



PENNSYLVANIA
Transportation Advisory Committee
**Bicycle and Pedestrian
Policy Study**



The Pennsylvania State Transportation Advisory Committee

The Pennsylvania State Transportation Advisory Committee (TAC) was established in 1970 by Act 120 of the State Legislature, which also created the Pennsylvania Department of Transportation (PennDOT). The TAC has two primary duties. First, it "consults with and advises the State Transportation Commission and the Secretary of Transportation on behalf of all transportation modes in the Commonwealth." In fulfilling this task, the TAC assists the Commission and the Secretary "in the determination of goals and the allocation of available resources among and between the alternate modes in the planning, development, and maintenance of programs and technologies for transportation systems." The second duty of the TAC is "to advise the several modes [about] the planning, programs, and goals of the Department and the State Transportation Commission." The TAC undertakes in-depth studies on important issues and serves as a liaison between PennDOT and the general public.

The TAC consists of the following members: the Secretary of Transportation; the heads (or their designees) of the Department of Agriculture, Department of Education, Department of Community and Economic Development, Public Utility Commission, Department of Environmental Protection, and the Governor's Policy Office; two members of the State House of Representatives; two members of the State Senate; and 19 public members—seven appointed by the Governor, six by the President Pro Tempore of the Senate, and six by the Speaker of the House of Representatives.

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Section 1: Introduction

Purpose

The Transportation Advisory Committee (TAC) commissioned this study to strengthen PennDOT's policy for bicycles and pedestrians and establish new methods for policy implementation and follow-through.

TAC facilitated this process and engaged PennDOT staff and leadership along with a broad spectrum of other stakeholders to obtain a range of expertise and perspectives. This report presents the TAC's bicycle and pedestrian policy recommendation to the State Transportation Commission (STC) for its consideration and endorsement.

Document Organization

This document is organized into three sections:

Section 1 introduces the purpose of the study, provides a background on bicycle and pedestrian planning and policy at the federal and state levels, and summarizes the project methodology.

Section 2 contains the recommended PennDOT Bicycle and Pedestrian Policy. This section functions as a stand-alone document and embodies the core purpose of this report.

Section 3 provides a recommended policy implementation strategy.

An **Appendix** summarizes bicycle and pedestrian policies, procedures, and design guidelines of other states.

Background

Bicycling and walking represent important modes of transportation throughout the Commonwealth of Pennsylvania. As shown on the following table, annually, more than one quarter of a million commuters travel to work primarily by walking or biking. Additional trips are made by citizens engaged in activities of everyday life such as visiting relatives, obtaining medical care, and shopping. Visitors often walk and bicycle as part of their tourism and recreational activities in the Commonwealth.



Workers 16 and Older Who Bicycle or Walk to Work in Pennsylvania, 2014

	Percentage of Commuters	Number of Commuters
Bicycle	0.5%	29,000
Walk	3.9%	227,000
Total	4.4%	256,000

Source: US Census Bureau, 2010-2014 American Community Survey 5-Year Estimates

Walking and bicycling serve as an integral part of the multimodal transportation network and often are a primary means of transportation for the public. Accordingly, a wide range of federal and state agencies support improving the transportation network to increase pedestrian and bicyclist safety and convenience.

In 2010, the United States Department of Transportation (USDOT) set a nationwide policy for bicycle and pedestrian accommodation with the issuance of its “Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations.” That policy states in part:

The DOT policy is to incorporate safe and convenient walking and bicycling facilities into transportation projects. Every transportation agency, including DOT, has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems. Because of the numerous individual and community benefits that walking and bicycling provide—including health, safety, environmental, transportation, and quality of life—transportation agencies are encouraged to go beyond minimum standards to provide safe and convenient facilities for these modes.

The federal policy encourages states and local agencies to adopt similar policies for bicycle and pedestrian accommodation and to go beyond minimum design standards to promote:

- cleaner, healthier air
- less-congested roadways
- options for active, healthy transportation
- more livable, safe, cost-efficient communities
- low-cost mobility options

Role of State and Local Agencies

While the USDOT provides stewardship and guidance at the national level, state and local transportation agencies are the critical link to an efficient and safe transportation network.

PennDOT and local governmental agencies are responsible for planning, designing, constructing, and maintaining Pennsylvania’s infrastructure. As such, bicycle and pedestrian policies and practices at the state and local levels have the greatest impact on safe transportation connections for all users.



A Record of Bicycle and Pedestrian Improvements

PennDOT has improved its planning and project development process to better integrate bicycles and pedestrians into the transportation system on a regular basis. Below is a historic timeline summary of PennDOT's bicycle and pedestrian policies and planning.

1996 Bicycle and Pedestrian Master Plan – This statewide plan set a vision for Pennsylvania as a place where “people can walk and bicycle with confidence, safety, and security in every community, both for daily transportation and to experience and enjoy the remarkable natural resources of the state.”

1998 Implementation Steps – After plan adoption, PennDOT began an aggressive implementation effort for the Bicycle and Pedestrian Master Plan. The implementation was built on a foundation of three efforts:

- Review the status of bicycle and pedestrian planning statewide.
- Provide training to state and local officials on bicycle and pedestrian issues and accommodation.
- Provide technical assistance to planning agencies for completing bicycle and pedestrian plans.

2000 Statewide Long-Range Transportation Plan (PennPlan) – One of this plan's primary objectives was to “implement the objectives contained in the Statewide Bicycle and Pedestrian Master Plan.” This inclusion signaled a strong recognition of the plan and the need to continue its implementation.

2001 Bicycle and Pedestrian Checklist – As a part of the implementation steps for the Bicycle and Pedestrian Master Plan, PennDOT created and put into use the first iteration of the Bicycle and Pedestrian Checklist. The Design Manual encouraged its use in transportation projects.

2006 Statewide Long-Range Transportation Plan (PA Mobility Plan) – Bicycle and pedestrian planning was again reinforced in PennDOT's PA Mobility Plan, which considered a planning horizon through 2030.

2007 Bicycle and Pedestrian Master Plan – This statewide plan update set two important goals for Pennsylvania:

- Double the percentage of trips by foot and bicycle by 2015.
- Reduce the number of fatalities among bicyclists and pedestrians to a level corresponding to the national highway motor vehicle fatality rate reduction goal (29 percent).



Status of the Bicycle and Pedestrian Master Plan Goals

The goals from the 2007 Bicycle and Pedestrian Master Plan (double the number of bicycle and pedestrian trips and reduce the number of fatalities, as described in the preceding text) were aspirational and meant to encourage a strong push forward in bicycle and pedestrian accommodation. Measures of these goals, however, can be difficult to move statistically over the short term. While three of the four measures have shown improvement, neither of the two goals has been achieved to date.

Trips by Foot and Bicycle

There is only one uniform and regularly collected dataset for tracking mode share for bicycling and walking. The U.S. Census—and now the American Community Survey—measures the percentage of commuters who primarily walk or bicycle to work. From 2009 to 2014, the American Community Survey shows mixed results for Pennsylvania as follows:

Pennsylvania	2009	2014	Change
Foot Commuters	4.1%	3.9%	-4.9%
Bicycle Commuters	0.4%	0.5%	25%

Source: US Census Bureau, American Community Survey 5-Year Estimates

Bicycle and Pedestrian Fatalities

The plan quantifies the fatality reduction goal at 29 percent. Fatality reductions have been achieved for both bicycles and pedestrians, but they have not equaled the goal. As measured by PennDOT's Statewide Fatality Statistics, fatality reductions have been as follows:

Pennsylvania	2007	2014	Change
Pedestrian Fatalities	163	156	-4.3%
Bicyclist Fatalities	17	16	-5.9%

Source: PennDOT Statewide Fatality Statistics, 5-Year Moving Averages

2007 Bicycle and Pedestrian Policy Update – On April 4, 2007, PennDOT issued the following bicycle and pedestrian policy statement in Strike-Off Letter 432/07/02 (effective May 15, 2007):

Department policy requires the evaluation of the access and mobility needs of pedestrians and bicycle users in highway and bridge transportation corridors. This revised policy mandates that highway and bridge projects must evaluate the existing, latent, and projected needs of



pedestrians and bicycle users. It requires the integration of the identified needs into project planning and design processes. This revised policy also clarifies that bicycle users are vehicles,* and that pedestrians are classified as traffic in accordance with the Vehicle Code.** The intent of this policy is to bolster the importance of pedestrians and bicycle travel as viable and connective modes of transportation. Previous policy allowed the evaluation of the access and mobility needs of pedestrians and bicycle users to be a design and planning option, not as a process requirement.

*Pennsylvania Consolidated Statutes, Title 75 “Vehicles” (Vehicle Code), Chapter 35, Part 3, Subchapter A “Operation of Pedalcycles”

**Pennsylvania Consolidated Statutes, Title 75 “Vehicles” (Vehicle Code), Chapter 1, Part 1, Section 102 Definitions, under the term Traffic

This update required that the Bicycle and Pedestrian Checklist be completed as part of all PennDOT construction and reconstruction projects, and a guide on how to use the checklist was added.

Current PennDOT policy details are further expanded in the following PennDOT publications:

- PennDOT Design Manual, Parts 1 and 1A (Publications 10 and 10A)
- PennDOT Design Manual Part 2 – Highway Design (Publication 13M)
- Pennsylvania Mobility Plan, 2006
- PennDOT Bicycle and Pedestrian Master Plan, 2007
- PennDOT’s 2008 Sound Land Use Implementation Plan, Publication 572 (4-08)

2013 Statewide Long-Range Transportation Plan (PA on Track) – PennDOT developed its current long-range transportation plan, PA on Track, which reflects the ongoing commitment to meeting the increased public demand for improved bicycle and pedestrian accommodation.

2013 Multimodal Transportation Funding – Act 89 of 2013 established Multimodal Transportation Funding; several rounds of funding have been distributed to support various projects, including bicycle and pedestrian facilities.

Recent ADA Improvements – PennDOT has continually updated its publications and guidance to comply with the Americans with Disabilities Act. Notable updates include the following:

- Standards for Roadway Construction for Curb Ramps and Sidewalks (Pub 72M, RC-67M) has been updated several times since 2007 to provide more guidance, details, and options for ADA curb ramps.
- Design Manual, Part 2 updates in 2008 clarified ADA requirements.
- PennDOT routinely works with the Federal Highway Administration (FHWA) and the U.S. Access Board to ensure its policies and standards meet the current ADA requirements.



Increased Bicycle and Pedestrian Integration – Bicycle and pedestrian needs are being integrated into traditional PennDOT projects. Recent examples include:

- U.S. Route 202 Parkway Trail (Bucks and Montgomery Counties) – Sidepath, bike lanes, and widened shoulders.
- Susquehanna Road Repaving Project (Montgomery County) – Bike lanes added.
- South Cedar Crest Boulevard and Parkway Boulevard Bridge (Lehigh County) – Design modified with low-cost elements (due to use of Bike/Ped Checklist during design).
- West Whitehall Road (Centre County) – Bike lanes and sidewalk added.
- Waddle Road Bridge (Centre County) – Bike lanes and sidewalk added.
- East Ohio Street (Allegheny County) – Buffered bike lanes, widened sidewalk, high visibility crosswalks, and painted bump outs.

Limitations of Current Policy and Implementation

Through this policy study and associated interviews with design and planning professionals, several limitations of current PennDOT bicycle and pedestrian policy and its implementation were identified:

Lack of Sufficient Transportation Funding: Even after the passage of Act 89 of 2013 and the additional funding is provided, transportation priorities such as safety, capacity, and roadway and bridge maintenance projects compete for limited funding resources. This ongoing funding shortfall creates an environment where bicycle facilities that have been identified as needs in the project scoping process are removed for cost savings to the overall project. Funding limitations also make it difficult for stand-alone bicycle and pedestrian projects, since they must compete with challenging road and bridge infrastructure needs during project prioritization.

Inconsistencies in the Completeness of Bicycle and Pedestrian Checklists: Study interviews indicated that the Bicycle and Pedestrian Checklist is used inconsistently during the project development process. Moreover, PennDOT staff as well as consultant planning and design professionals have insufficient familiarity with local bicycle and pedestrian needs to identify critical network gaps and incorporate that information into the checklist. Additional training and improved local coordination is needed to ensure that critical network gaps are identified and that low-cost solutions and phasing options are fully considered in all projects.

Challenges with Local Coordination: Local bicycle and pedestrian needs and concerns are often raised late in the project development process. Many are brought to light only as preliminary design plans are made available for public comment. At that point, design and permitting delays combined with cost implications, can limit PennDOT's ability to incorporate bicycle and pedestrian facilities. Current PennDOT policy does not require that metropolitan planning organization/rural planning organization (MPO/RPO) staff review and comment on the Bicycle and Pedestrian Checklist.

Lack of Clearly Defined Targets and Metrics: No performance targets or metrics exist for the inclusion of bicycle and pedestrian facilities in transportation projects. This may foster a perception that bicycle and pedestrian accommodations are optional. This may reflect, in part, that there has historically not been funding for bicycle and pedestrian improvements.



Inconsistent Education and Awareness Regarding Bicycle and Pedestrian Planning and Design Standards: Since 2007, significant changes have occurred in industry standards related to bicycle and pedestrian planning, design, and associated treatments. The PennDOT Design Manuals and the Motor Vehicle Code have not been consistently modified to endorse newer treatments and to account for newly published safety studies. In addition, no Department-wide management controls exist to ensure that the existing standards are being followed.

Staffing: Staff resources at the state, regional, and local levels are limited, making the complete implementation of the current policy more challenging.

Project Methodology

This project was completed by the TAC in two phases.

During Phase 1, the study team compiled a list of issues related to the current status of bicycle and pedestrian accommodation throughout Pennsylvania. A three-step process of telephone interviews, an in-person meeting with a stakeholder focus group, and meetings with PennDOT staff produced a broad and wide-ranging set of 48 bicycle and pedestrian issues.

Much of the work for Phase 2 was conducted by a Working Group of PennDOT staff and stakeholders representing the state legislature, state agencies, MPOs, county and municipal government, and transit. A Policy Group that included executive-level PennDOT officials oversaw the project. This group provided high-level project direction and reviewed work products throughout the project.

Both the Working Group and the Policy Group helped distill the 48 issues generated during Phase 1 into a list of 13 problem statements, targeted for focused analysis in Phase 2. These problem statements are shown in the following table.



Bicycle and Pedestrian Core Problem Statements Guiding Policy Development

Funding and Resources

1. Bicycle and pedestrian needs have not been fully identified or systematically classified and prioritized, nor have appropriate funding levels been established to meet these needs.

Coordinated Planning

2. There is a lack of a clear policy and decision framework for bicycles and pedestrians, resulting in bicycle and pedestrian facilities that are inadequate and inconsistently applied to transportation projects.
3. Education on how to address bicycle and pedestrian needs throughout the planning process is lacking for all transportation staff, including PennDOT’s Bicycle and Pedestrian Coordinators.
4. Planning for bicycles and pedestrians has been inconsistent at all levels of government; planners, administrators, and engineers have not come to shared agreement on its appropriate inclusion in the planning process.

Project Development

5. There is a lack of awareness of bicycle and pedestrian issues among project engineers and designers, which results in inconsistency in integrating bicycle and pedestrian accommodations in transportation projects.
6. There is a lack of accepted and enforced design standards, maintenance and protection of traffic guidance, and QA/QC processes for bicycle and pedestrian accommodations, resulting in missed opportunities, inconsistencies, and lack of clarity to guide investment and implementation.
7. The lack of proper and inclusive planning and design prohibits or discourages access and mobility and decreases safety for all pedestrian users, particularly those with special needs.

Maintenance and Operations

8. The Bicycle Occupancy Permit (BOP) has caused issues related to maintenance requirements, and it does not provide additional liability protection.
9. Transportation maintenance programs are not conducive to providing alterations to roadway facilities during maintenance to better accommodate bicycles and pedestrians—when it is most cost-effective to do so.

Safety, Public Awareness, Enforcement, and Legal

10. There is a widespread lack of awareness of laws relating to bicycles, pedestrians, and vehicles and of the application of these laws in creating and sustaining a culture of safety for all users.
11. The enforcement of laws related to bicycles, pedestrians, and vehicles is inadequate and inconsistent.
12. Vehicle safety countermeasures (e.g., rumble strips) have not consistently been applied with adequate consideration for the secondary impact to bicycles and pedestrians, resulting in unintended hazards.
13. Bicycle and pedestrian advocates lack a sufficient understanding of PennDOT constraints, issues, and premises associated with the above problem statements.



The Working Group analyzed each problem statement to determine causes, impacts, and associated issues. This problem analysis resulted in a list of five primary policy objectives that guided development of the recommended bicycle and pedestrian policy.

Policy Objectives:

1. Establish the overall bicycle and pedestrian goals, performance measures, and other methods of policy and program evaluation.
2. Specify an accepted planning methodology to identify and prioritize bicycle and pedestrian improvements.
3. Establish a statewide planning and programming approach that considers locally identified needs and networks.
4. Establish a criteria-based process for incorporating bicycle and pedestrian improvements into current and future projects.
5. Define the appropriate means and structure for funding planning and project design/construction.

The next section contains TAC's recommended bicycle and pedestrian policy. The recommended policy was developed to address the key problems and the objectives listed above. The recommended policy is a starting point for PennDOT as it moves forward toward policy implementation. An Implementation Task Force, discussed in Section 3 of this report, should be established to plan for and guide implementation. The task force should be charged with refining the recommended policy and determining an effective roll-out and implementation strategy.

Section 2: TAC-Recommended PennDOT Bicycle and Pedestrian Policy

Part A: Overview

Purpose and Overview

Bicycle and pedestrian mobility is important to the Commonwealth for transportation, safety, health, quality of life, and economic development purposes. This updated and expanded bicycle and pedestrian policy strengthens and reinforces a Department-wide commitment to bicycle and pedestrian facilities as an integral element of Pennsylvania's multimodal transportation network. The policy requires the Commonwealth and its partners on state-supported projects to use a consistent, collaborative approach to planning, programming, and constructing facilities for bicycles and pedestrians. It also requires tracking the policy's execution, performance, and effectiveness.

This updated policy requires consistent collaboration among PennDOT, MPOs, RPOs, and county and local governments. The policy's partnership framework will ensure that local and regional priorities are identified and programmed whenever feasible.

Basis and Authority

PennDOT's bicycle and pedestrian policy is consistent with and supportive of other related federal and state policies and directives, including:

- Federal law, including MAP-21 and the FAST Act
- USDOT's Policy Statement on Bicycle and Pedestrian Accommodation
- PA Act 120, which created the Pennsylvania Department of Transportation as an agency with responsibility for all modes of transportation
- PA Act 89, which bolstered PennDOT as a multimodal agency and reorganized the Department accordingly

PennDOT Funding Limitations

The PennDOT bicycle and pedestrian policy does not identify specific funding sources, nor does it guarantee availability of existing funding for implementing bicycle and pedestrian improvement projects, programs, or studies. Existing transportation funding is insufficient to fulfill the transportation needs of the Commonwealth. However, bicycle and pedestrian facilities shall be considered among all modes of transportation in Department projects.

MPOs/RPOs will identify and prioritize bicycle and pedestrian projects and/or corridors to which available funding should be directed. PennDOT will consider MPO/RPO priorities when making decisions about including bicycle and pedestrian facilities as part of projects and programs.

PennDOT shall establish annual statewide and District-level performance measures and targets for bicycle and pedestrian improvements to ensure some level of funding is directed to bicycle and pedestrian initiatives in each District.

External Funding Participation

PennDOT encourages MPOs/RPOs to pursue alternative and diverse funding sources to help advance bicycle and pedestrian projects. Funding sources include other government agencies, local

communities and organizations, developers, and other private partners. Projects with available matching funds from partnership sources may be given preference in order to maximize the impact of federal and state funding. Municipalities and counties can help complete a bicycle and pedestrian network in their jurisdictions by planning, funding, and constructing projects on the local road network.

Part B: Direction

Core Policy Statement

PennDOT shall make accommodations for bicycling and walking a routine and integral element of planning, project development, design, construction, operations, and maintenance.

Policy Objectives

The supporting elements of this policy are designed to promote five policy objectives.

1. Establish the overall bicycle and pedestrian goals, performance measures, and other methods of policy and program evaluation.
2. Specify an accepted planning methodology to identify and prioritize bicycle and pedestrian improvements.
3. Establish a statewide planning and programming approach that considers locally identified needs and networks.
4. Establish a criteria-based process for incorporating bicycle and pedestrian facilities into current and future projects.
5. Define the appropriate means and structure for funding planning and project design/construction.

Supporting Policy Elements

Coordination

PennDOT's bicycle and pedestrian policy shall be implemented through ongoing and consistent coordination and collaboration. PennDOT will oversee this coordination and formal coordination actions will be established and periodically updated as part of the Statewide Bicycle and Pedestrian Master Plan.

Coordination begins internally with collaboration among the Department's Central Office, Districts, and County Maintenance Offices. The Department is also responsible for coordinating effectively with other state agencies.

External coordination relies on PennDOT's collaboration with MPOs and RPOs, which in turn coordinate with municipalities and other regional stakeholders. These include public transit agencies, educational institutions, trail groups, public health agencies, elected officials, businesses, bicycle and pedestrian groups, and the general public.

Bicycle and Pedestrian Plans

Regional Bicycle and Pedestrian Plans

MPOs/RPOs shall develop Regional Bicycle and Pedestrian Plans in cooperation with PennDOT Multimodal and Planning and Programming staff in the Districts and PennDOT's Central Office. Regional Bicycle and Pedestrian Plans shall identify and prioritize bicycle and pedestrian projects and corridors to which funding should be directed.

To ensure statewide consistency of the Regional Bicycle and Pedestrian Plans, the PennDOT Multimodal Deputate and Program Center shall issue guidance, including a planning handbook, a regularly updated Statewide Bicycle and Pedestrian Master Plan, and direction provided in Transportation Program Guidance to MPOs/RPOs.

Regional Bicycle and Pedestrian Plan development shall include:

- Outreach and coordination with the public, stakeholders, and advocacy groups.
- Coordination with local municipalities.
- Regional needs analysis and mapping.
- A prioritized listing of candidate projects and/or corridors.
- A fiscally-constrained funding approach considering a range of public and private sources and partnerships.

Regional plans and prioritized project lists shall be compiled by the PennDOT Multimodal Deputate and the Program Center into a statewide GIS map and database for ease of use throughout the Department.

Statewide Bicycle and Pedestrian Master Plan

The PennDOT Multimodal Deputate shall prepare a Statewide Bicycle and Pedestrian Master Plan and update it at least every five years. The plan will update PennDOT's approach to bicycle and pedestrian issues, including, but not limited to: establishing and revising goals, objectives, and performance measures; collecting and reporting relevant data; promoting internal and external coordination; and incorporating broad stakeholder participation.

Integration into the Planning, Programming, and Project Development Process

Bicycle and pedestrian improvements may be advanced either as stand-alone projects or integrated with other highway improvement projects (e.g., restoration, safety, or capacity-adding projects).

Stand-alone projects will advance normally through the existing planning, programming, and project development process.

For other highway improvement projects, PennDOT Districts and MPOs/RPOs shall ensure that multimodal needs, including bicycles and pedestrians, are consistently considered early in the project development process to identify elements that can improve multimodal travel. The Regional Bicycle and Pedestrian Plan will help identify prioritized locations for bicycle and pedestrian accommodation. In order to ensure that projects are adequately examined for bicycle and pedestrian needs, consistent decision-making tools will be applied as follows:

- MPOs/RPOs shall use the Linking Planning and NEPA screening forms for early identification of locations where bicycle and pedestrians needs exist.

- The Bicycle and Pedestrian Checklist shall be used jointly by the MPO/RPO and PennDOT Districts early in project planning and will include verification by both parties of its completion.
- The Bicycle and Pedestrian Checklist shall be updated to include objective criteria to help determine whether a bicycle or pedestrian facility is warranted as part of a project.
- Other data, such as traffic and safety data, will be applied as needed.

Funding allocations will be considered when planning and designing bicycle and pedestrian facilities.

MPO/RPO planners and District bicycle and pedestrian coordinators shall conduct periodic coordinated reviews of current bicycle and pedestrian issues, proposed projects within the Linking Planning and NEPA development process, and projects identified on the LRTP or programmed on the TIP.

Bicycle and Pedestrian Design Guidance

The design of bicycle and pedestrian facilities shall comply with applicable sections of the Design Manuals, including references to external bicycle and pedestrian design guidance.

The Department shall regularly monitor state-of-the-practice design guidance for bicycle and pedestrian facilities, review new guidance for applicability and appropriateness, and update PennDOT Design Manuals to reference this guidance as beneficial for Pennsylvania. Other PennDOT guidance documents related to transportation planning and modal program administration will be updated as applicable.

Design guidance for bicycle and pedestrian infrastructure is typically produced by:

- American Association of State Highway and Transportation Officials (AASHTO)
- National Association of City Transportation Officials (NACTO)
- Institute of Transportation Engineers (ITE)
- U.S. Access Board
- Federal Highway Administration (FHWA)

Design flexibility is inherent within PennDOT's Design Manual (See Chapter 7 of DM-1). To allow design guidance to be customized to local conditions, PennDOT proactively promotes flexibility in design for all transportation projects.

Training/Awareness/Technical Assistance

The PennDOT Multimodal Deputate shall maintain a program of training, awareness, and technical assistance to support bicycle and pedestrian accommodation.

Training shall consist of a range of formats and options and include a progression of topics from introductory information to expert-level design training. Existing training courses will be integrated into an overall training framework.

Training shall be made available to PennDOT staff, MPOs/RPOs, local government, and consultants.

Part C: Phasing

Phased Approach and Rationale

The Department will implement this bicycle and pedestrian policy in all appropriate areas of its operations following a phased approach. Phasing provides time to develop the funding approach for Phase 2.

Phase 1 – Phase 1 includes a to-be-determined number of targeted pilot projects based on funding availability. These pilot projects will include existing highway and bridge projects in an early design phase that can be enhanced by including new or additional bicycle and pedestrian facilities.

Phase 2 – Phase 2 is the complete implementation of the policy with bicycle and pedestrian transportation integrated with PennDOT’s processes for planning, project development, construction, maintenance, system operation, and grant program administration.

Implementation, Performance, and Reporting

Executive and senior management are responsible for ensuring that the appropriate management controls, including performance measures and targets, are established to ensure effective policy implementation. An annual implementation progress report shall be developed through the guidance and leadership of PennDOT’s Statewide Bicycle and Pedestrian Coordinator and presented to the State Transportation Commission.

The Statewide Bicycle and Pedestrian Master Plan shall establish a series of performance measures to track how well the Department is addressing bicycle and pedestrian needs. Statewide performance measures should align to the extent practicable with regional performance measures and federal guidance through MAP-21 and FAST Act legislation.

Existing PennDOT plans and processes such as District Business Plans will be used as beneficial to advance policy implementation. Implementation progress is to be reviewed periodically with MPOs/RPOs.

Policy Exemptions

Projects and programs supported by PennDOT are exempt from the requirements of this policy in the following circumstances:

1. When the roadway is prohibited by law from being used or accessed by bicycles or pedestrians.
2. When roadway maintenance projects do not involve any paving or application of new pavement markings, such as crack sealing, pothole patching, joint repair, and drainage improvements.
3. When the cost of implementing bicycle or pedestrian facilities is excessively disproportionate to the overall project or the benefit derived by their addition. “Excessively disproportionate” is a cost in excess of 20 percent of the overall project cost. The 20 percent threshold is a guideline only.
4. Where the low density of population, employment, or existing and planned land uses does not justify incorporating bicycle and pedestrian facilities.
5. Where the addition of bicycle or pedestrian facilities would negatively impact safety, the environment, or the community to an extent that outweighs the need for the facilities.

Bicycle and Pedestrian Integration with PennDOT Programs

Executive leadership shall ensure that bicycle and pedestrian considerations are integrated into PennDOT programs as appropriate. These programs include, but are not limited to:

- Highway restoration, safety, and capacity-adding projects (Twelve-Year Program)
- County maintenance program
- District highway, bridge, traffic control, signals, and permitting
- Public transportation grants
- Multimodal programs
- Safety plan and programs
- Federal programs

Interagency Coordination

The benefits from investments in bicycle and pedestrian transportation facilities in Pennsylvania extend to a variety of agencies, communities, advocate organizations, planning partners, and the general public. Many state agencies share PennDOT's goal to improve bicycle and pedestrian travel, including:

- Department of Health – Create or enhance connectivity and access to places for physical activity to reduce costs associated with chronic disease
- Department of Education – Improved sidewalks and safer street crossing for students
- Department of Conservation and Natural Resources – Actively improving parks and nature trails
- Department of Community and Economic Development – Increased property values, employment access, and desirability of communities to attract and retain residents
- Department of Aging – Improved sidewalks and safer street crossing for older citizens
- Department of Environmental Protection – Reduced use of motorized modes (through more walking and bicycling) to reduce air pollution

PennDOT is committed to leading all external partners in a cooperative and inclusive effort that encourages participation and input and improves quality of life for citizens across the Commonwealth.

Part D: Roles and Responsibilities

Entities involved in PennDOT's bicycle and pedestrian policy implementation must commit to a number of roles and responsibilities to ensure the policy's effectiveness. Those roles and responsibilities include, but are not limited to the following:

PennDOT Executive Management

- Set and evaluate policy and adopt policy updates.
- Commit resources to policy implementation.
- Establish the proper metrics, targets, and management controls to ensure that the policy is being consistently implemented and to receive periodic progress reporting.
- Provide leadership and guidance.
- Instill accountability and commitment.

PennDOT Multimodal Deputate

- Oversee the effective and progressive implementation of this policy.
- Create and update the Statewide Bicycle and Pedestrian Master Plan.
- Coordinate with Planning and Programming to develop statewide guidance and training on regional bicycle and pedestrian planning.
- Collect performance data and develop an annual policy implementation report.
- Oversee the creation and delivery of bicycle and pedestrian training and education.
- Provide statewide coordination with District Bicycle and Pedestrian Coordinators.
- Act as single point of contact for bicycle and pedestrian issues.
- Coordinate with Highway Administration Deputate to provide periodic reviews assessing how well the policy is being followed.

PennDOT Planning Deputate

- Coordinate with MPOs/RPOs for planning and programming bicycle and pedestrian projects and facilities.
- Coordinate with the Multimodal Deputate to develop statewide guidance and training on regional bicycle and pedestrian planning.
- Assist in regional and statewide plan development.

PennDOT Highway Administration Deputate

- Ensure compliance of the project development process for bicycle and pedestrian projects.
- Evaluate statewide adherence to performance measures and targets for incorporating bicycle and pedestrian facilities into highway projects.
- Update the Design Manuals and other documents to implement the policy.
- Provide technical assistance.

PennDOT Engineering Districts

- Integrate bicycle and pedestrian facilities into transportation projects, using Regional Bicycle and Pedestrian Plans for guidance.
- Rely upon the District Bicycle and Pedestrian Coordinator as a subject-matter expert on bicycle and pedestrian issues.
- Coordinate with local and regional stakeholders.
- Capture and report performance data.

- Ensure that the County Maintenance program development includes consideration of bicycle and pedestrian improvements.

PennDOT District Maintenance Offices

- Consider the projects, corridors, and other improvement needs identified in Regional Bicycle and Pedestrian Plans when developing the county maintenance program.

PennDOT Highway Occupancy Permit Offices

- Consider the projects and corridors identified in Regional Bicycle and Pedestrian Plans when reviewing Highway Occupancy Permits.

Metropolitan and Rural Planning Organizations

- Develop Regional Bicycle and Pedestrian Plans in accordance with PennDOT guidance and promote regional coordination.
- Identify and fund bicycle and pedestrian improvements through the transportation planning and programming process.
- Coordinate with counties and municipalities to address bicycle and pedestrian needs and connect local entities with state and regional guidance and support.
- Promote bicycle and pedestrian accommodation as a component of local comprehensive plans.
- Provide input on regional bicycle and pedestrian planning and needs through Linking Planning and NEPA screening forms, the Bicycle and Pedestrian Checklist, and project scoping and funding opportunities.
- Solicit local feedback regarding multimodal needs, including contact with municipal representatives and local advocate groups.
- Evaluate policy performance on a regional basis.

Local Government

- Develop and approve ordinances that support desired infrastructure improvements, such as sidewalk maintenance requirements.
- Identify funding for priority bicycle facility maintenance within the municipal boundaries.
- Conduct detailed bicycle and pedestrian planning for specific corridors or subareas.



Section 3: Policy Implementation

Implementation Recommendations

This section offers various recommendations for the Secretary and the Executive Staff to consider as the policy implementation approach is developed. The actions to fulfill the implementation recommendations will vary. Some recommendations will advance activities and procedures that are currently ongoing to better integrate the policy into current practice. Other recommendations are new and may require additional efforts such as a phased-in approach, additional funding resources, increased or supplemental staffing, process definition, and multi-agency involvement.

An Implementation Task Force is recommended and is discussed in greater detail on page 30.

A. Initiate a Phased Project Funding Approach

The recommended bicycle and pedestrian policy specifies a phased approach to policy implementation. The phased approach employs a pilot project effort to build momentum toward full implementation.

- A-1. Identify and reserve adequate funding for Phase 1 projects.
- A-2. Select several Phase 1 pilot projects throughout the state. These projects should be existing highway projects in an early design phase that would benefit from having bicycle and pedestrian facilities added to their design. Stand-alone bicycle and pedestrian projects could also be considered as pilot projects. The pilot projects should be evaluated to determine costs associated with adding bicycle and/or pedestrian facilities during early design. Any lessons learned should be documented for use in the development of a future approach to include bicycle and pedestrian facilities within roadway design. Criteria and measures of effectiveness should be identified for future project development as a result of the pilot effort.
- A-3. Establish a funding approach for the complete and continued integration of bicycle and pedestrian transportation within PennDOT project implementation (Phase 2). Funding may include standard highway/bridge funds, however, bicycle and pedestrian facilities are more likely to be scoped and constructed if dedicated funds are available. See the text box on the following page for a more detailed recommendation.
- A-4. Identify a progression of performance measures and targets for each District to ensure that bicycle and pedestrian improvements are implemented. These targets should be developed and put into effect during Phase 2 in conjunction with the Phase 2 funding approach. See implementation item B for a more detailed recommendation.



Bicycle and Pedestrian Funding and Finance Recommendation

Background

Historically, there has been little federal or state funding dedicated to bicycle and pedestrian infrastructure, with the notable exception of the federal Transportation Enhancement/Transportation Alternatives Program.

In 2013, Pennsylvania passed Act 89, creating a dedicated Multimodal Fund, which provides competitive grants to a variety of multimodal projects. Act 89 also provided for an annual apportionment of \$2 million for bicycle and pedestrian projects. To date, the \$2 million has been used to support applications to the Multimodal Grant fund. In the future, this apportionment will be used for a variety of projects, studies, and improvements for bicycles and pedestrians.

While Act 89 funding provided an important new resource for funding bicycle and pedestrian infrastructure, there remains no dedicated funding for the more overarching need of integrating bicycle and pedestrian facilities with highway capital and maintenance projects.

Existing Funding Sources

Most existing state and federal highway funding sources can be used for bicycle and pedestrian improvements. FHWA publishes a [table](#) as well as [guidance](#) on the type of bicycle and pedestrian projects that can be funded with the major highway and transit funds. Pennsylvania funding sources such as the Motor License Fund and the Liquid Fuels Fund may be used to fund certain bicycle and pedestrian infrastructure.

While many funding sources can be used for bicycle and pedestrian facilities, funding challenges remain. Bicycle and pedestrian needs must be identified and budgeted as early in the project process as possible to ensure that funds are built in. The larger challenge is the fact is that the funding available for transportation projects is insufficient to meet all system preservation and maintenance needs. This leads to cost savings efforts on each project that impacts PennDOT's ability to include appropriate bicycle and pedestrian facilities.

Options

Four options exist for addressing the funding and financing of bicycle and pedestrian improvements:

1. Do nothing – Continue to fund bicycle and pedestrian facilities only in limited situations.
2. Prioritize – Use existing eligible funding sources, prioritizing the locations or projects to which they should be applied.
3. Incentivize – Reward local actions, such as policies or ordinances that support bicycle and pedestrian modes, with an enticement such as additional priority or consideration for state funding.
4. New sources – Identify new sources of funding that can be applied to fund bicycle and pedestrian facilities.

Recommendation

A comprehensive funding approach should include a strategic combination of options 2, 3, and 4 above. Each option, if implemented individually, would provide a welcome improvement in the funding landscape. If applied together, however, the options can complement each other in a synergistic way. Prioritizing locations is an essential step whenever deciding where to apply funding. Incentivizing local support and participation expands the base of support for projects. New sources of funding, especially those that may be dedicated to bicycle and pedestrian facilities, will dramatically expand the number of facilities constructed.



B. Establish Performance Measures and Targets

As PennDOT implements a new bicycle and pedestrian policy, there is an opportunity to introduce a progressive series of useful performance measures and targets. PennDOT leadership has indicated that this is an important element to ensure that bicycle and pedestrian facilities are included with highway projects, and that measures are aligned with available resources.

As partners in the transportation planning and project development process, MPOs and RPOs should have appropriate performance measures and targets to guide their bicycle and pedestrian activities.

The development of performance measures and targets should follow a broad and strategic approach—perhaps with measures developed in phases, over time. Early on, measures may include basic indicators of progress or process improvement. Over time, and through the Statewide Bicycle and Pedestrian Master Plan, more quantitative measures of outcome and impact may be developed. It is important to start somewhere and have a plan and a commitment for adopting measures that matter. The following table highlights some possibilities for bicycle and pedestrian performance measurement. It is important to note the wide range of potential types of measures available to provide useful management information.

Type of Measure	Description	Possible Use/Examples
Improvement Process	A yes-no indication of whether a process improvement plan has been established	Strengthening the use of the Bicycle and Pedestrian Checklist
Benchmark	Other states' practices selected for comparison or adoption	Georgia's use of bicycle and pedestrian warrants
Output (Possible Target)	Quantified results of activities	<ul style="list-style-type: none"> Amount spent on bicycle and pedestrian facilities Number of facilities constructed
System Performance (Possible Target)	Defined effects of bicycle and pedestrian transportation as components of transportation system performance	<ul style="list-style-type: none"> Safety trends Percentage of system with bicycle and pedestrian facilities
Outcome (Possible Target)	Measures that reflect return on investment, benefits, etc.	Percentage of commuters walking or bicycling to work



C. Build Awareness and Training

Policy implementation should include outreach that creates broad awareness of the new policy by employing a communication strategy for a wide variety of audiences. PennDOT should communicate internally about the updated policy, why it is being implemented, and the various roles and responsibilities associated with policy execution. The outreach should be followed by orientation and training for those who will be responsible for carrying out the policy. Strengthening the commitment to policy execution and providing the required knowledge are key to effective actions and outcomes.

- C-1. Focus early communication on general awareness of the policy and basic information about how bicycle and pedestrian transportation will become more systematically integrated into PennDOT's activities.
- C-2. Conduct early outreach with MPOs and RPOs regarding their critical role in carrying out the new policy. This outreach should also be used to identify the range of activities currently in practice at MPOs and RPOs.
- C-3. Leverage existing conferences and meetings to inform audiences about the new policy.
- C-4. Implement a training program that satisfies the knowledge and skill needs of varied audiences. Develop and deliver training on the community benefits of active transportation and technical knowledge related to the planning and design of bicycle and pedestrian facilities. Possible tiers of training for planners, designers, project managers, and other stakeholders is indicated in the table below.



Training	Purpose	Audience
“Bicycle and Pedestrian Basics” Recorded Webinar	Provide staff, consultants, and partners with policy information and basic planning and design concepts.	All staff, consultants, and partners.
Management and Leadership Workshop	Present the policy, roles and responsibilities, and procedural updates to management and leadership to facilitate understanding and buy-in.	PennDOT management and leadership staff
Planning, Programming, and Project Development Workshop	Provide an overview of topics such as: <ul style="list-style-type: none"> • Planning and prioritizing projects • Using Linking Planning and NEPA to identify needs • Using the updated bike/ped checklist • Project funding 	MPO/RPO staff; county/municipal staff; and PennDOT planning and programming, multimodal, highway administration and other staff as appropriate
Bicycle and Pedestrian Design Workshop	Provide detailed information on topics such as: <ul style="list-style-type: none"> • Bicycle and pedestrian facility design • Various design guidance documents • Design flexibility 	PennDOT and consultant project managers, designers, construction staff, and others as appropriate.
Maintenance Workshop	Provide maintenance staff with information about minor improvements that can be made during maintenance activities.	PennDOT maintenance staff

D. Develop an Annual Policy Evaluation Framework

Policies are the foundation of an organization’s procedures and practices. This does not, however, mean that policies are unchanging. Tracking progress is critical to determine whether the bicycle and pedestrian policy is being adequately implemented. A periodic review of progress can be used to evaluate policy implementation, identify policy effectiveness, and adjust the policy and implementation efforts as needed.



- D-1. Establish a yearly timeframe for bicycle and pedestrian policy evaluation.
- D-2. Identify key participants in the evaluation team. Likely participants include:
 - Statewide and District Bicycle and Pedestrian Coordinators
 - Multimodal Deputate staff
 - District project managers
- D-3. Establish an evaluation process such as:
 - Form an evaluation team.
 - Review relevant performance measures being tracked.
 - Review qualitative and anecdotal information on the effectiveness of the policy and its implementation.
 - Identify key policy and implementation issues to address.
 - Identify options to address new issues.
 - Present recommended options to PennDOT leadership for approval.
 - Revise policy and implementation procedures as appropriate.
- D-4. Develop an annual bicycle and pedestrian policy implementation status report, primarily as an internal PennDOT document. Measures or indicators could include the following:
 - How well districts are meeting established targets and metrics.
 - The number of MPOs and RPOs with regional bicycle and pedestrian plans.
 - The number of bicycle and pedestrian improvements completed as compared to those identified in Regional Bicycle and Pedestrian Plans.
 - The percentage of projects with a fully completed Bicycle and Pedestrian Checklist.
 - The number and type of updates made to design manuals.
- D-5. It may take several years to collect enough data to adequately track certain quantitative performance measures. In the interim, qualitative descriptions of progress could be used, such as:
 - Actions taken by the Implementation Task Force
 - Descriptions of process updates put into place
 - Projects involving successful collaboration between the MPO/RPO and PennDOT

E. Leverage Regional Bicycle and Pedestrian Plans

Regional Bicycle and Pedestrian Plans will be developed by MPOs and RPOs throughout the state. These plans will be the foundation for bicycle and pedestrian improvements by identifying and prioritizing specific bicycle and pedestrian facilities as well as the priority corridors where bicycle and pedestrian facilities should be considered when scoping other roadway projects. MPOs and RPOs should closely coordinate with local communities and bicycle, pedestrian, and trail advocacy groups when creating these plans. These plans present an opportunity to identify regional priorities on local roads as well as state roads.



- E-1. Develop guidance that specifies minimum requirements for the Regional Bicycle and Pedestrian Plans. The requirements should not be overly prescriptive, in order to be applicable to all MPOs and RPOs.
- E-2. Include any additional specific directions for developing Regional Bicycle and Pedestrian Plans in the Transportation Program General and Procedural Guidance document provided to MPOs/RPOs. Also address in the MPO/RPO Unified Planning Work Programs.
- E-3. Use the Regional Bicycle and Pedestrian Plans to identify specific bicycle and pedestrian projects as well as to show priority corridors where bicycle and pedestrian improvements should be considered when other improvement projects are planned.
- E-4. Integrate Regional Bicycle and Pedestrian Plans into the MPO/RPO Long-Range Transportation Plans over time to reflect regional support and to integrate bicycle and pedestrian elements into the broader regional transportation plan.

F. Update the Bicycle and Pedestrian Checklist

The Bicycle and Pedestrian Checklist identifies and documents the needs for bicycle and pedestrian facilities when developing transportation projects. Improvements to the Bicycle and Pedestrian Checklist will improve its utility for identifying bicycle and pedestrian needs. Further, management support and direction will help to ensure more consistent use of the checklist.

- F-1. Enhance the link between the Bicycle and Pedestrian Checklist and the Linking Planning and NEPA process so that bicycle and pedestrian needs are identified and budgeted as early as possible.
- F-2. Include objective criteria in the Bicycle and Pedestrian Checklist to help determine whether a bicycle or pedestrian improvement is needed. Georgia DOT utilizes a series of “warrants” to analyze projects in relation to bicycle and pedestrian needs. If a warrant is met, facilities must be included. See the appendix for additional information.
- F-3. Require the completed Bicycle and Pedestrian Checklist to include a brief description of the conditions found and whether/how identified needs should be addressed.
- F-4. Require a written explanation and rationale as part of the Bicycle and Pedestrian Checklist process if bicycle and pedestrian facilities are not being provided.
- F-5. Establish a level of approval authority for the Bicycle and Pedestrian Checklist beyond the person completing it. When a project is located on a corridor identified in a Regional Bicycle and Pedestrian Plan, the MPO or RPO should acknowledge the checklist’s completion.



G. Develop Standard Planning, Mapping, and Database Templates

Successful integration of prioritized bicycle and pedestrian facilities into PennDOT projects will depend upon the availability of accurate, consistent, and timely information. Data from Regional Bicycle and Pedestrian Plans should be in a consistent, statewide format to provide PennDOT with a central source for tracking regional priorities.

- G-1. Develop a statewide bicycle and pedestrian database and mapping layer within PennDOT's Geographical Information System (GIS) similar to the Multimodal Project Management System map (MPMS IQ). It should be used to compile the prioritized projects and corridors identified within Regional Bicycle and Pedestrian Plans.
- G-2. Provide this mapping and data to PennDOT Central Office, Districts, and Maintenance Offices for consultation for planning, project development, and programming purposes. This mapping can also assist in reviewing permits, preparing the county maintenance work programs, and other routine maintenance activities.

H. Provide County Maintenance Guidance

PennDOT maintenance activities offer an opportunity to implement low-cost bicycle and pedestrian improvements. County maintenance activities are planned in advance but have limited funding. These factors require a process that includes early coordination between the MPO/RPO and County Maintenance Office. The MPO/RPO Regional Bicycle and Pedestrian Plan and associated mapping will serve as a useful communication tool to identify priority locations and should be readily available to the County Maintenance Office.

- H-1. Establish a process of coordination between the PennDOT District, MPO/RPO, and the County Maintenance Office.
- H-2. Establish a procedure to review the county maintenance work program alongside the Regional Bicycle and Pedestrian Plan to identify locations for potential targeted improvements.

I. Update PennDOT Publications

Policies are put into action by incorporating their elements into relevant guiding documents. PennDOT publications should be updated to reflect the bicycle and pedestrian policy.

- I-1. Update PennDOT Publications to reflect the updated bicycle and pedestrian policy and any related implementation procedures. First priority should be given to updating the following:



- Design Manual, [Part 1](#), [Part 1A](#), [Part 1B](#), [Part 1C](#), and [Part 1X](#)
 - [Design Manual, Part 2](#)
 - [Traffic Calming Handbook](#), Pub 383
 - [Needs Study Handbook](#), Pub 319
- I-2. Review external bicycle and pedestrian design guidance for appropriateness for Pennsylvania. Guidance that is deemed appropriate should be listed as a reference in the relevant sections of Design Manual, [Part 1](#), [Part 1C](#), and [Part 2](#). The principal design references that should be considered for review include:
- *Guide for the Planning, Design, and Operation of Pedestrian Facilities*, American Association of State Highway and Transportation Officials, 2004.
 - *Proposed Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG)*, U.S. Access Board, 2011.
 - *Guide for the Development of Bicycle Facilities*, American Association of State Highway and Transportation Officials, 2012.
 - *Urban Bikeway Design Guide, 2nd Edition*, National Association of City Transportation Officials, 2013.
 - *Urban Street Design Guide*, National Association of City Transportation Officials, 2013.
 - "Bicycle and Pedestrian Facility Design Flexibility," Federal Highway Administration memo, August 20, 2013.
 - *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach*, Institute of Transportation Engineers, 2014.
 - *Separated Bike Lane Planning and Design Guide*, Federal Highway Administration, 2015.
 - The [Design Resource Index](#) should also be considered for reference.
- I-3. Develop a bicycle and pedestrian facility design guideline document to include PennDOT bicycle and pedestrian design criteria. By consolidating design information, the document will become an easy reference for PennDOT design staff and other stakeholders. This document should be referenced by Department Design Manuals. Several states created their own design guideline document to address specific needs and issues within the state, as documented in the appendix.



Other Considerations

This section lists other recommendations and considerations that would be beneficial to move implementation forward.

J. Publicize and Promote Funding Options and Innovative Approaches

Bicycle and pedestrian facilities can be funded with a wide variety of funding sources. Many sources, however, may not be known to all MPOs, RPOs, and local governments. Publicizing the funding options may enable agencies to assemble a number of different funding sources to provide needed local resources to design and construct bicycle and pedestrian projects.

- J-1. Design an informational brochure, website page, and outreach campaign that describes all funding sources—public and private—available for bicycle and pedestrian projects.
- J-2. At a minimum, include the following:
 - Act 89 Multimodal Transportation Fund – This new source of grant funding has provided two rounds of grants to date.
 - Liquid Fuels Fund – PennDOT Office of Chief Counsel has issued an opinion that bike lanes and markings are allowable Liquid Fuels Fund expenditures.
 - Pennsylvania Infrastructure Bank – The Pennsylvania Infrastructure Bank may be a source of loan funds for bicycle and pedestrian infrastructure.
 - Funding Partnerships – Partnerships with organizations such as schools, universities, economic development organizations, health care systems, major employers, and community groups have been successfully used to complete bicycle and pedestrian projects.
 - PennDOT Agility Program – The Agility Program may be useful in addressing maintenance costs of bicycle and pedestrian facilities with municipalities.
 - Federal Programs – Many federal funding programs may be used to fund bicycle and pedestrian facilities. FHWA has produced a [matrix](#) to describe program eligibility.

K. Define Staff Roles and Evaluate Staffing Needs

Implementation of the updated bicycle and pedestrian policy will require a coordinated effort of staff in the Districts and Central Office. Staff roles should be clear and consistently delineated and staffing needs should be evaluated.

- K-1. Define a set of core roles and responsibilities related to policy implementation for all District Bicycle and Pedestrian Coordinators.
- K-2. Integrate District Planners (as they are hired) into the implementation of the policy. Their role could entail coordination with MPOs and RPOs in bicycle and pedestrian planning and evaluating highway projects for the inclusion of bicycle and pedestrian facilities.



- K-3. Determine if additional staff or resources will be required to ensure adequate policy implementation.

L. Develop Unit Cost Data for Various Bicycle and Pedestrian Improvements

Limited data exists on unit costs for various bicycle and pedestrian improvements. Other states were consulted to determine if they tracked this data. No state had a comprehensive listing of construction unit costs. A detailed database will allow accurate estimates to be created for bicycle and pedestrian improvement projects. This can be developed in small steps over time and be refined and expanded through experience.

- L-1. Establish a database to track unit costs for bicycle and pedestrian facility construction. Establish a process for adding unit costs to the database as projects are completed. This process may include consideration of ECMS Item Price History.

M. Promote Education on Bicycle and Pedestrian Laws

All users share the responsibility for roadway safety. Traffic laws are established to guide the interactions among pedestrians, bicyclists, and motor vehicles for the safety for all. Law enforcement officers are an important component of roadway safety because consistent and proper enforcement of traffic laws promotes increased compliance with the laws, resulting in safer roadways. Providing educational outreach to both roadway users and law enforcement personnel promotes compliance and safety.

- M-1. Promote the current rules and regulations for motorists, bicyclists, and pedestrians in a variety of formats to reinforce the need to comply with all appropriate laws.
- M-2. Identify the locations statewide with the highest number of crashes involving bicycles and pedestrians. Provide educational outreach to residents and local police as part of an overall effort to reduce crashes in these locations.
- M-3. Work with local partners to train law enforcement officers as part of the statewide Community Traffic Safety Programs.

N. Continue State Benchmarking

The appendix provides an overview of bicycle and pedestrian policy and implementation efforts in seven states. As implementation of PennDOT's expanded policy continues, specific issues may come to light that may have been addressed by other states. These issues present an opportunity to benchmark efforts in one or more states.

- N-1. Use the Annual Policy Evaluation process to identify policy and implementation issues to research. Depending on the issue, determine the most appropriate method to research other states' efforts to address the issue. Research methods may include: informal



research using discussion boards and listservs, formal Internet research and telephone interviews conducted by PennDOT staff, and formal Internet research and telephone interviews conducted by consultants through an existing open-end contract.

- N-2. Review benchmarking reports produced by other agencies and use those reports to identify successful new initiatives undertaken by other states. These reports include:
- *Bicycling and Walking in the United States: 2016 Benchmarking Report* (produced every other year)
 - League of American Bicyclists Bicycle Friendly America ratings (updated annually)
 - Pedestrian and Bicycle Information Center's Walk Friendly America ratings (updated annually)



Policy Implementation Cross-Deputate Task Force

During TAC's development of this report, the Department indicated it would establish an implementation task force after the report was adopted by the State Transportation Commission. The Task Force's mission should be three-fold:

1. To consider and modify the policy as appropriate.
2. To develop a roll-out strategy to ensure appropriate awareness of and adherence to the ultimate policy direction and implementation framework.
3. To establish implementation actions, responsibilities, and timelines.

TAC offers the following recommendations associated with the formation of this group:

Task Force Procedural Requirements

The Task Force will:

1. Be chaired by the statewide Bicycle and Pedestrian Coordinator.
2. Be established within 30-45 days of STC adoption.
3. Include representation from the Multimodal, Highway Administration, and Planning deputates.
4. Develop a reasonable schedule for the scope and completion of its work.
5. Provide periodic progress updates to the Secretary of Transportation and the Secretary's Special Assistant.
6. Identify the various management controls essential to ensure broad-based implementation.
7. Present brief progress updates at future TAC meetings (in line with TAC modernization themes, including follow-up on completed studies).

Task Force Charge and Outcomes

The Task Force will be empowered to take action to deliver the following outcomes:

1. Determine which elements of the TAC-recommended policy should be retained and implemented, and determine necessary modifications and enhancements.
2. Identify the methods and approach for an effective roll-out of the ultimate policy to PennDOT staff, MPOs/RPOs, and other key stakeholders.
3. Identify specific publications, manuals, and other procedures to update to reflect the policy's new direction.
4. Establish the general implementation direction for each recommendation in this report.
5. Recommend the establishment of a subcommittee to provide study and implementation direction on any of the recommendations that requires additional time and research for implementation.



Appendix A – Research on Other States

As part of the project's research phase, the study team researched the bicycle and pedestrian programs of seven states. The states were selected based on the quality of bicycle and pedestrian integration efforts undertaken by the state government. The states are: Delaware, Georgia, Maryland, Minnesota, North Carolina, Oregon, and Washington.

Five of the states—Delaware, Maryland, Minnesota, Oregon, and Washington—rank in the top 10 of the League of American Bicyclists' Bicycle Friendly States rankings. Georgia was included because the 2013 University of Pittsburgh Study of Transit, Pedestrian, and Bicycle Guidelines recommended Pennsylvania adopt a bicycle and pedestrian planning process similar to that state. North Carolina was included because it has a long history of supporting bicycle and pedestrian planning, dating back to the passage of the first bicycle law in the nation, the 1974 Bicycle and Bikeway Act.

Each state's policies, plans, design manuals, and related documentation were gathered and analyzed to understand that state's approach to bicycles and pedestrians. The results of the research are summarized in the following tables.



DELAWARE

What is the state's bicycle and pedestrian policy?

A stand-alone [Sidewalk Policy O-02](#) was issued in 1995. The policy outlines under what conditions DeIDOT will provide sidewalks.

[Bicycle Policy D-06](#) was issued in 2000 and requires preserving existing bicycle facilities as the roadway system expands and encourages the placement of new facilities.

[Complete Streets Policy O-6](#) was implemented in 2010 as a result of an executive order. The policy ensures that transportation “system modifications are routinely planned, designed, constructed, operated and maintained in a way that enables safe and efficient access for all users.”

How is performance measured?

No performance measures or regular reports were found.

How is performance reported?

How are bicycle and pedestrian needs examined in highway projects?

Section 10.8.4 of the [Road Design Manual](#) discusses factors influencing the need for pedestrian facilities.

No analysis is specified for bicycle needs.

What guidance is provided to choose the best bicycle or pedestrian facility?

Section 10.8.4 of the [Road Design Manual](#) discusses factors influencing pedestrian facility selection.

Section 10.9.1 of the [Road Design Manual](#) contains a discussion of factors that influence bicycle facility selection.

What design guidance is provided for bicycle and pedestrian facilities?

Some design guidance for bicycle facilities is provided in the 2005 [Bicycle Facility Master Plan](#).

The [Road Design Manual](#) provides design guidance in Chapters 10.8 (sidewalks) and 10.9 (bicycles). The AASHTO Bicycle Design Guide is referenced as an external resource.



GEORGIA	
What is the state's bicycle and pedestrian policy?	Chapter 9 of the Design Policy Manual contains the complete streets policy, which requires "GDOT to routinely incorporate bicycle, pedestrian, and transit accommodations into transportation infrastructure projects."
How is performance measured?	No performance measures or regular reports were found.
How is performance reported?	
How are bicycle and pedestrian needs examined in highway projects?	Section 9 of the Design Policy Manual lists specific warrants that determine under what conditions a bicycle or pedestrian facility should be provided.
What guidance is provided to choose the best bicycle or pedestrian facility?	Section 9.5.2 of the Design Policy Manual provides a subsection on selection of bikeway type. In addition, the manual adopts the guidance published in the 2012 AASHTO Guide for the Development of Bicycle Facilities (AASHTO Guide) for the selection and design of bicycle accommodations.
What design guidance is provided for bicycle and pedestrian facilities?	Section 9.5 of the Design Policy Manual provides design details for facilities. Section 9.1.2 of the Design Policy Manual lists external design documents for reference.



MINNESOTA

What is the state’s bicycle and pedestrian policy?

Stand-alone [Complete Streets Policy](#) OP004 was implemented in 2010 as a result of state law requiring the policy. The policy requires “that the principles of ‘Complete Streets’ are to be considered at all phases of planning and project development.” [Engineering Technical Memorandum](#) No. 14-08-TS-02 provides policy implementation guidance to planners and engineers.

How is performance measured?

Chapter 8 of the 2015 [Statewide Bicycle System Plan](#) contains eight key performance measures divided among the categories of Ridership, Safety, and Assets.

How is performance reported?

The Minnesota [Complete Streets Performance Snapshot](#) is produced annually, though not focused entirely on bicycles and pedestrians.

How are bicycle and pedestrian needs examined in highway projects?

The Bikeways and Pedestrians section of the [Highway Project Development Process](#) (HPDP) requires the consideration of bicycles and pedestrians in all projects unless legally prohibited, and specifies four types of locations that should be prioritized for the inclusion of bicycle and pedestrian infrastructure.

Chapter 11-3.03 of the [Road Design Manual](#) provides several criteria that may indicate the need for pedestrian facilities.

The MN [Bikeway Facility Design Manual](#) provides additional guidance for bicycle needs.

What guidance is provided to choose the best bicycle or pedestrian facility?

Section 4-2.2 of the MN [Bikeway Facility Design Manual](#) contains tables that help determine the appropriate bicycle facility.

Section 11-3.06 of the [Road Design Manual](#) provides recommended pedestrian facilities based on the roadway type.

What design guidance is provided for bicycle and pedestrian facilities?

The MN [Bikeway Facility Design Manual](#) provides detailed design guidance. The AASHTO Bicycle Design Guide is referenced as an external resource.

Section 11-3.0 of the [Road Design Manual](#) provides pedestrian facility design guidance. Several external design documents are referenced.



NORTH CAROLINA

What is the state’s bicycle and pedestrian policy?

A stand-alone [bicycle policy](#) was adopted in 1978 as a result of enabling legislation in 1974. The policy requires that “bicycle facility planning be included in the state thoroughfare and project planning process.”

A 1993 stand-alone [sidewalk policy](#) allows NCDOT to work with local governments to add sidewalks in coordination with highway improvement projects.

The 2012 stand-alone [complete streets policy](#) “requires that NCDOT’s planners and designers will consider and incorporate multimodal alternatives in the design and improvement of all appropriate transportation projects within a growth area of a town or city.”

How is performance measured?

No performance measures or regular reports were found.

How is performance reported?

How are bicycle and pedestrian needs examined in highway projects?

The NC [Complete Streets Planning and Design Guidelines](#) specifies how to use the land use and transportation context to determine bicycle and pedestrian needs.

What guidance is provided to choose the best bicycle or pedestrian facility?

The NC [Complete Streets Planning and Design Guidelines](#) describes how to use the land use and transportation context to select the appropriate facility.

What design guidance is provided for bicycle and pedestrian facilities?

The NC [Complete Streets Planning and Design Guidelines](#) provides detailed street cross sections as design guidance. It references external guidance from AASHTO and NACTO.

No design guidance was found in the Roadway Design Manual.



MARYLAND

What is the state’s bicycle and pedestrian policy?

A stand-alone [complete streets policy](#) adopted in 2012 “requires that all State Highway Administration (SHA) staff and partners consider and incorporate complete streets criteria for all modes and types of transportation when developing or redeveloping our transportation system.”

In 2014, SHA issued its Policy for Accommodating Bicycles and Pedestrians on State Highways (referenced in the [Bike Design Guidelines](#)), which states, “The SHA shall make accommodations for bicycling and walking a routine and integral element of planning, design, construction, operations and maintenance activities as appropriate.”

How is performance measured?

Chapter 4 of the 2014 [Bicycle and Pedestrian Master Plan](#) lists 15 performance measures. Seven of the performance measures are recommended to be used in an Annual Attainment Report.

How is performance reported?

How are bicycle and pedestrian needs examined in highway projects?

Based on policy, bicycles and pedestrians must be considered in every project.

What guidance is provided to choose the best bicycle or pedestrian facility?

Chapters 1 and 2 of the MD [Bicycle Policy and Design Guidelines](#) describe bicycle facilities and their design. No specific guidance is provided to determine the appropriate facility.

No pedestrian design selection criteria was found.

What design guidance is provided for bicycle and pedestrian facilities?

The MD [Bicycle Policy and Design Guidelines](#) provide design guidance. External design documents are referenced within the Guidelines.



OREGON	
What is the state's bicycle and pedestrian policy?	The 1971 Oregon Bike Bill requires that “footpaths and bicycle trails, including curb cuts or ramps as part of the project, shall be provided wherever a highway, road or street is being constructed, reconstructed or relocated.”
How is performance measured?	Recommended performance measures are included in Appendix D of the 2015 Draft Bicycle and Pedestrian Plan .
How is performance reported?	An annually updated performance measure report tracks the percentage of state highways in urban areas with walkways and bikeways.
How are bicycle and pedestrian needs examined in highway projects?	Based on the Bike Bill , bicycles and pedestrians are to be planned for in all projects.
What guidance is provided to choose the best bicycle or pedestrian facility?	Chapter 1 of the OR Bicycle and Pedestrian Design Guide provides roadway contexts that guide selecting the appropriate facility.
What design guidance is provided for bicycle and pedestrian facilities?	The OR Bicycle and Pedestrian Design Guide provides detailed design guidance and references external design documents that provide additional information.



WASHINGTON

What is the state’s bicycle and pedestrian policy?

Section 1510.04 of the [Design Manual](#) requires that “bicycle and pedestrian facilities be given full consideration in the planning and design of new construction and reconstruction highway projects, except where bicycle and pedestrian use is prohibited.”

There is a stand-alone [Livable Communities Policy](#) that requires WSDOT to work with its partners to “foster multimodal transportation systems that enhance communities.”

How is performance measured?

Chapter 3 of the 2008 [Bicycle Facilities and Pedestrian Walkways Plan](#) lists plan objectives and their associated implementation steps and performance measures.

How is performance reported?

No annual performance reporting was found. Intermittent bicycle and pedestrian performance reports are issued in the “[Gray Notebook](#).”

How are bicycle and pedestrian needs examined in highway projects?

Sections 1102 and 1103 of the [Design Manual](#) describe how to select Modal Compatibilities using the Transportation and Land Use Context of the project.

What guidance is provided to choose the best bicycle or pedestrian facility?

Section 1520.03 of the [Design Manual](#) provides a graphic to help determine the appropriate bicycle facility for a roadway. Additional text discussion is included in Section 1520.

Section 1510 of the [Design Manual](#) provides text and drawings to determine the appropriate pedestrian facility.

What design guidance is provided for bicycle and pedestrian facilities?

Detailed design guidance is provided in [Design Manual](#) Sections 1510 and 1520. A list of external design documents are referenced as supporting information.