PennDOT Bicycle and Pedestrian Planning and Design
Bicycle and Pedestrian Planning and Design

Statewide Bicycle and Pedestrian Master Plan

Design Guidance and PennDOT Project Example
Statewide Bicycle and Pedestrian Master Plan

- Outline a vision and framework for improving conditions for walking and bicycling across Pennsylvania, most notably for those Pennsylvanians who walk and bicycle out of necessity rather than for leisure and recreation.

- Identify and help prioritize strategies that increase the number of people walking and bicycling, while supporting safety and multimodal connectivity throughout the state.
Statewide Bicycle and Pedestrian Master Plan

Community Survey

- Primary Public Out-Reach effort
- Over 13,000 responses
- Capture information on barriers to walking and biking
Statewide Bicycle and Pedestrian Master Plan

2017 Plan Focal Points

- Safety
- Access
- Community Health
- Equity
Statewide Bicycle and Pedestrian Master Plan

Safety

Reduce Bicycle Related Crashes from 2017

- 21 Fatalities - Up 30% - and 1127 Injuries
- **Reported** bicycle crashes represent 1.0% of all crashes but 1.8% of fatalities
Statewide Bicycle and Pedestrian Master Plan

Safety

Reduce Pedestrian Related Crashes from 2017

- **150 Fatalities** and **4086 Injuries**
- Ages 0-19 accounted for **7%** of fatalities and **29%** of injuries
- Pedestrian crashes represent **3.2%** of all crashes but **13.2%** of fatalities
Statewide Bicycle and Pedestrian Master Plan

Access

Access is critical to underserved, disabled, or disadvantaged populations

• Approximately 1 in 7 Pennsylvanians had a disability between 2012 and 2018
• 27% of those disabilities involved mobility issues
• 47% of the population with disabilities had two or more types of disability
• 71.6% of those with disabilities were over age 65
The transportation system is designed to move people and goods efficiently; however, there is a growing awareness across communities that transportation systems impact quality of life and health*

*https://www.cdc.gov/transportation/
Statewide Bicycle and Pedestrian Master Plan

Community Health - Diabetes

$9.3 Billion in Direct Costs

$3.5 Billion in Indirect Costs

Equity

A central goal of transportation equity is to facilitate social and economic opportunities through equitable levels of access particularly for populations that are traditionally underserved.
OUTCOMES

Engaged Communities to Develop Active Transportation Plans

More Competitive Non-Motorized Grant Applications for Multimodal Funding

Well-Rounded TIP Projects via PennDOT Connects

Improved Inter-Agency Coordination

DOT Objectives, Goals and Performance Measures
Engineering

NEW FACILITY DESIGNS COMING TO A ROAD NEAR YOU
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- Roadway design intended to be self-enforcing
- Accommodating all modes, ages, and abilities
- Seen as long term solutions / not as flexible over time / expensive
- Constrained by legislation in some cases
- Standards change over time
Small Town and Rural Multimodal Networks

Achieving Multimodal Networks: Applying Design Flexibility and Reducing Conflicts

Separated Bike Lane Planning and Design Guide

Bicycle Facilities and the Manual on Uniform Traffic Control Devices (MUTCD)
AASHTO GREEN BOOK Design Flexibility

The intent of this policy is to provide guidance to the designer by referencing a recommended range of values for critical dimensions.

Good highway design involves balancing safety, mobility, and preservation of scenic, aesthetic, historic, cultural, and environmental resources.

This policy is therefore not intended to be a detailed design manual that could supersede the need for the application of sound principles by the knowledgeable design professional.

Sufficient flexibility is permitted to encourage independent designs tailored to particular situations.
PennDOT Projects

CAPITOL COMPLEX PEDESTRIAN PROJECT: EDC CASE STUDY
Before and After: Raised Intersection
Before and After: Raised Crosswalk
Before and After: Bike Lane
Before and After: Refuge Median
Survey Results

Significant Increase in Use of Crosswalk
Questions?

I HAVE SOME FOR YOU...
Designing For These?

**UPS E-Assist Delivery Bikes**
- Holds up to 400 lbs of cargo
- Requires rider to actively pedal
- Currently in 30 major cities and now Seattle, WA
How about these?

Pedal Assisted E-Bike with Cab
• 20 mph with throttle along and up to 30 mph
• Carries up to 550 lbs

Basic E-Scooter
• Up to 15 mph but top speed adjustable by vendor software
• Carries one person + gear
And This?

- 45 MPH
- 40 Mile Range
- Independent suspension
- Hydraulic Brakes
- Weighs 70 lbs.
36 inches is your design standard