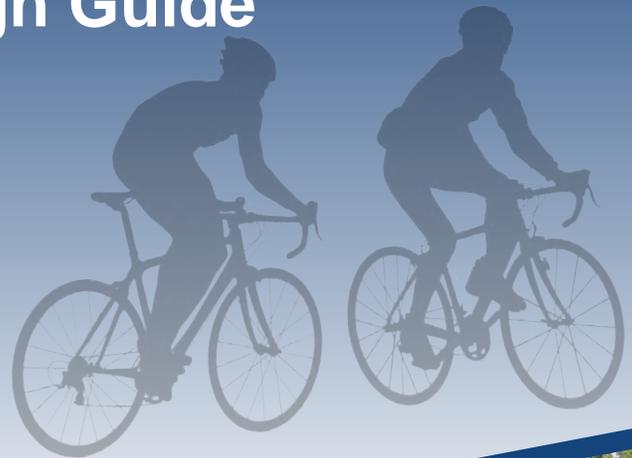


Pennsylvania Route 6 Bicycle Master Plan Design Guide

*Section 1: Ohio/Pennsylvania Border
to McKean/Potter County Line*

Executive Summary



Tom Wolf
Governor

Leslie S. Richards
Secretary of Transportation

Toby Fauver
Deputy Secretary of
Multimodal Transportation

ACKNOWLEDGEMENTS

PennDOT gratefully acknowledges the assistance and contributions of the many individuals and organizations to develop this Pennsylvania Route 6 Master Plan Design Guide. Many sincere thanks are given to the following project partners.

Municipal Partners

Conneaut Lake Borough
City of Corry
Edinboro Borough
Kane Borough
Union City Borough
Youngsville Borough

County Partners

Crawford County
Elk County
Erie County
McKean County
Warren County

State Partners

PA Department of Conservation
and Natural Resources
PA Department of Community
and Economic Development

Regional Partners

North Central Planning & Development Commission
Northwest Planning Commission
Emerge 2040
Erie Metropolitan Planning Organization

Public-Private Stakeholders

Allegheny National Forest Visitors Bureau
Bike Erie
Erie Arts & Culture
Pennsylvania Route 6 Alliance
Visit Crawford
Visit Erie
YMCA of Greater Erie

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Courtesy of the PA Route 6 Alliance

Message from the Secretary of Transportation

The Pennsylvania Route 6 Master Plan Design Guide sets the foundation for an integrated approach to enhance BicyclePA Route Y, one of our Commonwealth’s nine designated bicycle routes. At 409 miles long, BicyclePA Route Y is the second longest designated bicycle route in Pennsylvania and traverses along the scenic U.S. Route 6 through the forests of Pennsylvania’s Northern Tier and the many Heritage Communities that embody the history of our state and preserve our serene, rural towns. Linking the communities along U.S. Route 6 through bicycle infrastructures offers an unparalleled opportunity to add a rich transportation, recreational, and economic asset that will offer long-term community and economic development benefits for future generations.



Improving PA Route 6 is a strategic priority that aligns with the Pennsylvania Department of Transportation’s (PennDOT) 20/20 Strategic Direction to invest in smart, environmentally sustainable transportation infrastructure that not only reduces our carbon footprint and promotes healthy living, but also leverages community benefits through economic growth. Located in the state-designated Heritage Corridor spanning 11 counties, PA Route 6 links dozens of small communities located along the historic U.S. Route 6. As part of the recently-enacted Corridor Management Plan for the Heritage Corridor, bicycle accessibility and safety is a strategic driver to revitalize these communities and promote tourism in conjunction with regional branding and marketing initiatives. To fully capitalize on bicycle tourism, improvements to the route are imperative to address deficiencies stemming from road conditions, safety, accessibility, and connectivity to other regional trails and attractions.

The investment strategy reflects a smart, financially sustainable approach whereby the recommended Master Plan Design Guide improvements will be implemented in conjunction with regularly scheduled maintenance projects by PennDOT’s District offices. This approach adheres to PennDOT’s ongoing policy to encourage bicycling and walking as a routine and integral element of planning, project development, design, construction, operations, and maintenance. The Master Plan Design Guide, accordingly, acts as mechanism to fully delineate the infrastructure needs to support a comfortable bicycle level of service designed to attract professional and recreational riders alike.

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Sincerely,

A handwritten signature in black ink that reads "Leslie S. Richards". The signature is written in a cursive, flowing style.

Leslie S. Richards
Secretary of the Pennsylvania
Department of Transportation

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PA Route 6: An Iconic Pennsylvania Roadway

Spanning 427 miles across Pennsylvania’s northern tier, PA Route 6 connects individuals to local heritage communities, recreational attractions, scenic landscapes, and historically significant sites. The corridor can be traced back to the early 1800’s, when officials mandated a road be built through the Moosic Mountains to enable easier travel to the western part of the state. As Pennsylvania grew, so too did PA Route 6. The highway quickly became a vital link between new industry in the west and railroads in the east.

The story of PA Route 6 began with the need to move resources across the state. However, in recent decades, the corridor has transformed into a tourist destination thanks to its picturesque beauty, charming towns, and recreational opportunities. Today, approximately 3.5 million people travel along the historic highway each year to visit historic sites, state parks, and quaint towns.

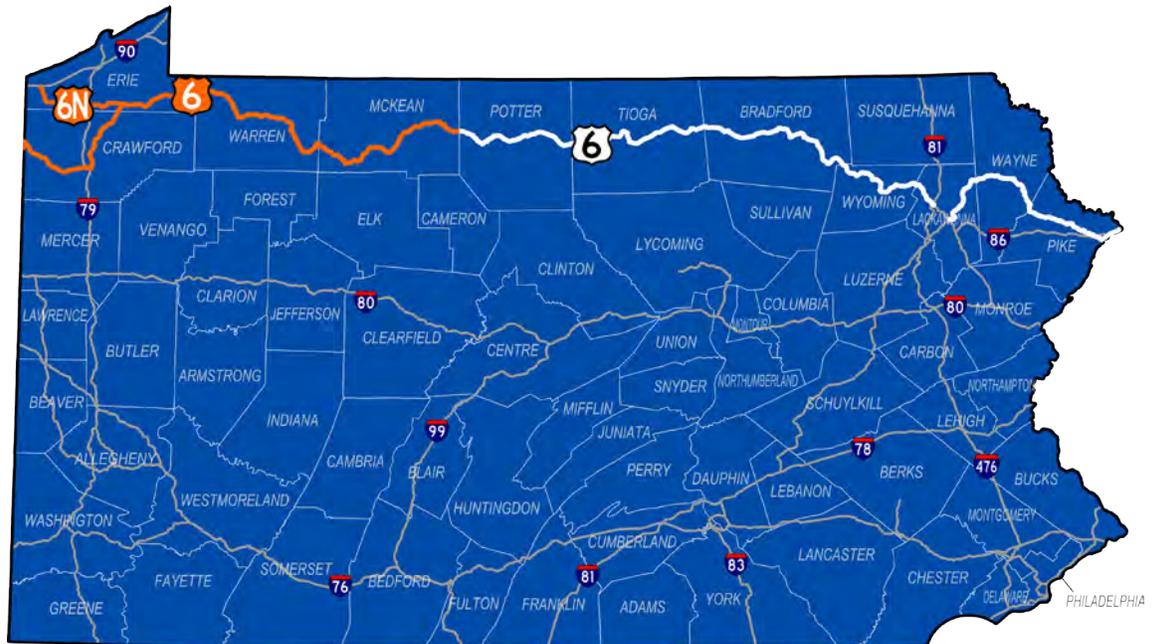
The Pennsylvania Department of Transportation (PennDOT) recognizes the statewide importance of PA Route 6 and has identified bicycle improvements along the corridor as a high priority initiative. PennDOT, in collaboration with the Pennsylvania Route 6 Alliance, is in the process of completing a PA Route 6 Master Plan Design Guide to address bicycle safety, accessibility, and connectivity along PA Route 6, which generally aligns with BicyclePA Route Y. **As the first section of a three-part study, this Plan focuses on the route’s first 150 miles (from the Ohio-Pennsylvania border to the McKean-Potter County line) and includes the 30 mile segment of PA Route 6 North (from the Ohio-Pennsylvania Border to US Route 19).** The Plan evaluates bicycle level of service, existing and potential trail connections, and infrastructure improvements. Key themes identified through the bicycle master planning process include heritage tourism, economic development in trail towns, and bicycle safety and education.

PA Route 6 Today:

- Designated Pennsylvania Heritage Corridor as of 2003
- Encompasses two Pennsylvania Scenic Byways: the *Gateway to Endless Mountains Scenic Byway* and the *Governor Casey Scenic Byway*
- 20 communities along the PA Route 6 Heritage Corridor are recognized as Route 6 Heritage Communities
- BicyclePA Route Y, which was established by PennDOT in the early 2000s, is located along Route 6

“This region of Pennsylvania has so much to offer the public with its scenery and history, and this is a prime opportunity to enhance tourism in the Pennsylvania Wilds and along the Route 6 corridor.”

**PennDOT Secretary
Leslie S. Richards**



PA Route 6 Master Plan Design Guide: Planning Process

The planning process for the PA Route 6 Bicycle Master Plan Design Guide, Section 1 began in April 2016 when PennDOT announced its interest in studying potential improvements to bicycle safety, accessibility and connectivity along PA Route 6 and PA Route 6 North. Stakeholder outreach and coordination, with a host of participating agencies including the Pennsylvania Department of Conservation and Natural Resource, the Pennsylvania Department of Community and Economic Development, and the Pennsylvania Route 6 Alliance, began shortly after to ensure all interested parties were able to participate as the planning process moved forward.

Participating Agencies

- Allegheny National Forest Visitors Bureau
- Bike Erie
- Conneaut Lake Borough
- City of Corry
- Crawford County
- Emerge2040
- Edinboro Borough
- Elk County
- Erie Arts & Culture
- Erie County
- Erie Metropolitan Planning Organization
- Kane Borough
- McKean County
- North Central Planning & Development Commission
- Northwest Planning Commission
- Pennsylvania Route 6 Alliance
- Pennsylvania Department of Community and Economic Development
- Pennsylvania Department of Conservation and Natural Resources
- Union City Borough
- Visit Crawford
- Visit Erie
- Warren County
- YMCA of Greater Erie
- Youngsville Borough



To understand baseline conditions along the corridor, PennDOT conducted an existing conditions inventory and assessment for the study area. The inventory and assessment included a review of bicycle level of service, historical crash data, environmentally and historically significant features, and previously completed plans and studies related to Pennsylvania Route 6. Additionally, a comprehensive video log was compiled for the entire study area to capture recent physical conditions along the route. The data gathered from the existing conditions inventory and assessment was used to inform the recommendations of the plan.

The PA Route 6 Master Plan Design Guide outlines general improvement strategies (e.g. details on when shoulder widening should take place), as well as specific bicycle improvements along the two Section 1 study area corridors (e.g. proposed wayfinding signage locations). The document also provides project cost estimates for all proposed improvements. The product is intended to be used by municipal and regional agencies as they plan for future multimodal transportation projects.

Extensive stakeholder outreach occurred throughout the entire planning process. PennDOT worked closely with the Pennsylvania Route 6 Alliance to schedule public meetings with local stakeholders, including municipal officials, heritage community representatives, business leaders, and bicycle users.





PA Route 6 and PA Route 6 North: Existing Conditions

► Bicycle Level of Service (BLOS)

BLOS is a nationally used tool for quantifying the “bicycle friendliness” of a roadway and results can help identify weak links in an existing bicycle network. BLOS, when combined with public input, can help tell a story about safety concerns, barriers to cycling, and gaps in frequently used routes. *For the study area along PA Route 6 and Route 6N, over 20% of the corridor functions at a BLOS grade of “D” or lower.*

► Pennsylvania Route 6 Crash Analysis

Using 2011-2015 PennDOT crash data, *it was determined that 22 recorded crashes involving bicyclists (9) or pedestrians (13) occurred along PA Route 6 during the 5 year period.* While there were no recorded fatalities, the crashes resulted in 23 injuries, three of which were considered severe. All crashes occurred within the corridor’s downtowns or in close proximity to downtowns.

► Needs Indicated by Previous Plans

Multiple regional studies point to the PA Route 6 corridor as a regional economic priority, specifically for tourism activities. While portions of PA Route 6 are clearly marked as a bicycle trail, additional bicycle infrastructure has the potential to attract new business and recreational opportunities. The following regional planning efforts highlight Route 6 as a key ecotourism goal:

North Central Long Range Transportation Plan

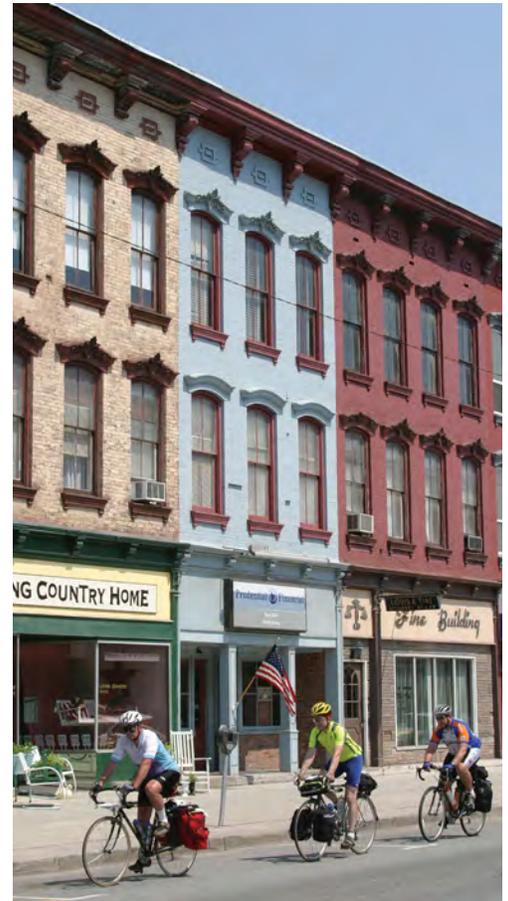
“Promote tourism as a regional economic priority (e.g. Lumber Heritage, Route 6 Heritage Corridor, Allegheny National Forest, PA Wilds, etc.)”

McKean County Comprehensive Plan

A secondary objective of the McKean County tourism strategy is to bolster its position relative to other counties along the U.S. Route 6 corridor.”

PA Route 6 Alliance Management Action Plan

“Encourage the maintenance and expansion of tourism-oriented businesses that offer experiences, hospitality and dining, recreation, entertainment and personal products and services for the PA Route 6 corridor traveler”



About the Pennsylvania Route 6 Alliance

“U.S. Route 6 in Pennsylvania is the focus of an effort to preserve, enhance and promote the transportation heritage of one of the nation’s first transcontinental highways; to sustain and enhance the small rural communities linked by the highway; and to preserve and enhance the natural, scenic beauty of one of America’s favorite ‘road trips’”

Mission of the PA Route 6 Alliance

Key Barriers

to safe and comfortable travel along PA Route 6 and PA Route 6 North

Through data collection efforts and discussions with key stakeholders, the following barriers to bicycle travel were identified.

Bridges and Underpasses



There are currently four bridges and four underpasses along the PA Route 6 corridor that do not have adequate shoulders, giving bicyclists very little room to maneuver. Because there is little to no room for expansion, bridge and railroad underpass improvements are more challenging.

Roadway Shoulders



Roadway shoulder conditions can prevent comfortable bicycle travel. In addition to inadequate shoulder widths, poor pavement conditions, steep road grades, and rumble strips all contribute to conditional problems that degrade travel comfort and safety.

Traffic / Road Safety



In addition to shoulder conditions, other roadway issues are present that affect bicycling behaviors. High volumes of truck travel and poor roadway striping, particularly in downtowns located along the corridor, can create hazards for both bicyclists and other motorists.

Bicycle Facilities and Signage



Along the PA Route 6 corridor, there is an overall lack of physical bicycle facilities. Adding rest stops, bicycle repair stations, and bicycle parking would provide additional amenities to bicyclists. Additionally, there is an absence of wayfinding signage outside of the PA Route 6 corridor.

Pennsylvania Route 6 Master Plan Design Guide

The PA Route 6 Master Plan Design Guide is intended to provide guidance for targeted proposed improvements along the Section 1 corridor. These improvements, varying in terms of cost and ease of implementation, are proposed at various locations along PA Route 6 and PA Route 6 North and are shown in detail in the Design Guide document. These improvements will provide the following benefits:

-  **Providing consistency along PA Route 6 and PA Route 6 North with respect to design and signage.** The corridor varies greatly in terms of roadway and traffic conditions, which collectively impact bicycle comfort. The recommended improvements will help offer a consistent and enjoyable bicycle experience across the corridor.
-  **Assisting communities in conformance with future projects.** Rather than having to determine and incorporate bicycle improvements for projects along PA Route 6 and PA Route 6 North, all of these items will have already been planned.

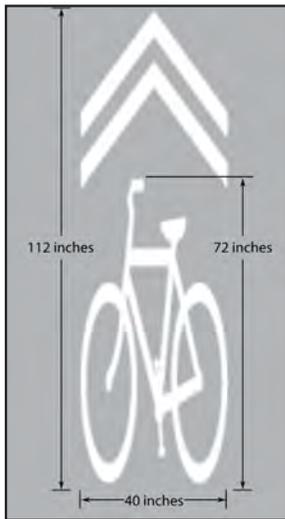
Local Community Improvements

Wayfinding Signage

The Pennsylvania Route 6 Master Plan Design Guide recommends wayfinding signage be installed to direct cyclists from BicyclePA Route Y to/from local communities, such as Conneaut Lake, Meadville, and Corry. These signs should reference local amenities or points of interest in prominent areas that are bypassed by the corridor. The signs should be installed at each turn of the detour and should also help cyclists return to BicyclePA Route Y following the deviation.



Example of wayfinding signage for the City of Corry



Sharrows

Given the right-of-way constraints through the corridor's communities, it is recommended that the communities install shared-lane markings (sharrows) through their downtowns. While sharrows do not offer designated infrastructure for cyclists, they help visually demonstrate where cyclists can safely ride to avoid the "door zone" from parked zones and also help make motorists more aware of cycling activity. Sharrows are recommended where the posted speed limit is 35 mph or less while "Bicycle May Use Full Lane" signage (shown on next page) may be used on roadways with higher speeds. Sharrows should be placed a minimum of 4 feet from the face of curb or roadway edge to the center of the sharrow marking. When used adjacent to a parking lane, they should be placed a minimum of 4 feet from the edge of the parking edge line to the center of the sharrow marking.

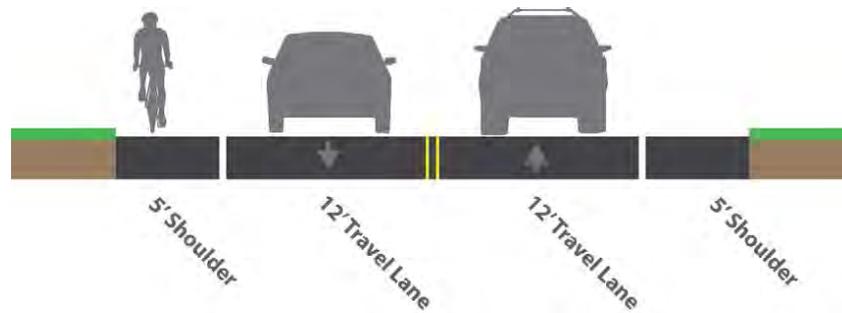


Design Guide Resources

- American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities
- National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide
- Institute of Transportation Engineers (ITE) Designing Urban Walkable Thoroughfares

PennDOT Improvements

While local improvements help address cycling safety, mobility, and accessibility within the PA Route 6 and PA Route 6 North communities, larger-scale improvements are also needed to help improve cycling conditions along the corridor's rural segments. These improvements include additional signage for vehicles and bicyclists, bridge repairs and replacements, shoulder repairs, and rumble strip repairs. It is anticipated that these investments will be made under the direction of PennDOT with community support, as needed.



Roadway shoulders should be a minimum of 5 feet wide in order to help ensure bicycle comfort and safety

Detailed Corridor Improvements

Detailed corridor improvements were identified along the 150 mile segment of PA Route 6 and the 30 mile segment of PA Route 6 North. "Plan Sheets" were developed for the entire study area and each ten mile plan sheet identifies specific signage, roadway, and trail improvements that should be considered for future transportation planning efforts.



Pennsylvania Route 6 North Corridor Bicycle Improvements in Edinboro, PA

Improvement Cost Estimates

The final component of the Pennsylvania Route 6 Master Plan Design Guide is a section on probable cost estimates for the range of improvements recommended for the study area corridors. Four main project categories were used to organize the cost estimates: *Cost-Effective Improvements*, *Community Projects*, *PennDOT Maintenance Projects*, and *Bridge Projects*. For the first 150 miles of PA Route 6 a probable cost estimate for all recommended improvements along the corridor totaled \$70.1 million, which includes construction and other related costs. Bridge replacements accounted for nearly half of this estimate. The probable cost estimate for PA Route 6 North was considerably less, at \$5.9 million, and did not include any bridge replacement projects.

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Bicycle Opportunities for Improvement

General improvement opportunities to enhance bicycle access, safety, and connectivity along the corridor were identified through the PA Route 6 Master Plan Design Guide planning process. The following suggested improvements were brought forth during stakeholder outreach discussions.

U.S. Bicycle Route System (USBRS) Designation



There are many benefits to designating a U.S. Bicycle Route for communities along the route and for the state in which the route is located. Increased tourism, greater national visibility, and improved multimodal connections are a few reasons for connecting to the USBRS and as such, PennDOT endeavors to create a National Bikeway along BicyclePA Route Y.

Additional Wayfinding for Cyclists



Aside from BicyclePA Route Y signage, all other forms of wayfinding signs are absent. Any points of interest or amenities off of the route generally go unnoticed. Additional signage can direct bicyclists to notable locations along the corridor and encourage individuals to visit places that were otherwise unknown.

Linkages to Communities and Other Trails along BicyclePA Route Y



Currently, BicyclePA Route Y bypasses the City of Corry, Conneaut Lake Borough, and Meadville Borough. These communities are located within easy biking distance of the route and could be attractions and/or rest stops for bicyclists. Improving connectivity to these nearby places is an important strategy for local decision-makers to address. Additionally, there are many existing and proposed recreational bicycle trails that could connect to BicyclePA Route Y and improve bicycle linkages across the Norther Tier. For example, the Corry Junction Greenway Trail is located a few hundred feet north of PA Route 6 and could offer a quick excursion to New York State for interested bicyclists.

Bicycle Friendly Towns



Experienced cyclists and casual riders alike will benefit from bicycle friendly towns. These towns act as pit stops along the corridor and provide amenities such as municipal bicycle racks, local wayfinding maps to orient riders toward amenities, and business districts with bicycle friendly destinations. These destinations can welcome riders with simple gestures like posting window decals and signs, offering free water to cyclists, and distributing bicycle maps.

Pennsylvania Route 6 Map Guide for Bicyclists



Smartphone apps are becoming increasingly popular with bicyclists. One way to make potential riders feel welcome on BicyclePA Route Y and PA Route 6 North is to make sure the entire route is added to popular bicycle mapping apps, complete with details on tricky segments and recommendations for bicycle friendly towns. Many apps also pull information from Google Maps' Bicycling layer. Working with Google Maps to designate PA Route 6 and PA Route 6 North as a "bicycle-friendly" road will help direct many casual riders toward the corridor.

Bicycle Funding Sources and Project Implementation



While the range of eligible applicants and project activities vary by program, the following represents a list of existing state and federal programs that may be applicable to BicyclePA Route Y improvements along PA Route 6. Additional information for each program can be found online, including program guidelines that outline application procedures, eligible applicants, eligible uses, and selection criteria.

FEDERAL PROGRAMS



Congestion Management and Air Quality (CMAQ) Improvement Program

CMAQ targets specific areas to reduce congestion and air pollution. For bicycle projects, CMAQ gives a high priority to new pedestrian and bicycle facilities that provide direct access to transit amenities or schools.



Federal Lands Access Program (FLAP)

FLAP provides funds for projects that are located on, adjacent to, or provide access to federal lands. Examples of eligible activities include planning, design and maintenance of transportation facilities.



Recreational Trails Program (RTP)

RTP funds assist in the development of maintenance of small-scale motorized and non-motorized recreational projects. Eligible activities include the construction of new trails, restoration/maintenance of existing trails, and property acquisition.

Obtaining state and federal funding through discretionary grant programs may be an opportunity for communities to supplement local funding in order to complete improvements identified through the PA Route 6 Bicycle Master Plan Design Guide.

Common Elements of a Competitive Grant Application:

- Well-defined project scope
- Shovel-ready projects
- Secured local match
- Existing local and regional partnerships
- Regional planning consistency
- Strong community support

STATE PROGRAMS



Keystone Communities Program (KCP)

The KCP is intended to support revitalization efforts along main street corridors and can be used for a range of publically-owned improvements.



Greenways, Trails, and Recreation Program (GTRP)

The GTRP provides funding for planning, acquisition, development, rehabilitation and repair of greenways, recreational trails, open space, parks, and beautification projects.



Community Conservation Partnership Program (C2P2)

C2P2 funds a wide range of recreation related projects, including community parks and recreation, land and river conservation, trails, and greenways.



Multimodal Transportation Fund (MTF)

The MTF provides grants to encourage economic development and to ensure safe and reliable transportation throughout Pennsylvania. MTF funds a variety of transportation related projects, including pedestrian safety improvements, streetscapes, and bicycle lane and route design projects.



Transportation Alternatives Program (TAP)

TAP provides funding for a range of transportation projects, including on- and off-road pedestrian and bicycle facilities, recreational trail projects, and safe routes to school projects.



Pennsylvania Department of Transportation
Multimodal Transportation Deputate
717-787-8197