			\$	\$			\$		\$	\$	\$
Safety education and awareness activities and programs to inform pedestrians, bicyclists, and motorists on ped/bike traffic safety laws				\$							~\$	\$	\$				\$				\$SRTS	\$SRTS		\$	\$			\$	
Safety education positions				\$							~\$	\$									\$SRTS	\$SRTS		\$				\$	
Safety enforcement (including police patrols)				\$								\$	\$				\$				\$SRTS	\$SRTS		\$				\$	
Safety program technical assessment (for peds/bicyclists)			\$	~\$	TA						~\$	\$					\$				\$SRTS	\$SRTS		\$	\$		\$	\$	
Separated bicycle lanes	\$	\$	\$	\$		~\$	~\$	\$	\$		~\$			\$	\$	\$	\$	\$	\$	\$	\$	\$		\$		\$	\$	\$	\$
Shared use paths / transportation trails	\$	\$	\$	\$		~\$	~\$	\$	\$		~\$				\$	\$	\$	\$	\$	\$	\$	\$	\$	\$		\$	\$	\$	\$
Sidewalks (new or retrofit)	\$	\$	\$	\$		~\$	~\$	\$	\$	~\$	~\$			\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$		\$	\$	\$	\$
Signs, signals, signal improvements (incl accessible pedestrian signals) see note	\$	\$	\$	\$		~\$	~\$	\$	\$	~\$	~\$				\$	\$	\$	\$	\$	\$	\$	\$		\$		\$	\$	\$	\$
Signing for pedestrian or bicycle routes	\$	\$	\$	\$		~\$	~\$	\$	\$		~\$				\$	\$	\$		\$	\$	\$	\$		\$		\$	\$	\$	\$
Spot improvement programs (for pedestrian and bicycle facilities)	\$	\$		\$		~\$	~\$	\$			~\$				\$		\$	\$	\$		\$	\$	\$	\$			\$	\$	\$
Stormwater impacts related to pedestrian and bicycle project impacts	\$	\$	\$	~\$		~\$	~\$	\$	\$								\$	\$	\$	\$	\$	\$	\$	\$			\$	\$	\$
Traffic calming	\$	\$	\$	\$		~\$	~\$	\$							\$		\$		\$	\$	\$	\$		\$			\$	\$	\$
Trail bridges	\$	\$	\$	~\$		~\$	\$								\$	~\$	\$	\$	\$	\$	\$	\$	\$	\$			\$	\$	\$
Trail construction and maintenance equipment				~\$		~\$	~\$								\$						\$	\$	\$				~\$	~\$	~\$
Trail/highway crossings and intersections	\$	\$	\$	\$		~\$	~\$							\$	\$	~\$	\$	\$	\$	\$	\$	\$	\$	\$		\$	\$	\$	\$
Trailside/trailhead facilities (restrooms, water, not general park amenities)	~\$					~\$	~\$								~\$						\$	\$	\$			\$	\$	\$	
Training				\$	TA						~\$	\$				\$	\$				\$	\$	\$	\$	\$			\$	
Training for law enforcement on ped/bicyclist safety laws				~\$								\$	\$			~\$	\$				\$SRTS	\$SRTS		\$				\$	
Tunnels / underpasses for pedestrians and/or bicyclists	\$	\$	\$	\$		\$	\$	\$	\$						\$	\$	\$	\$	\$	\$	\$	\$	\$	\$			\$	\$	\$
Vulnerable Road User Safety Assessment			\$	\$	TA												\$				\$	\$		\$	\$			\$	\$

Abbreviations

ADA/504: Americans with Disabilities Act of 1990 / Section 504 of the Rehabilitation Act of 1973

[RAISE](#): Rebuilding American Infrastructure with Sustainability and Equity

[INFRA](#): Infrastructure for Rebuilding America Discretionary Grant Program

[RCP](#): Reconnecting Communities Pilot Program

[SS4A](#): Safe Streets and Roads for All

[Thrive](#): Thriving Communities Initiative (TA: Technical Assistance)

[RRIF](#): Railroad Rehabilitation and Improvement Financing (loans)

[TIFIA](#): Transportation Infrastructure Finance and Innovation Act (loans)

[FTA](#): Federal Transit Administration Capital Funds

[ATI](#): Associated Transit Improvement (1% set-aside of FTA)

[TOD](#): Transit-Oriented Development

[AoPP](#): Areas of Persistent Poverty Program

NHTSA [402](#): National Highway Traffic Safety Administration State and Community Highway Safety Grant Program

NHTSA [405](#): National Highway Traffic Safety Administration National Priority Safety Programs (Nonmotorized safety)

[BFP](#): Bridge Formula Program; [BIP](#): Bridge Investment Program; [BRR](#): Bridge Replacement and Rehabilitation Program

[CRP](#): Carbon Reduction Program

[CMAQ](#): Congestion Mitigation and Air Quality Improvement Program

[HSIP](#): Highway Safety Improvement Program

[RHCP](#): Railway-Highway Crossings (Section 130) Program

[NHPP](#): National Highway Performance Program

[PROTECT](#): Promoting Resilient Operations for Transformative, Efficient, and Cost Saving Transportation

[STBG](#): Surface Transportation Block Grant Program

[TA](#): Transportation Alternatives Set-Aside (formerly Transportation Alternatives Program, Transportation Enhancements)

[RTP](#): Recreational Trails Program

[SRTS](#): Safe Routes to School Program (and related activities)

[PLAN](#): Statewide Planning and Research (SPR) or Metropolitan Planning funds

[NSBP](#): National Scenic Byways Program

[FLTTP](#): Federal Lands and Tribal Transportation Programs: [Federal Lands Access Program](#), [Federal Lands Transportation Program](#), [Tribal Transportation Program](#), [Federal Lands Planning Program](#) and related programs for Federal and Tribal lands such as the [Nationally Significant Federal Lands and Tribal Projects](#) program.

[TTP](#): Tribal Transportation Program

[TTPSF](#): Tribal Transportation Program Safety Fund

Cross-cutting notes

This table indicates potential eligibility for pedestrian, bicycle, and micromobility activities and projects under U.S. Department of Transportation surface transportation funding programs. Activities and projects must meet program eligibility requirements. See notes and links to program information below. Although the primary focus of this table is stand-alone activities and projects, programs also fund pedestrian and bicycle facilities as part of larger projects. Project sponsors are encouraged to consider [Complete Streets](#) and Networks that routinely integrate the safety, accessibility, equity, and convenience of walking and bicycling into surface transportation projects. In these instances, the Federal-aid eligibility of the pedestrian and bicycle elements are considered under the eligibility criteria applicable to the larger highway project. Pedestrian and bicycle activities also may be characterized as environmental mitigation for larger highway projects, especially in response to impacts to a Section 4(f) property or work zone safety, mobility, and accessibility impacts on bicyclists and pedestrians.

- See [FHWA Bicycle and Pedestrian Planning, Program, and Project Development](#) (Guidance)
- Bicycle Project Purpose: 23 U.S.C. 217(i) requires that bicycle facilities “be principally for transportation, rather than recreation, purposes”. However, 23 U.S.C. 133(b)(7) and 133(h) authorize recreational trails under [STBG](#) and the [TA Set-Aside](#), therefore, 23 U.S.C. 217(i) does not apply to trail projects (including for bicycle use) using [STBG](#) or [TA Set-Aside](#) funds. Section 217(i) applies to bicycle facilities other than trail-related projects, and section 217(i) applies to bicycle facilities using other programs ([NHPP](#), [HSIP](#), [CMAQ](#)). The transportation requirement under section 217(i) only applies to bicycle projects, not to any other trail use or transportation mode.
- Signs, signals, signal improvements includes ensuring accessibility for persons with disabilities. See [Accessible Pedestrian Signals](#). See also [Proven Safety Countermeasures](#), such as [Crosswalk Visibility Enhancements](#), [Leading Pedestrian Interval](#) signals, [Pedestrian Hybrid Beacons](#), and [Rectangular Rapid Flashing Beacons](#).
- Occasional DOT or agency incentive grants may be available for specific research or technical assistance purposes.
- Aspects of DOT initiatives may be eligible as individual projects. Activities above may benefit safe, comfortable, multimodal networks; environmental justice; and equity.
- The [DOT Navigator](#) is a resource to help communities understand the best ways to apply for grants, and to plan for and deliver transformative infrastructure projects and services.
- FHWA’s [Policy on Using Bipartisan Infrastructure Law Resources to Build a Better America](#).
- FHWA Links to [Technical Assistance and Local Support](#).

Program-specific notes

Federal-aid and other DOT funding programs have specific requirements that projects must meet, and eligibility must be determined on a case-by-case basis. See links to program guidance for more information.

- [RAISE](#) (Infrastructure Investment and Jobs Act (Pub. L. 117-58) (IIJA), also known as the Bipartisan Infrastructure Law (BIL), § 21202): Funds capital and planning grants.
- [INFRA](#) (IIJA § 11110): For projects that improve safety, generate economic benefits, reduce congestion, enhance resiliency, and hold the greatest promise to eliminate freight bottlenecks and improve critical freight movements.
- [RCP](#) (IIJA § 11509 and div. J, title VIII, Highway Infrastructure Programs, para. (7)): See [RCP Program Notice of Funding Opportunity](#) for full details. Planning grants and Capital Construction Grants must relate to a transportation facility that creates a barrier to community connectivity.
- [SS4A](#) (IIJA § 24112): Discretionary program funds regional, local, and Tribal initiatives through grants to prevent roadway deaths and serious injuries. Projects must be identified in a comprehensive safety action plan (§ 24112(a)(3)).
- [Thrive](#) (Department of Transportation Appropriations Act, 2022 (Pub. L. 117-103, div. L, title I): Technical assistance, planning, and capacity-building support in selected communities.
- [RRIF](#) (Chapter 224 of title 49 U.S.C.): Program offers direct loans and loan guarantees for capital projects related to rail facilities, stations, or crossings. Pedestrian and bicycle infrastructure components of “economic development” projects located within ½-mile of qualifying rail stations may be eligible. May be combined with other grant sources.
- [TIFIA](#) (Chapter 6 of title 23 U.S.C.): Program offers secured loans, loan guarantees, or standby lines of credit for capital projects. Minimum total project size is \$10 million; multiple surface transportation projects may be bundled to meet cost threshold, under the condition that all projects have a common repayment pledge. May be combined with other grant sources, subject to total Federal assistance limitations.
- [FTA](#) / [ATI](#) (49 U.S.C. 5307): Multimodal projects funded with FTA transit funds must provide access to transit. See [Bicycles and Transit](#), [Flex Funding for Transit Access](#), the FTA [Final Policy Statement on the Eligibility of Pedestrian and Bicycle Improvements Under Federal Transit Law](#), and [FTA Program & Bicycle Related Funding Opportunities](#).
 - Bicycle infrastructure plans and projects must be within a 3-mile radius of a transit stop or station. If more than 3 miles, within a distance that people could be expected to safely and conveniently bike to the particular stop or station.
 - Pedestrian infrastructure plans and projects must be within a ½ mile radius of a transit stop or station. If more than ½ mile, within a distance that people could be expected to safely and conveniently walk to the particular stop or station.
 - FTA funds cannot be used to purchase bicycles for bike share systems.
- [FTA TOD](#): Provides planning grants to support community efforts to improve safe access to public transportation for pedestrians and cyclists. The grants help organizations plan for transportation projects that connect communities and improve access to transit and affordable housing, not for capital purchases.
- [FTA AoPP](#) (Further Consolidated Appropriations Act, 2020 (Pub. L. 116-94); Consolidated Appropriations Act, 2021 (Pub. L. 116-260)): Promotes multimodal planning, engineering, and technical studies, or financial planning to improve transit services in areas experiencing long-term economic distress, not for capital purchases.
- NHTSA [402](#) (23 U.S.C. 402): Project activity must be included in the State’s Highway Safety Plan. Contact the [State Highway Safety Office](#) for details.
- NHTSA [405](#) (23 U.S.C. 405): Funds are subject to eligibility, application, and award. Project activity must be included in the State’s Highway Safety Plan. Contact the [State Highway Safety Office](#) for details. The [Bipartisan Infrastructure Law](#) expanded the eligible use of funds for a Section 405 Nonmotorized Safety grant beginning in FY 2024; however, for FY 2023 grants, FAST Act eligible uses remain in place.
- [BFP](#), (IIJA, Div. J, title VIII, para. (1)), [BIP](#) (23 U.S.C. 124), [BRR](#) (Department of Transportation Appropriations Act, 2022): For specific highway bridge projects and highway bridge projects that will replace or rehabilitate a bridge must consider pedestrian and bicycle access as part of the project and costs related to their inclusion are eligible under these programs.
- [CRP](#) (23 U.S.C. 175): Projects should support the reduction of carbon dioxide emissions from on-road highway sources.

- [CMAQ](#) (23 U.S.C. 149): Projects must demonstrate emissions reduction and benefit air quality. See the CMAQ guidance at www.fhwa.dot.gov/environment/air_quality/cmaq/ for a list of projects that may be eligible for CMAQ funds. CMAQ funds may be used for shared use paths, but not for trails that are primarily for recreational use.
- [HSIP](#) (23 U.S.C. 148): Projects must be consistent with a State's [Strategic Highway Safety Plan](#) and (1) correct or improve a hazardous road location or feature, or (2) address a highway safety problem. Certain non-infrastructure safety projects can also be funded using HSIP funds as specified safety projects.
- [RHCP](#) (23 U.S.C. 130): Projects at all public railroad crossings including roadways, bike trails, and pedestrian paths.
- [NHPP](#) (23 U.S.C. 119): Projects must benefit National Highway System (NHS) corridors and must be located on land adjacent to any highway on the National Highway System (23 U.S.C. 217(b)).
- [PROTECT](#) (23 U.S.C. 176): Funds can only be used for activities that are primarily for the purpose of resilience or inherently resilience related. With certain exceptions, the focus must be on supporting the incremental cost of making assets more resilient.
- [STBG](#) (23 U.S.C. 133) and [TA Set-Aside](#) (23 U.S.C. 133(h)): Activities marked "\$SRTS" means eligible only as an SRTS project benefiting schools for kindergarten through 12th grade. Bicycle transportation nonconstruction projects related to safe bicycle use are eligible under STBG, but not under TA (23 U.S.C. 217(a)). There is broad eligibility for projects under 23 U.S.C. 206, 208, and 217.
- [RTP](#) (23 U.S.C. 206): Projects for trails and trailside and trailhead facilities for any recreational trail use. RTP projects are eligible under TA Set-Aside and STBG.
- [SRTS](#) (23 U.S.C. 208): Projects for any SRTS activity. FY 2012 was the last year for dedicated - funds, but funds are available until expended. SRTS projects are eligible under TA Set-Aside and STBG.
- [PLAN](#) (23 U.S.C. 134 and 135): Funds must be used for planning purposes, for example: Maps: System maps and GIS; Safety education and awareness: for transportation safety planning; Safety program technical assessment: for transportation safety planning; Training: bicycle and pedestrian system planning training.
- [NSBP](#) (23 U.S.C. 162): Discretionary program subject to annual appropriations. Projects must directly benefit and be close to a designated scenic byway.
- [FLTTP](#) (23 U.S.C. 201-204): Projects must provide access to or within Federal or tribal lands. Programs include: Federal Lands and Tribal Transportation Programs ([Federal Lands Access Program](#), [Federal Lands Transportation Program](#), [Federal Lands Planning Program](#)) and related programs for Federal and Tribal lands such as the [Nationally Significant Federal Lands and Tribal Projects](#) (NSFLTTP) program.
 - [Federal Lands Transportation Program](#) (23 U.S.C. 203): For Federal agencies for projects that provide access within Federal lands.
 - [Federal Lands Access Program](#) (FLAP) (23 U.S.C. 204): For State and local entities for projects that provide access to or within Federal or tribal lands.
- [TTP](#) (23 U.S.C. 202): For federally-recognized tribal governments for projects within tribal boundaries and public roads that access tribal lands.
- [TTPSF](#) (23 U.S.C. 202(e)(1) and 23 U.S.C. 148(a)(4)): Grants available to [federally recognized Indian tribes](#) through a competitive, discretionary program to plan and implement transportation safety projects.