



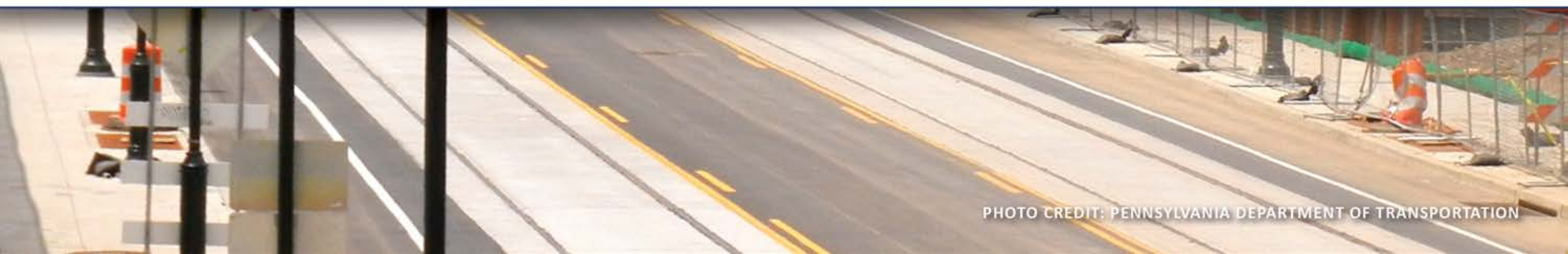
TIP Actions

Transportation Improvement Program

Pennsylvania TIP (FY2017-2020)

New Jersey TIP (FY2018-2021)

January 2018

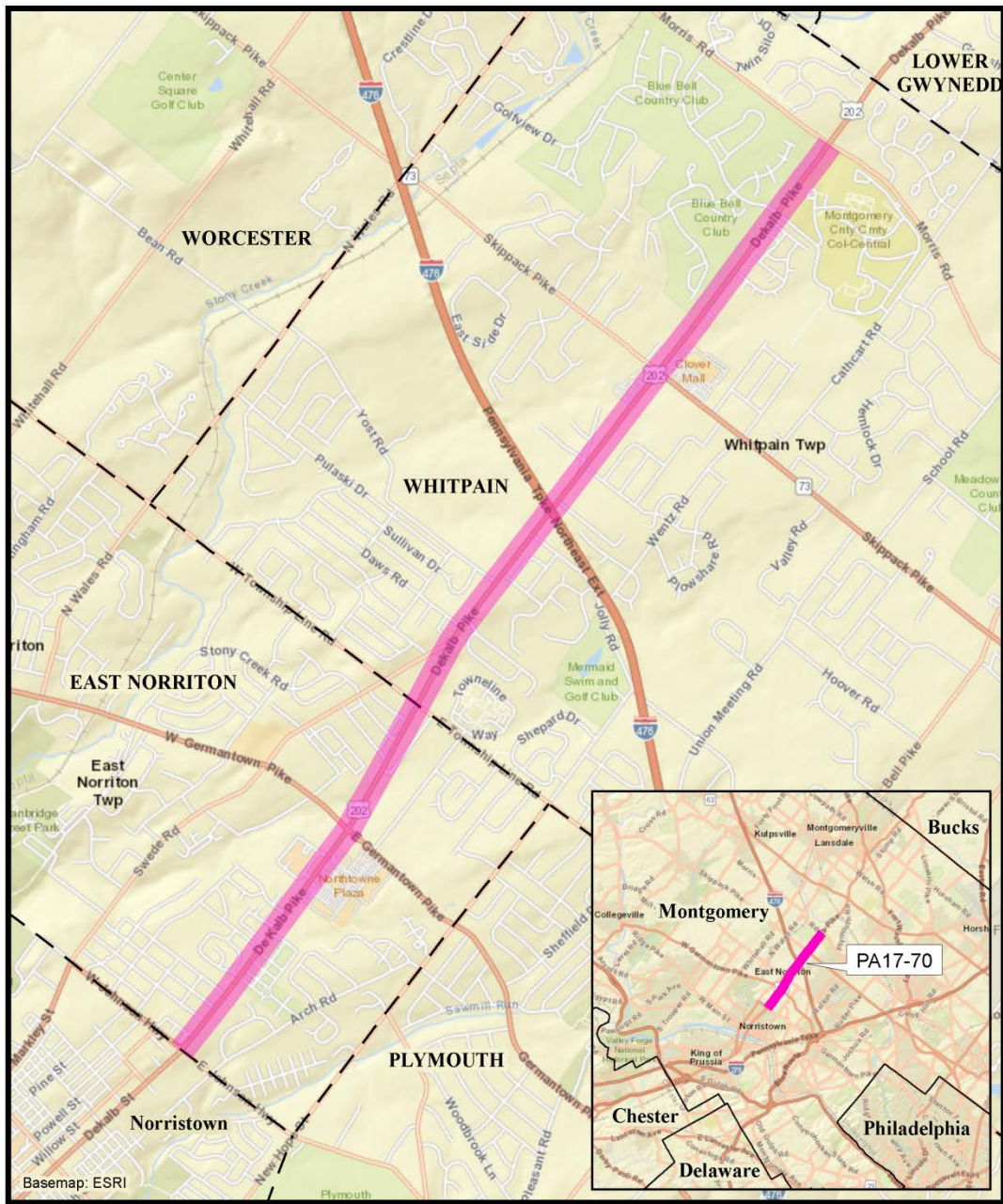


US 202, DeKalb Pike, Section 610 (Design Only)

Montgomery County | Increase FD Phase

- ▶ **Action Type:** TIP Amendment
- ▶ **Action:** Increase FD by \$11,230,000
 - FY18 FD \$2,404,000 STU/\$2,848,000 State 581
 - FY19 FD \$4,000,000 STP/\$1,000,000 State 581;
 - FY20 FD \$782,000 STU/\$196,000 State 581.
- ▶ **Reason:** Additional stormwater Best Management Practices (BPMs) are being proposed.





TIP Action | Proposed – PA

Amend the PA TIP for the Following Project:

a. US 202, DeKalb Pike, Section 610 (Design Only)

That the RTC Recommend that the Board approve amending the TIP by increasing the FD phase by \$11,230,000:

- FY18 FD \$2,404,000 STU/\$2,848,000 State 581
- FY19 FD \$4,000,000 STP/\$1,000,000 State 581;
- FY20 FD \$782,000 STU/\$196,000 State 581.

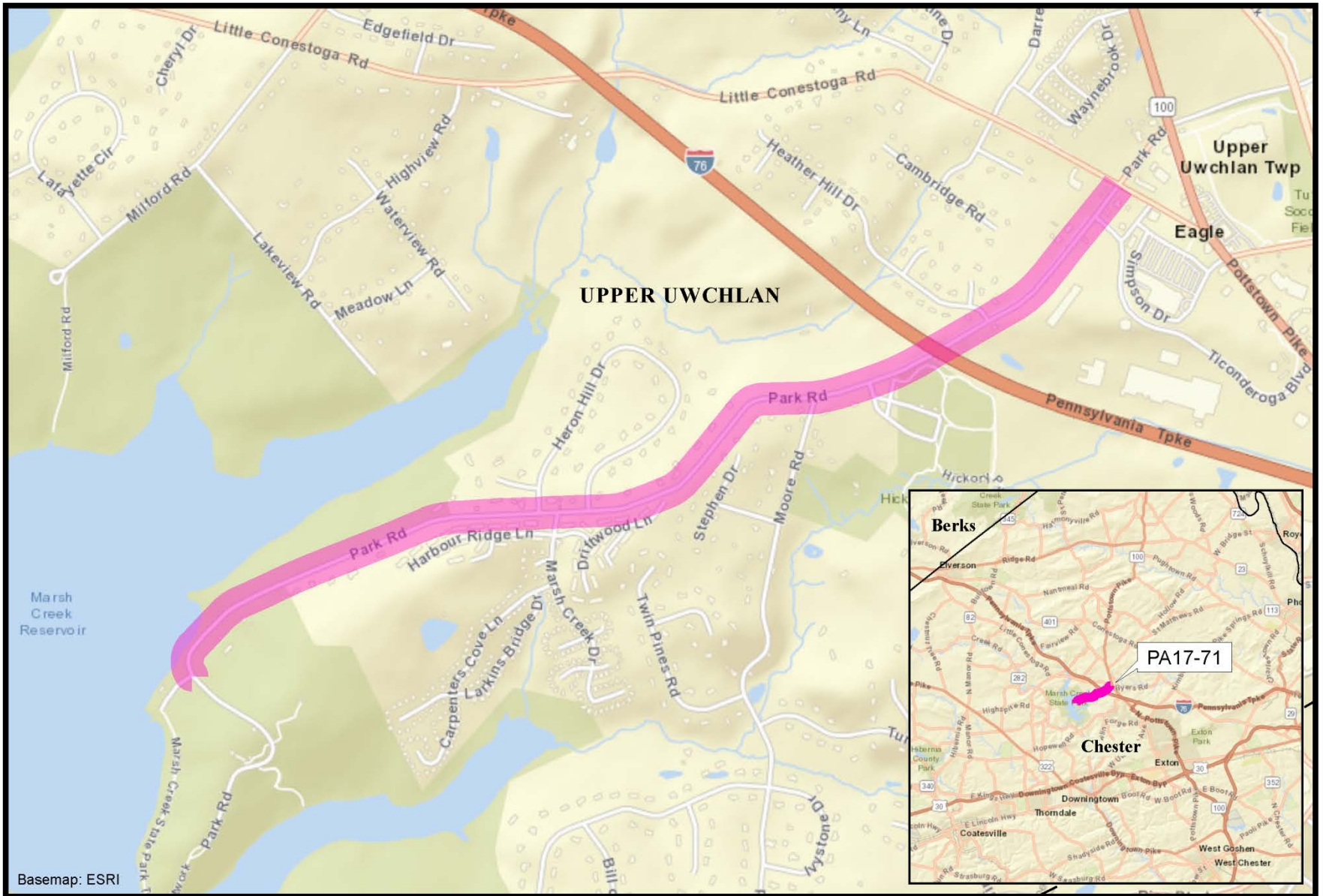


Park Road Trail, Chester County | Add Project Back into TIP

- ▶ **Action Type:** TIP Amendment
- ▶ **Action:** Add a \$2,500,000 CAQ/Toll Credit construction project back into the TIP in FY18.
- ▶ **Reason:** Construction phase was not obligated under previous TIPs.
 - Pre-construction phases were 100% locally funded



PA17-71: Park Road Trail



TIP Action | Proposed – PA

Amend the PA TIP for the Following Project:

b. Park Road Trail

That the RTC Recommend that the Board approve amending the TIP by adding \$2,500,000 CAQ/Toll Credit construction project back into the TIP in FY18.



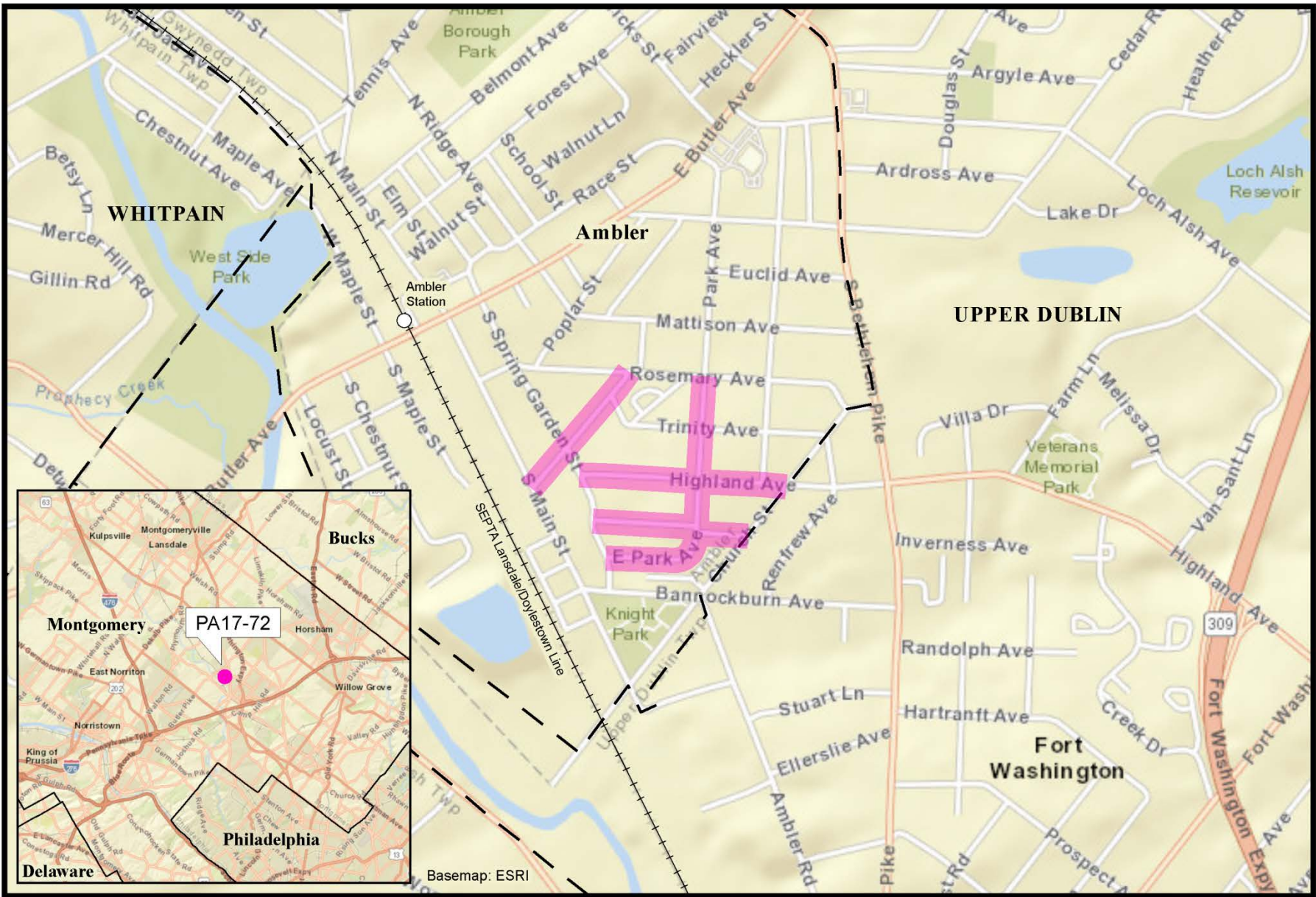
Ambler Pedestrian Sidewalk Improvements

Montgomery County | Add Project Back into TIP

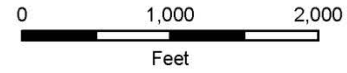
- ▶ **Action Type:** TIP Amendment
- ▶ **Action:** Add \$355,000 STU/Toll Credit construction phase back into the TIP in FY18, and update project description to remove earmark language.
- ▶ **Reason:** Construction funding was not obligated under the previous TIP, and earmark funding was repurposed to US 422, (New) Expressway Bridge Over Schuylkill River (SRB) project in Summer of 2017.



PA17-72: Ambler Pedestrian Sidewalk Improvements



Basemap: ESRI



TIP Actions | Proposed – PA

Amend the PA TIP for the Following Projects:

c. Ambler Pedestrian Sidewalk Improvements

That the RTC Recommend that the Board approve amending the TIP by adding \$355,000 STU/Toll Credit construction phase back into the TIP in FY18, and updating the project description to remove earmark language.





Transportation
Improvement
Program

TIP

Thank You!

www.dvrpc.org/TIP



FY 2018

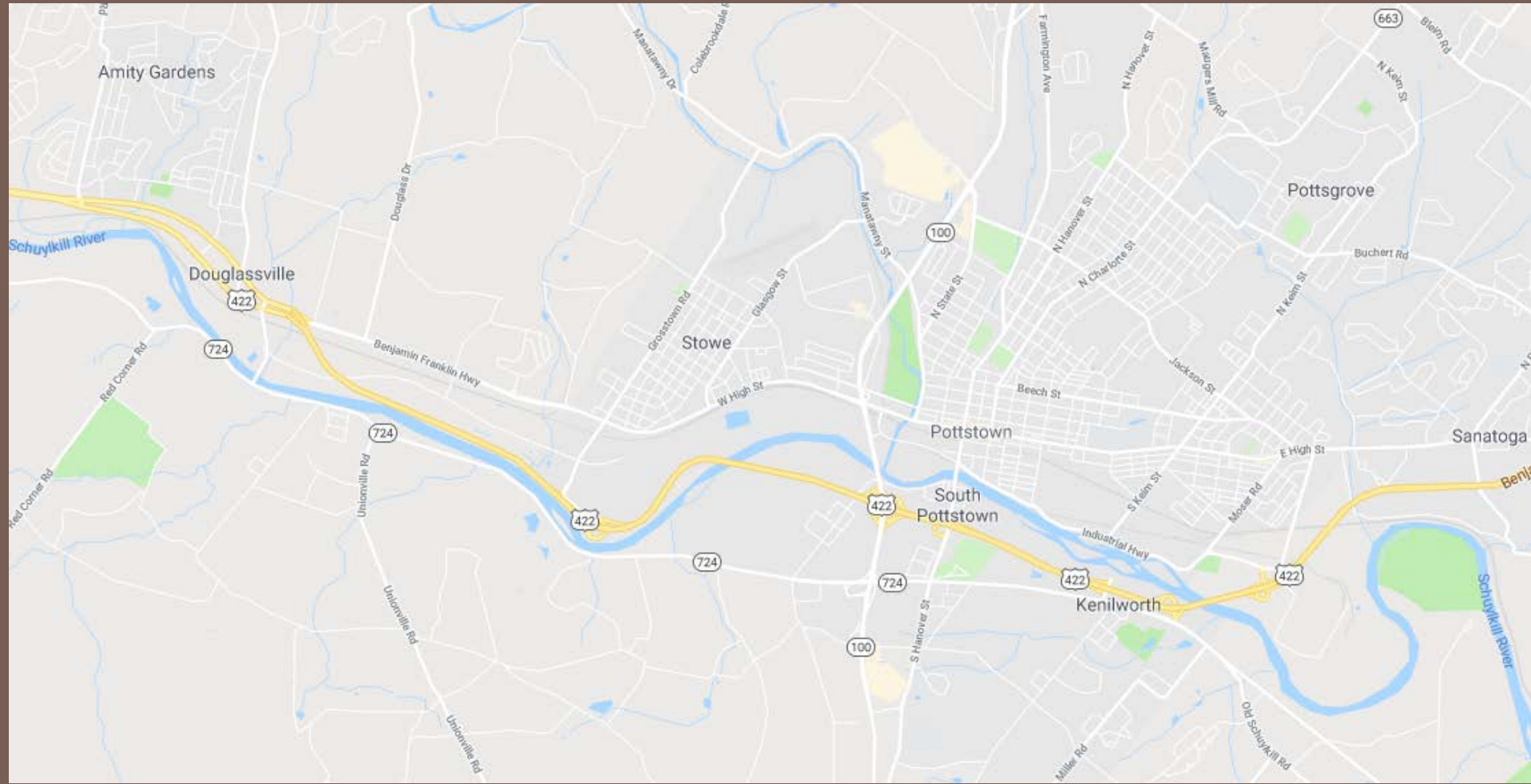
WORK PROGRAM AMENDMENT

US 422 Pottstown Bypass Traffic Forecasts

January 9, 2018
RTC Meeting

Matt Gates

US 422 Pottstown Bypass



US 422 Traffic Forecasts

- 2025 and 2045 Traffic Forecasts
- No-Build and Build Alternatives
- Starts in FY 2018; ends in FY 2019
- \$131,700
- MPMS 14698

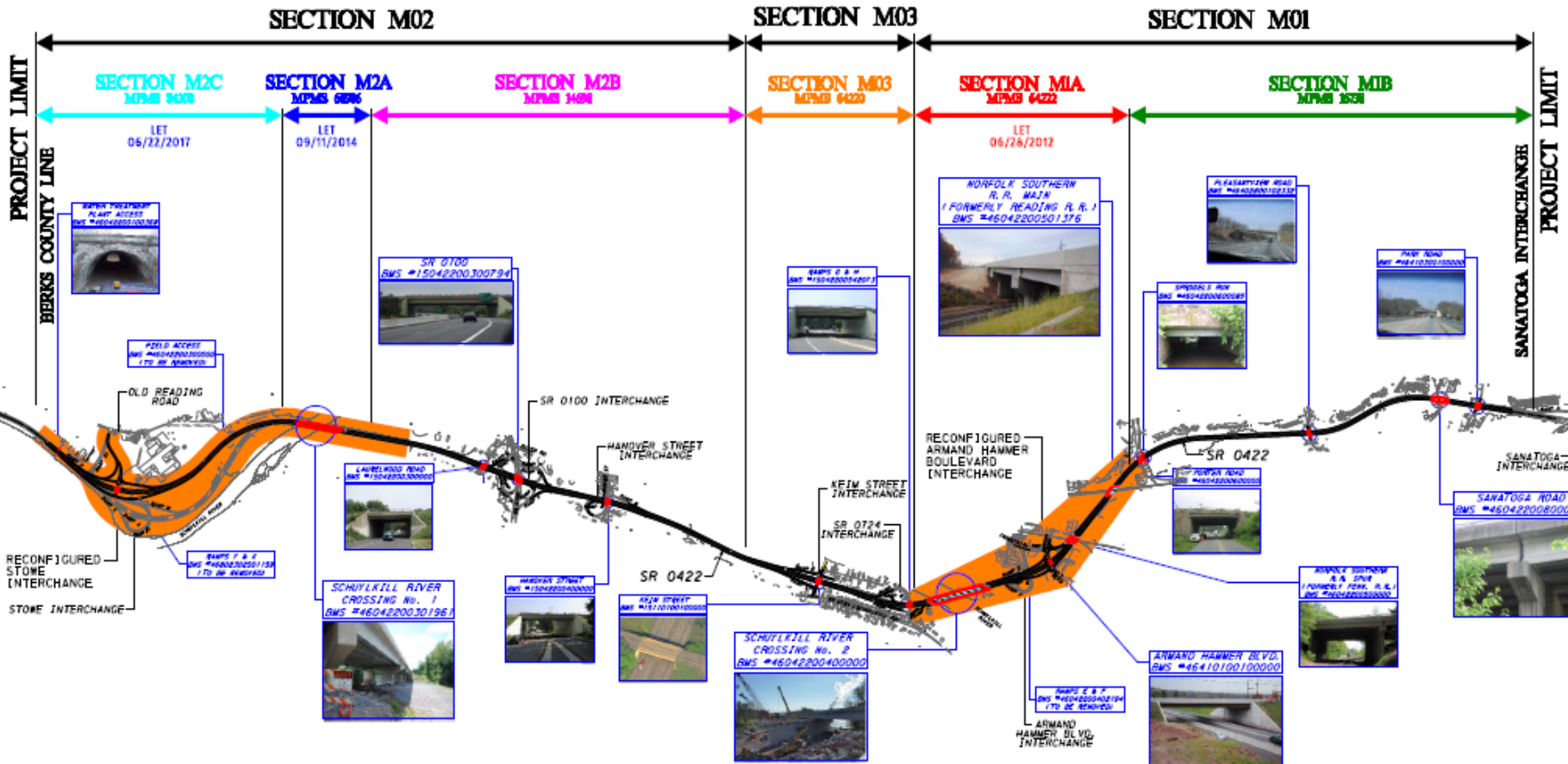
MPMS 14698 – US 422, Reconstruction (M2B)

Description		Funding		Milestones		Comments	
		TIP Program Years (\$000)					
Phase	Fund	2017	2018	2019	2020	2021-2024	2025-2028
FD	581	0	1322	0	0	0	0
FD	NHPP	0	5289	0	0	0	0
ROW	581	0	0	158	0	0	0
ROW	NHPP	0	0	630	0	0	0
UTL	NHPP	0	0	450	0	0	0
UTL	581	0	0	113	0	0	0
CON	581	0	0	0	6609	9968	0
CON	STU	0	0	0	0	4872	5436
CON	SPK-NHPP	0	0	0	21000	35000	0
Fiscal Year Total		0	6611	1351	27609	49840	5436
Total FY 2017 - 2020 Cost					35571		

S.R. 0422 (Pottstown Bypass) PROJECT



PROJECT LIMITS - SECTIONS M01, M02 & M03



Action Requested

- That the RTC recommend the Board amend DVRPC's FY 2018 Planning Work Program to include the US 422 Pottstown Bypass Traffic Forecasts and acknowledge that this work will be funded from MPMS number 14698.

DVRPC's Pedestrian Facilities and Planning Portal

Part 3 of the Sidewalk Inventory Project

Kim Korejko
Manager, Data Coordination
January 9, 2018

Three Components

1. Regional GIS Dataset
2. Online public engagement platform
3. Pedestrian Facilities and Planning Portal

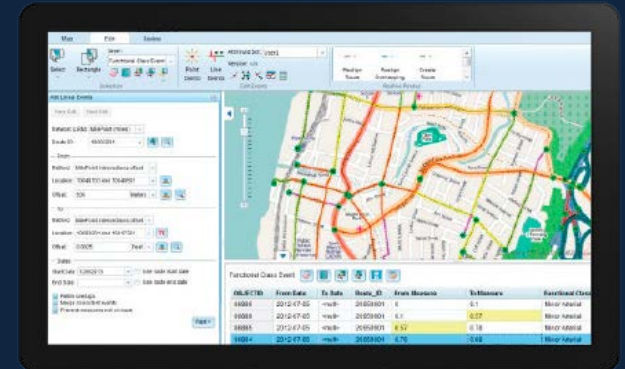
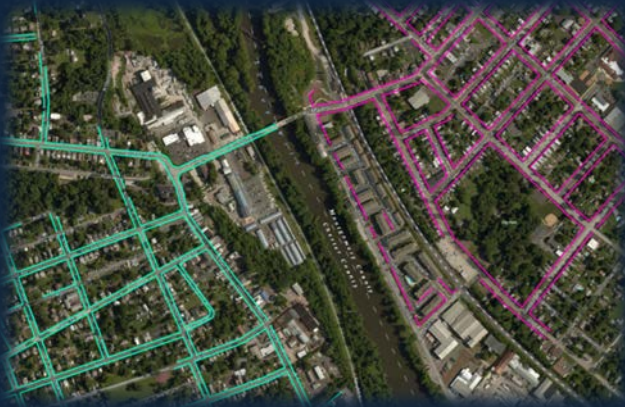
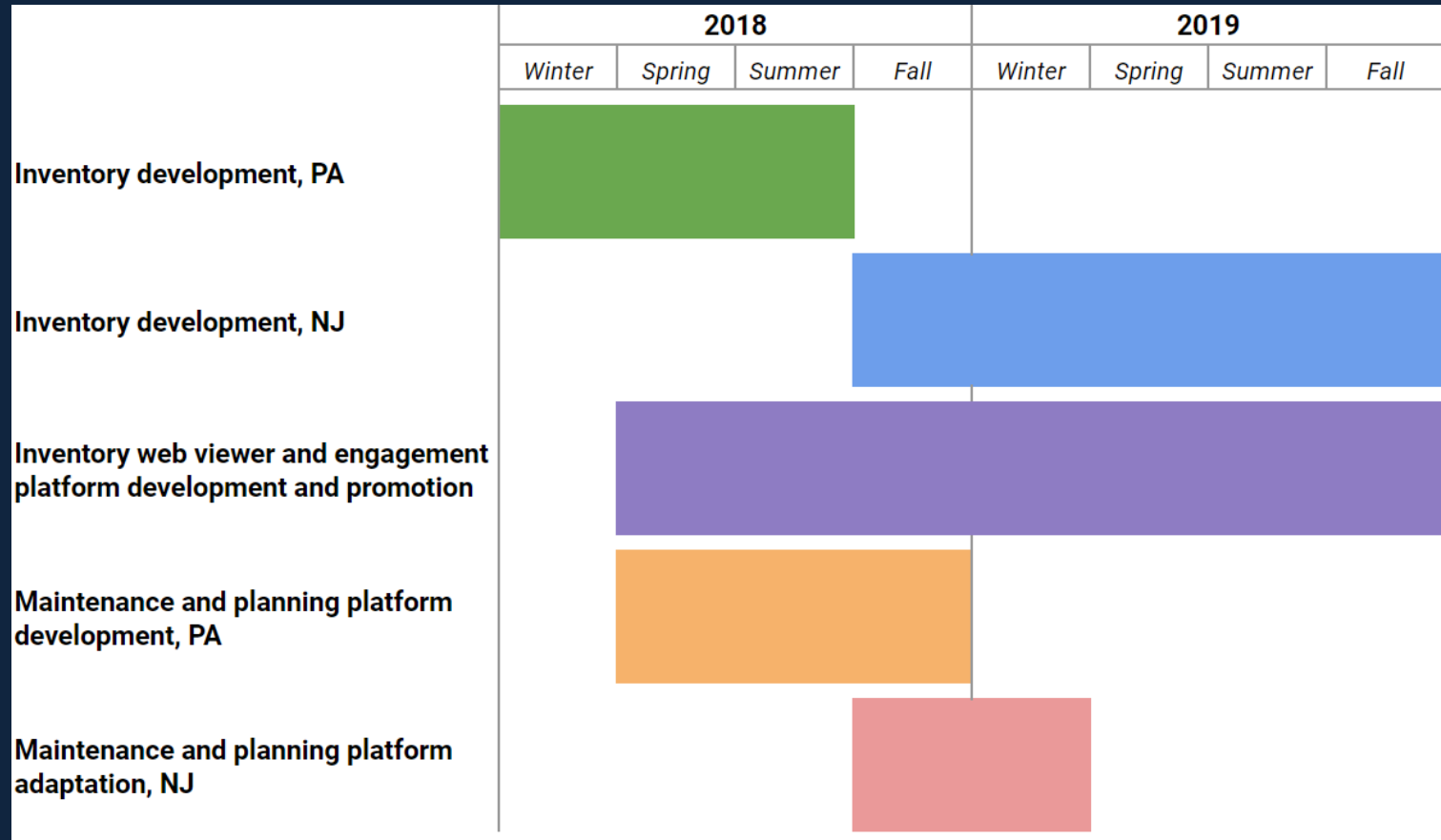


Photo credit:
Mark Mathosian - <https://www.flickr.com/photos/markgregory/28197098672>

Timeline



What we'd like to do with a regional sidewalk inventory

- Continue to improve the inventory
- Share the product with our planning partners via Pedestrian Facilities and Planning Portal
 - provide access to and accommodate maintenance of the regional sidewalk inventory by local entities
 - allow local and regional planning partners to share their pedestrian facility priorities (such as those identified in their comprehensive/master plans or those for which they seek grant funding) on an interactive map

Requested Action

Recommend that the Board approve to amend the FY 2018 Planning Work Program to include the **Pedestrian Facilities and Planning Portal**.

Thank you!

Kim Korejko
kkorejko@dvrpc.org



FY 2018

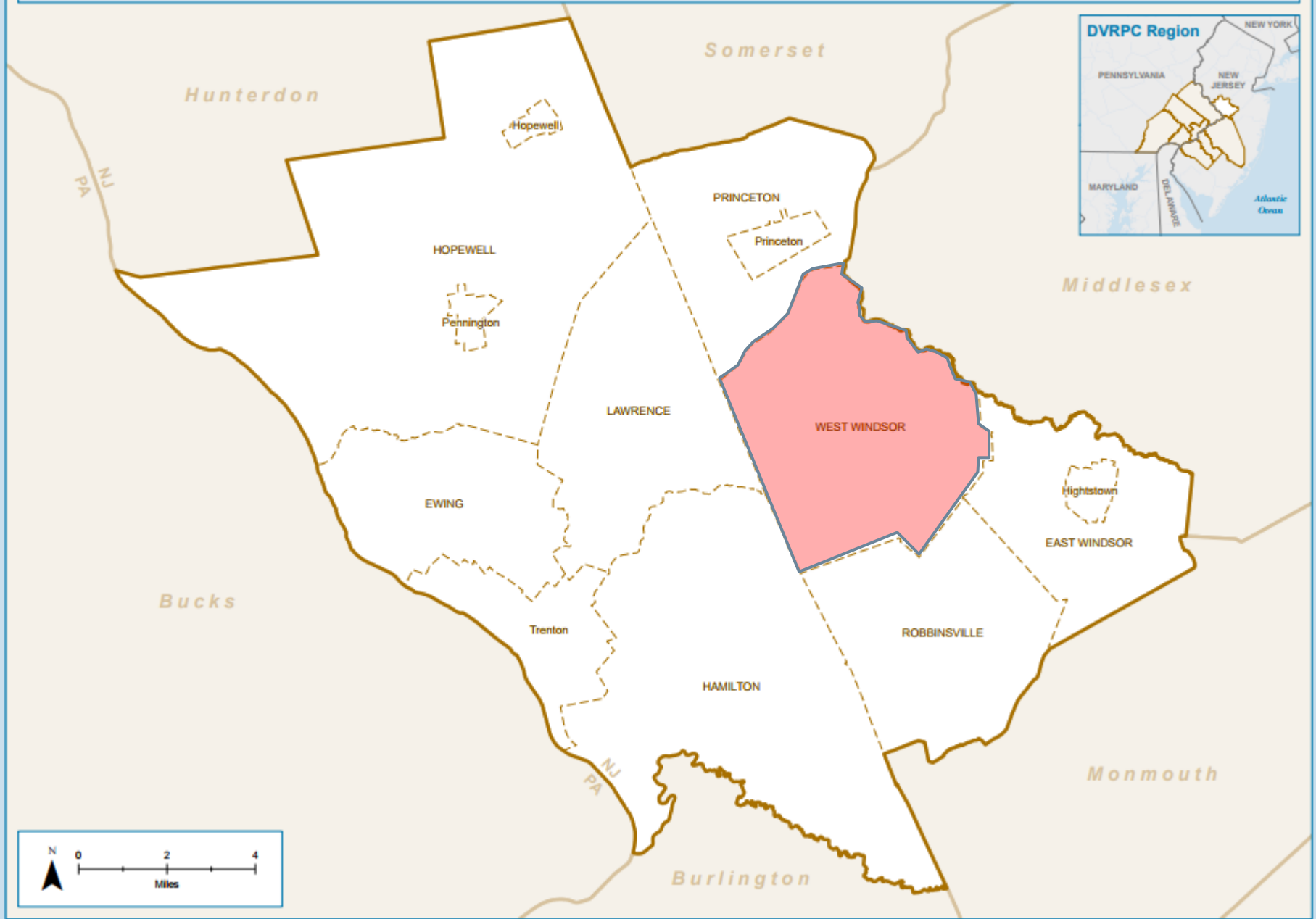
WORK PROGRAM AMENDMENT

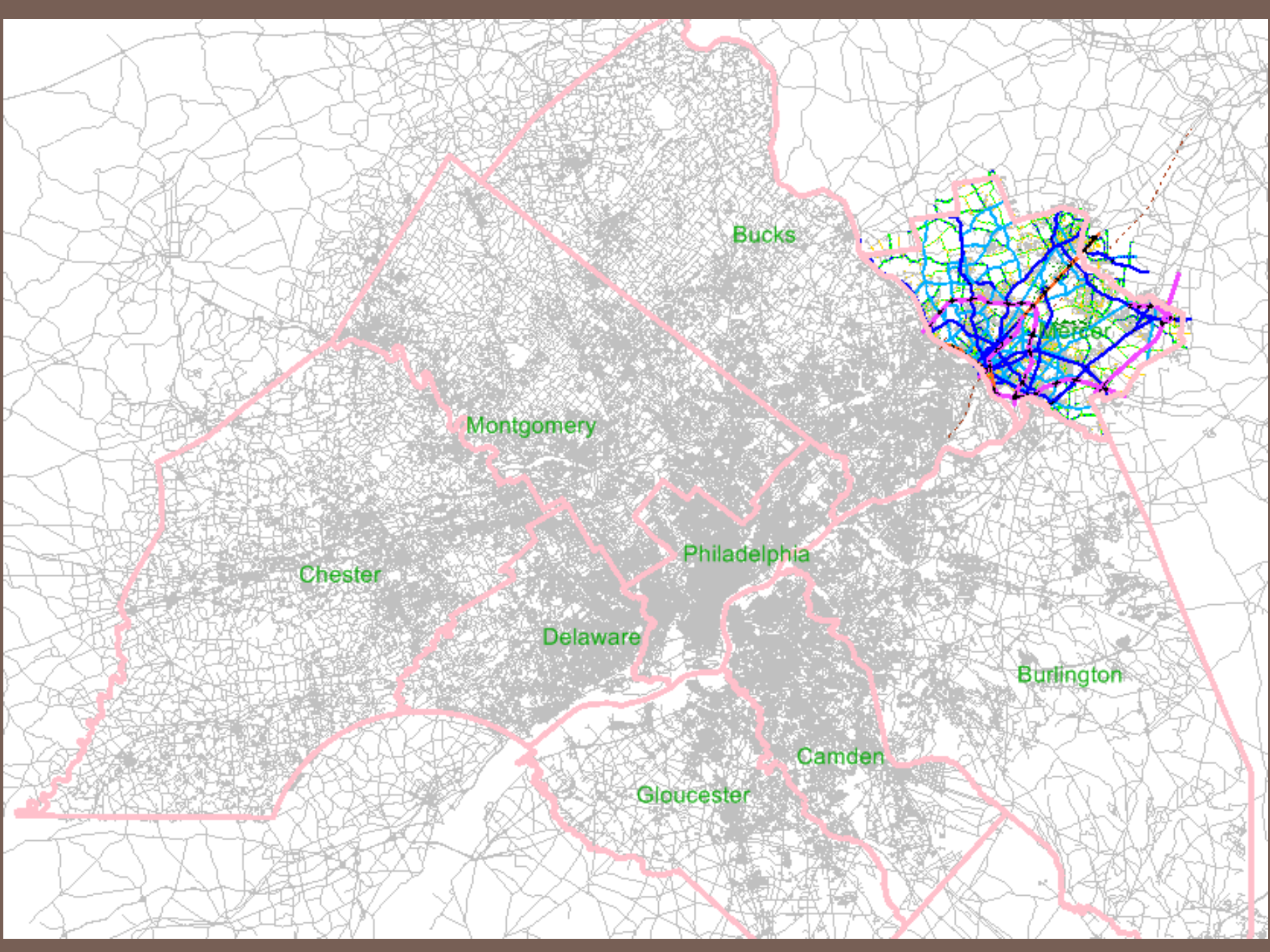
West Windsor Township Traffic Model

January 9 2018
RTC Meeting

Matt Gates

Municipalities within Mercer County, NJ





West Windsor Twp Travel Model

- Full 4-step travel demand model
- Sub-Network of DVRPC's TIM2.3 model
- 2015-2045 analysis years
- Calibrated to Mercer Co. traffic & transit volumes
- Funding from Arora and Associates
 - ▣ \$23,120
- Initiated and completed in FY 2018

Action Requested

- That the RTC recommend the Board amend DVRPC's FY 2018 Planning Work Program to include the West Windsor Township Traffic Model

January 9, 2018 | RTC Meeting

Transportation Alternatives Set-Aside Program (TA)



*DVRPC Office of Project Implementation
PENNDOT Project & Program Management*

DELAWARE VALLEY
dvrpc
REGIONAL
PLANNING COMMISSION

 **pennsylvania**
DEPARTMENT OF TRANSPORTATION

What is TA?

- ▶ Fast Act
- ▶ Money has been set aside for Large MPOs
 - ▶ DVRPC Region – approximately \$12 Million
- ▶ Statewide - \$55+ Million
- ▶ Competitive Program

Eligible TA Projects



Bicycle & Pedestrian Facilities



Bicycle and Pedestrian Education / Encouragement



Conversion of Abandoned Railway Corridors to Trails



Construction of Turnouts, Overlooks, and Viewing Areas



Outdoor Advertising Management

Eligible TA Projects



Historic Preservation & Rehab of Transportation Facilities



Vegetation Management



Archaeological Activities



Stormwater Management



Wildlife Mortality Mitigation

Selection Process

- ▶ Establish Selection Committee
 - ▶ Five PA Counties, PennDOT, SEPTA, PPTF, DVRPC, DCED, & DCNR
- ▶ Develop Selection Criteria
 - ▶ Project Readiness and Quality of Project – 4 criteria for each
- ▶ Weight Criteria using Decision Lens Software
- ▶ Open Application Period (July 10 – September 22)
 - ▶ Published Program Guidance
 - ▶ Held Individual Project Meetings
 - ▶ Maintained Program Website
(<https://www.dvrpc.org/TAP/PA/>)

Regionally Selected Projects

TA Projects Selected for Regional Funds

Project	Amount
Neshaminy Greenway Trail (Core Creek Park to Woodbourne Road)	\$995,000
Iron Work Creek Sidewalk	\$894,000
Kennett Area Safer Active Transportation Routes	\$915,000
Paoli Trail, Segment A	\$483,000
Pennsy Trail – Phase 2 Improvements	\$1,163,000
Jenkintown to Pennypack Trail	\$715,000
Parkside Cynwyd Trail Extension	\$534,000
North Broad Street – Vision Zero Priority Corridor	\$300,000
Renewing Philadelphia’s Historic Streets	\$1,000,000
Restoration of Historic Shawmont Station	\$1,000,000
Total	\$7,999,000

Statewide Highly Recommendations

TA Projects Recommended for Statewide Funds	
Highly Recommended Projects	Amount
Shady Retreat SRTS Trail	\$985,000
Lower Makefield Twp. Community Trail Connection	\$700,000
Route 82 Crosswalks and sidewalk	\$750,000
State Road Sidewalks	\$1,280,300
Octoraro Trail Construction – Phase 1	\$1,163,000
Walkable Chadds Ford	\$1,000,000
Corinthian Trail	\$740,000
Limekiln Pike Multimodal Safety Initiatives	\$750,000
Lower Salford Sidewalk for SR 113 and Park Ave	\$505,000
American Cities Phase 3 – Lambertson School	\$919,000

Statewide Highly Recommendations

TA Projects Recommended for Statewide Funds	
Highly Recommended Projects	Amount
Bldv Pedestrian Safety & Direct Bus Improvements	\$1,000,000
Broad & Locust Modified Urban Intersection	\$1,347,000
Cramp Elementary School Traffic Safety Improvements	\$995,000
Frankford & Belgrade Improvements	\$300,000
Franklin Square Pedestrian Access Project	\$432,000
Manayunk Canal Lower Locks Preservation Project	\$1,000,000
Mid-Block Crossings in University City	\$1,000,000
North Broad Street – Vision Zero Priority Corridor	\$700,000
South Philadelphia Street Sidepath, Phase 1	\$935,000
Subtotal	\$16,501,300

Statewide Recommendations

TA Projects Recommended for Statewide Funds	
Recommended Projects	
Aquetong Park Segment – Route 202 Cross-Country Trail	\$1,000,000
Greeley Avenue Storm Sewer Improvements Project	\$1,000,000
My School on the Move Program	\$111,000
Media Borough Ridge Road Stormwater Improvements	\$400,000
I Love You and Your Brain Too – Bike Helmet Safety	\$51,000
Kriebel Road Trail	\$846,000
Main Street Pedestrian Improvements	\$682,000
Whitpain Twp. Trail network – Core Connector III	\$642,000
City Ave Project	\$750,000
Safe Routes Philly – Vision Zero Youth Education	\$420,000
Subtotal	\$5,902,000
Statewide Total	\$22,403,300

Proposed Action

▶ That the RTC recommend that the Board approve the list of projects identified to be funded with the DVRPC regional sub-allocation of Transportation Alternatives Set-Aside Program funds, and that the list of projects be amended into the FY 2017 TIP (TIP Action PA17-74) for \$7,999,000 TAU in the Transportation Alternatives Line Item – MPMS #64984 (funding for individual projects will be drawn down at the appropriate time); also that the RTC recommend the Board approve the remaining TA regional funds of approximately \$4,000,000 to be used for regionally significant trail projects in the future, including projects in the Circuit Line Item – MPMS #105291; and that the RTC recommend the Board approve the TA subcommittee’s recommended statewide TA list of projects be sent to PennDOT Central Office for consideration for funding as part of the statewide TA selection process. Note that the TA Line Item - MPMS #64984 will be updated to reflect the FAST Act’s TA funding allocation to the region.

→ Regional Trails Program: Phase V NJ Grant Awards

Regional Technical Committee Meeting

January 9, 2018



Proposed Grant Awards

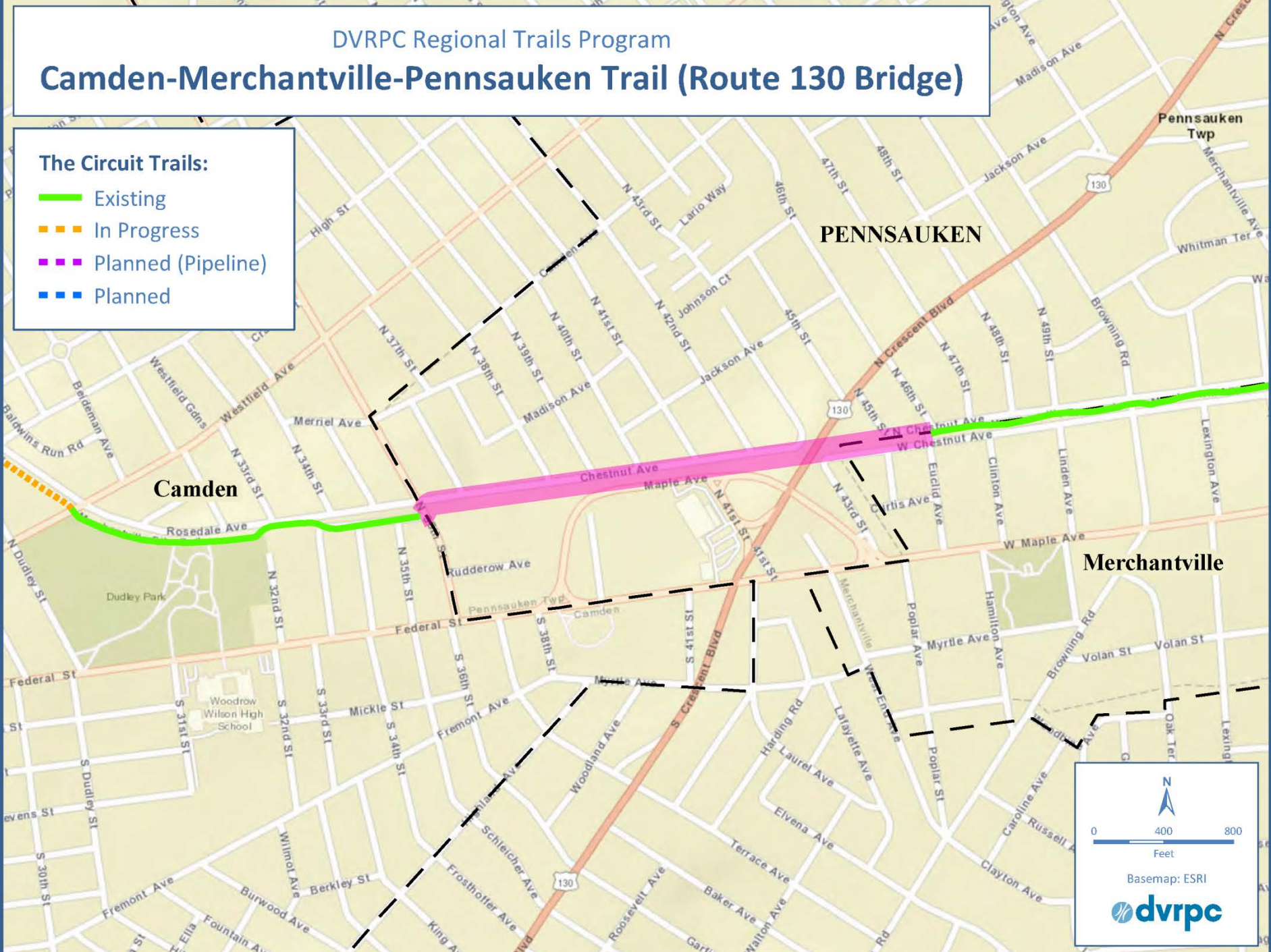
- 1. Bridge over NJ 130 (feasibility study) - Sponsor: Camden County - \$14,575**
- 2. Cross Camden County Trail: Upper Great Egg Harbor Segment (preliminary engineering) - Sponsor: Camden County - \$200,000**
- 3. Stony Brook-Millstone Spur (construction) – Sponsor: Stony Brook-Millstone Watershed Association - \$64,968**

DVRPC Regional Trails Program

Camden-Merchantville-Pennsauken Trail (Route 130 Bridge)

The Circuit Trails:

-  Existing
-  In Progress
-  Planned (Pipeline)
-  Planned



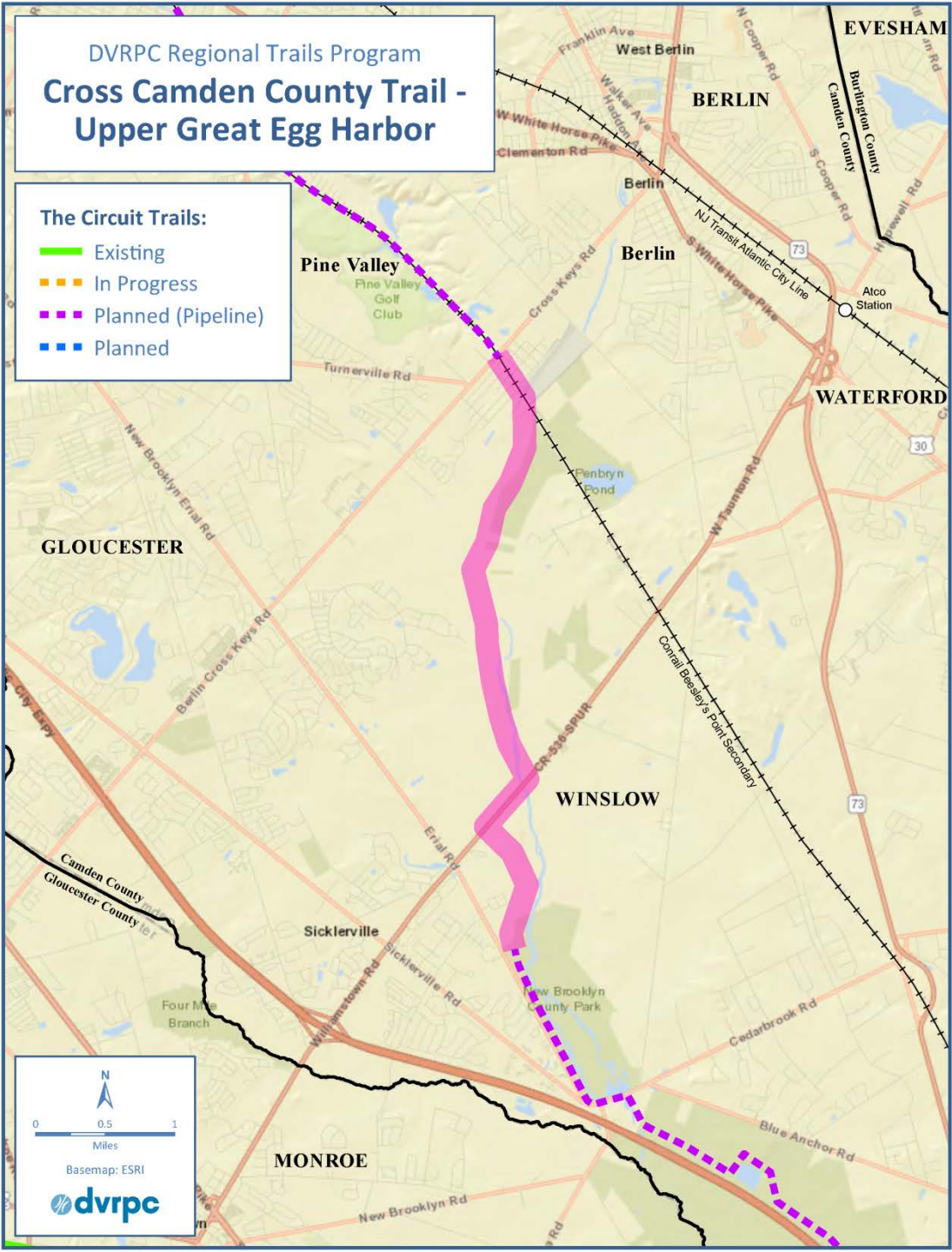
0 400 800
Feet

Basemap: ESRI



DVRPC Regional Trails Program
**Cross Camden County Trail -
Upper Great Egg Harbor**

- The Circuit Trails:**
- Existing
 - In Progress
 - Planned (Pipeline)
 - Planned



N

0 0.5 1
Miles

Basemap: ESRI

DVRPC Regional Trails Program
Stony Brook-Millstone Spur

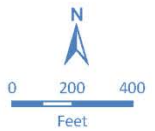
The Circuit Trails:

- Existing
- In Progress
- Planned (Pipeline)
- Planned

HOPEWELL

Stony Brook-Millstone
Watershed Association

Centerville



Basemap: ESRI



DVRPC Regional Trails Program
New Jersey Phase V Additional Grant Awards

**THE
CIRCUIT
TRAILS**

Phase V
Project Location

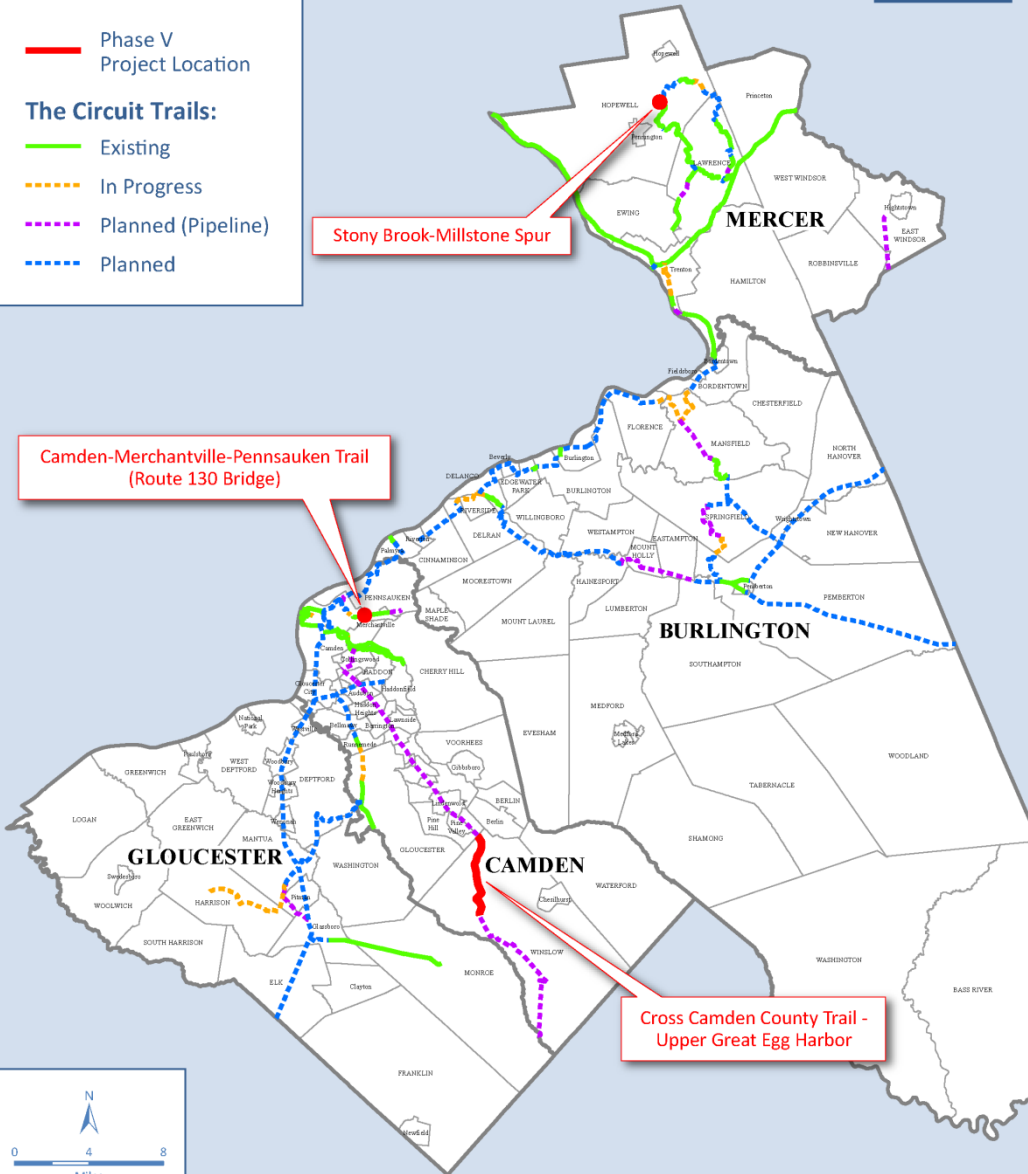
The Circuit Trails:

- Existing
- In Progress
- Planned (Pipeline)
- Planned

Stony Brook-Millstone Spur

Camden-Merchantville-Pennsauken Trail
(Route 130 Bridge)

Cross Camden County Trail -
Upper Great Egg Harbor



Action Proposed

The RTC recommends that the Board approve these three additional Phase V New Jersey Regional Trails Program grant awards.

DVRPC FY 2019 Unified Planning Work Program

*Regional Technical Committee Meeting
January 9, 2018*

*John Ward
Deputy Executive Director*

DVRPC Draft FY19 UPWP Development

- Process started August/September 2017
- Stakeholders submitted ideas September/October
- Board Work Program Committee met in October
- Staff worked with stakeholders to refine scopes in November
- Staff presented Draft to Board in December (out for public comment)
- Final UPWP to RTC/Board for adoption in January
- Deliver to funding agencies by March 2018

DVRPC Draft FY19 UPWP Development

- One of the three most important DVRPC documents
- Addresses federal requirements from the FAST Act
- Reflect the Policy Direction provided by the DVRPC Board
- Developed jointly with member governments and Federal Agencies

DVRPC Draft FY19 UPWP Development

- Includes the recommended priority idea from each Board Member
- Advances a diverse and comprehensive set of planning activities
- Overall budget for DVRPC operations increases < 1% vs FY18 while budget for Pass-Thru activities increases by 32% vs FY18
- Some projects require approval from non-core funding sources such as the TIP
- Other projects are subject to competitive funding programs which will not be decided upon until Spring 2018

DVRPC Draft FY19 UPWP Development

Funding Sources

Core Formula Federal Funds from FAST Act

PA State Funds (Matching Funds)

Member Government Contributions (Matching Funds)

Grants

TIP

Competitive Programs

DVRPC Draft FY19 UPWP Development

Three Key Parts of the Document

Table B

Program Area and Project Descriptions (Chapter 2)

Pass Through Program (Chapters Three and Four)

Supportive Regional Highway Planning Program

Transit Support Program

DVRPC Draft FY19 UPWP Development

Comments

- NJ Department of Transportation
- Pennsylvania Department of Transportation (pending)
- City of Philadelphia
- NJ Circuit Coalition
- Center for Peace and Global Citizenship
- The Bicycle Coalition of Greater Philadelphia

DVRPC Draft FY19 UPWP Development

Recommended Action:

that the RTC recommend that the Board adopt the Final DVRPC FY2019 Unified Planning Work Program pending the resolution of any outstanding comments and issues as well as, approval of TIP Actions to amend the FY 2018 NJ TIP and the FY 2017 PA TIP as required.

TPM Technical Implementation Workshop

Performance Based Planning and Programming (PBPP)

**Delaware Valley Regional Planning Commission (DVRPC)
Regional Technical Committee (RTC)**

January 9, 2018

Dan Walston – Transportation Planner
FHWA – Pennsylvania Division



U.S. Department of Transportation
Federal Highway Administration



Performance Measures

PM Requirements for States and MPOs:

- Safety (fatalities and serious injuries)
- Pavement Condition
- Bridge Condition
- System Performance (travel time)
- Freight Movement (travel time)
- CMAQ (delay and emissions)



PBPP: Planning Agreements

MPO(s), State DOTs, and Public Transit Agencies shall establish written agreements for a metropolitan area describing roles and responsibilities for PBPP including (23 CFR 450.314(h)):

- Coordination on Target Setting
- Data Collection
- Data Analysis
- Reporting on Progress Toward Target Achievement
- Data Collection for the NHS Asset Management Plan



PBPP: LRTP and State DOT LRTP

The LRTP and State DOT LRTP shall include:

- Performance measures and targets
- A description of progress made toward target achievement since the plan's last update



PBPP: STIP and TIP

- The TIP shall be designed to promote achievement of the performance targets in the plan
- The STIP and TIP shall, to the maximum extent practicable, describe how the investments in the STIP and the TIP make progress toward achievement of the targets in the plan.



Implementation Timeline (Web-version available)

Final Rule	Effective Date	States Set Targets By	MPOs Set Targets By	State DOT LRTP, MPO LRTP, STIP and TIP Inclusion
Safety Performance Measures (PM1)	April 14, 2016	Aug. 31, 2017	Up to 180 days after the State sets targets, but not later than Feb. 27, 2018	Updates or amendments on or after May 27, 2018
Pavement/ Bridge Performance Measures (PM2)	May 20, 2017	May 20, 2018	No later than 180 days after the State(s) sets targets	Updates or amendments on or after May 20, 2019
System Performance Measures (PM3)	May 20, 2017	May 20, 2018	No later than 180 days after the State(s) sets targets	Updates or amendments on or after May 20, 2019



PBPP: Target-Setting Coordination

MPO Target Setting:

- An MPO **may** establish its own quantifiable performance targets or
- An MPO **may** adopt a State's performance targets and support the State's efforts at achieving those targets

Either way, the MPO is establishing targets



MPO Safety Performance Measure Targets

Safety Performance Measures

Five safety targets are required for State DOTs and MPOs:

- Number of Fatalities
- Number of Serious Injuries
- Rate of Fatalities per 100 million VMT
- Rate of Serious Injuries per 100 million VMT
- Number of Nonmotorized Fatalities and Nonmotorized Serious Injuries

MPO Safety Performance Measure Targets

In collaboration with state and federal partners, DVRPC proposes to:

- ***Adopt States' targets and support the States' efforts at achieving those targets***

MPO Safety Performance Measure Targets

Performance Measure	<u>PA Statewide Targets</u>		<u>NJ Statewide Targets</u>	
	5-year Rolling Averages		5-year Rolling Averages	
	TARGET 2014-2018	BASELINE 2012-2016	TARGET 2014-2018	BASELINE 2012-2016
Number of Fatalities	1,177.6	1,220.2	586.0	571.0
Rate of Fatalities*	1.161	1.220	0.778	0.762
Number of Serious Injuries	3,799.8	3,434.0	1,105.0	1,135.6
Rate of Serious Injuries*	3.746	3.433	1.467	1.516
Number of Nonmotorized Fatalities & Serious Injuries	654.4	602.4	386.5	390.3

*per 100 million VMT

MPO Safety Performance Measure Targets

- **How do MPOs report targets?**
 - State(s) and MPO mutually agree on the manner in which the MPO reports the targets to its respective DOT(s)
 - PA: Sign-off Letter
 - NJ: Letter to NJDOT from DVRPC Executive Director

Proposed Action:

- Recommend that the Board adopt the Safety Performance Measure Targets to be Consistent with the Pennsylvania and New Jersey Statewide Targets and Support the States' Efforts at Achieving Those Targets

PBPP/TPM Resources

- TPM Website: <http://www.fhwa.dot.gov/tpm/>
- Implementation Timeline – New
<https://www.fhwa.dot.gov/tpm/rule/timeline.pdf>
- Planning Capacity Building Website:
<http://www.planning.dot.gov>
- Asset Management Website: <http://www.fhwa.dot.gov/asset/>
- FHWA MAP-21 Website: <http://www.fhwa.dot.gov/map21>



MPO Safety Performance Measure Targets-PA

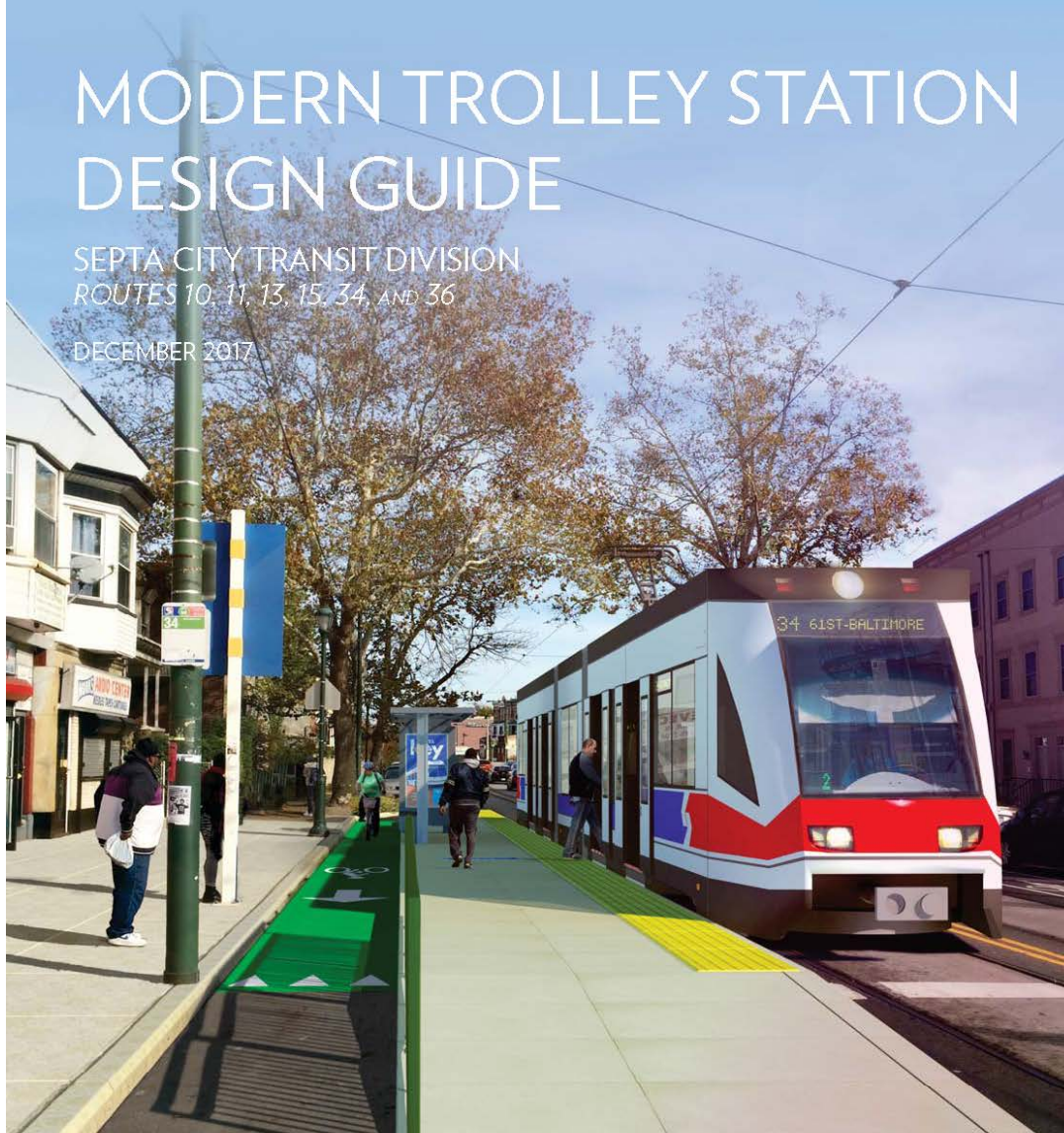
Performance Measure	<u>PA Statewide Targets</u>		<u>DVRPC Regional Targets</u>	
	5-year Rolling Averages		5-year Rolling Averages	
	TARGET <i>2014-2018</i>	BASELINE <i>2012-2016</i>	TARGET <i>2014-2018</i>	BASELINE <i>2012-2016</i>
Number of Fatalities	1,177.6	1,220.2	235.7	245.0
Rate of Fatalities*	1.161	1.220	0.967	1.018
Number of Serious Injuries	3,799.8	3,434.0	859.7	787.0
Rate of Serious Injuries*	3.746	3.433	3.526	3.266
Number of Nonmotorized Fatalities & Serious Injuries	654.4	602.4	234.4	226.8

*per 100 million VMT

MODERN TROLLEY STATION DESIGN GUIDE

SEPTA CITY TRANSIT DIVISION
ROUTES 10, 11, 13, 15, 34, AND 36

DECEMBER 2017



REGIONAL TECHNICAL COMMITTEE

1/9/18



PCC-II

Kawasaki LRV

1981

How to Ride SEPTA's New

Light Rail Vehicle



**This Light Rail
Vehicle — called an LRV
for short — is very special.**

It is dramatically different from the old trolley cars in more than 70 major ways. Those changes are all around you providing vastly improved comfort, convenience and communications.

This leaflet tells you how to use the new LRV and its features...



Southeastern Pennsylvania Transportation Authority

9/1/81 graphics





2018



Image Credit: Flickr user Paul Sableman (CC BY 2.0)

STREETSCAPE CHALLENGES



PROJECT STAKEHOLDERS

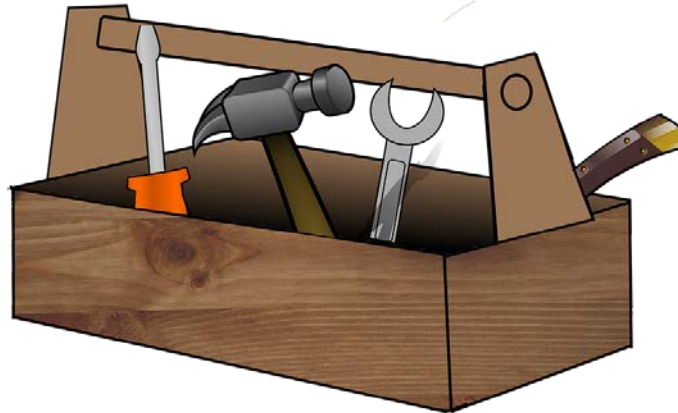


CORE AGENCY STAKEHOLDERS



OUTREACH GROUP

- Bicycle Coalition of Greater Philadelphia
- University City District
- Philadelphia Water Department
- Delaware County Planning Department
- NACTO



FUTURE OUTREACH GROUP

- Stakeholder Agencies
- Neighborhood Groups
- Advocacy Groups

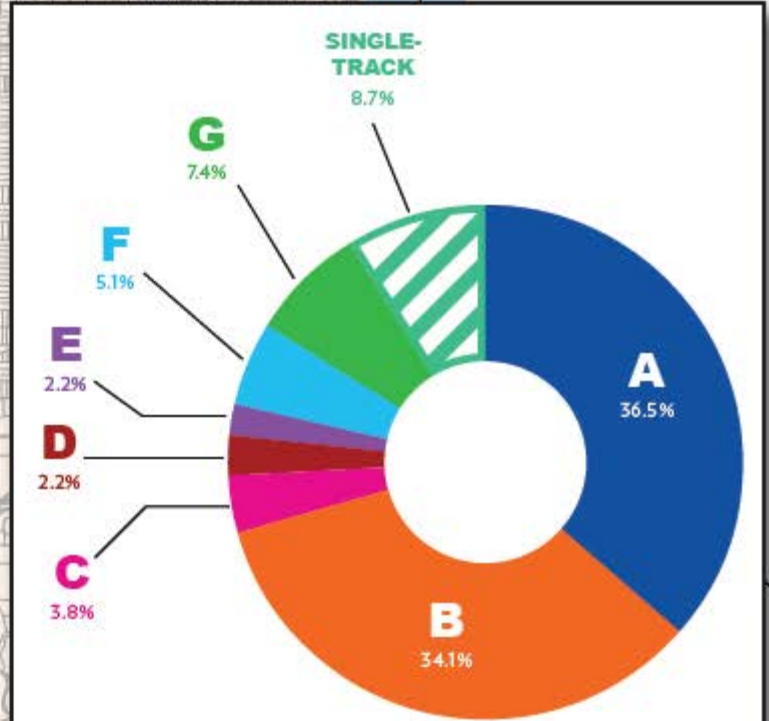
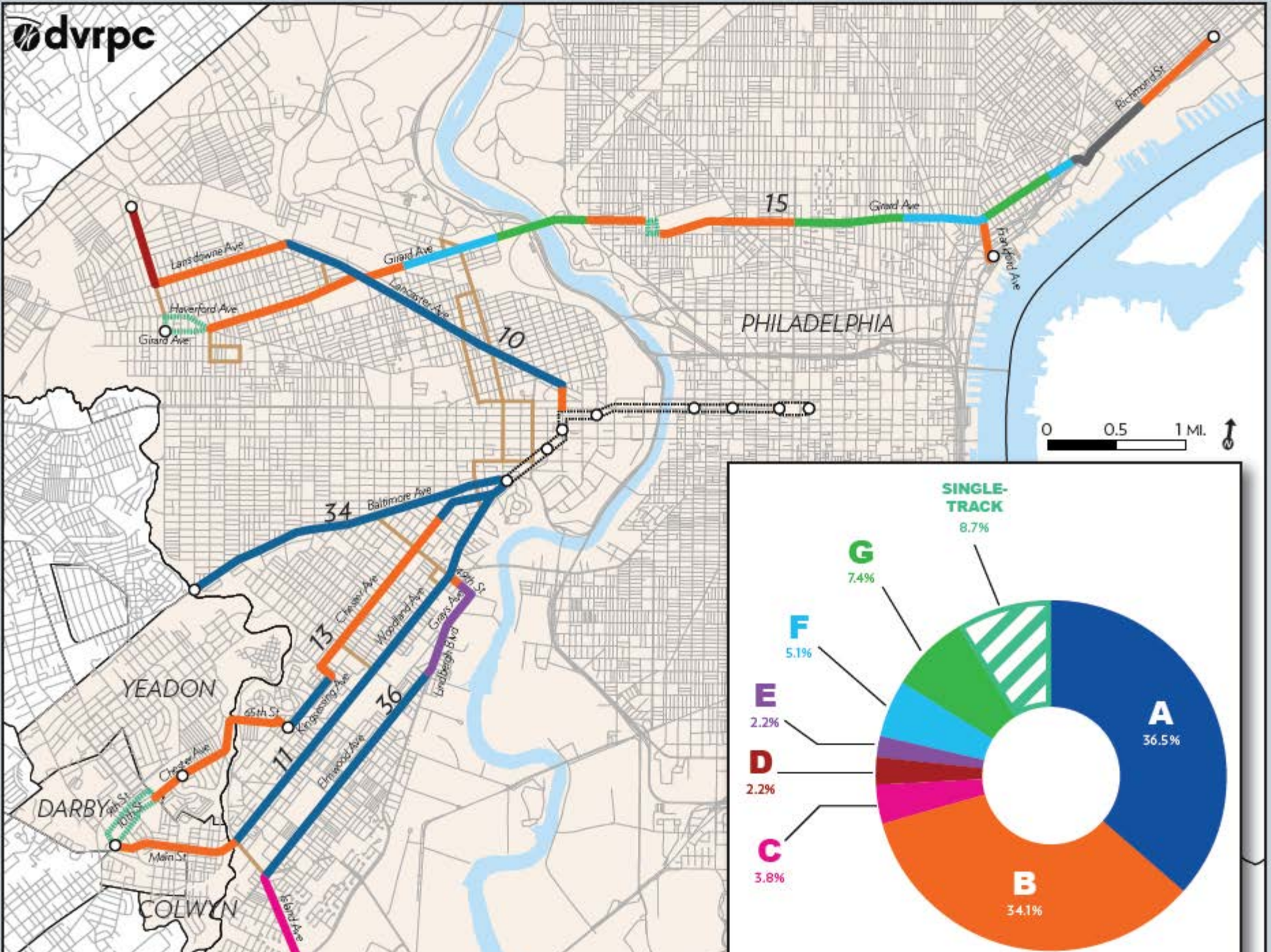
MODERN TROLLEY STATION DESIGN GUIDE CONTENTS

INTRODUCTION

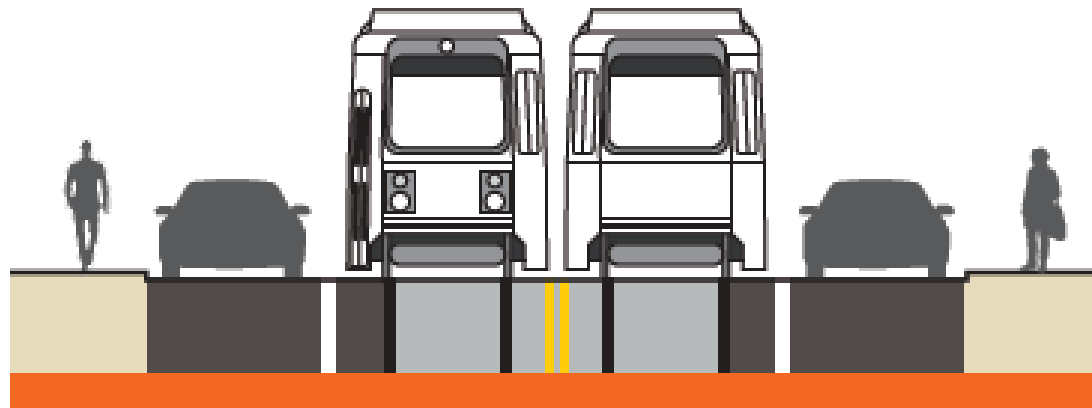
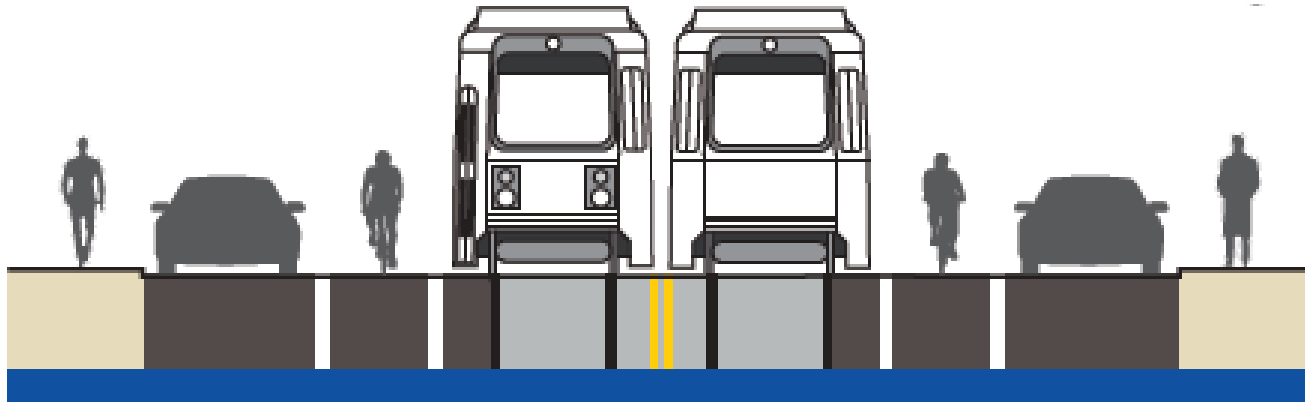
EXISTING CONDITIONS

DESIGN ASSUMPTIONS

STATION DESIGNS



ABOUT 70% OF EXISTING SYSTEM



DESIGN ASSUMPTIONS

ACCESSIBILITY

Accessibility Standards:

Improved access for passengers with disabilities is one of the primary benefits of Trolley Modernization. When replacing its trolley fleet, SEPTA will be required to comply with ADA in the design of both the vehicle, and the design of stations.

The United States Access Board is the independent federal agency that sets standards for ADA compliance. In this report, the project team relied especially on the Access Board's ADA Standards for Transportation Facilities, which governs facilities such as station buildings and platforms, and ADA Accessibility Guidelines for Transportation Vehicles, which applies to buses, rail cars, and other public transit vehicles. Guidance on vehicle-borne ramp specifications can be found in 49 CFR 38.85 Mobility aid accessibility and 36 CFR 1192.85.

Based on a review of these ADA standards, the project team has used the assumptions in Table 7 to inform its minimum standards for platform access. These ADA standards inform this report's conceptual designs, but are not meant as a substitute for a full ADA-compliance review of stations in the preliminary and final design phases.

Universal Design:

Trolley Modernization represents a once in a lifetime opportunity to make trolley routes more effective transportation options for people with mobility challenges—not simply ADA-compliant. In that regard, this guide strives to apply the principles of Universal Design to station concepts. Universal Design is an approach that involves designing the built environment to be intuitive and accessible to the broadest spectrum of users possible without the need for adaptation or special design.⁴

Where possible, this design guide seeks to implement these principles. For example, all station designs recommend platforms that are longer than the minimum length required to meet the trolley's doors. This affords trolley drivers a wider margin for error when stopping, and allows passengers to board from a consistent platform height. Likewise, the design guide recommends providing multiple entry/exit points for boarding platforms whenever safety considerations allow.

⁴ "The Center for Universal Design [at North Carolina State University] is a national research, information, and technical assistance center that evaluates, develops, and promotes accessible and universal design in housing, buildings, outdoor and urban environments and related products." More information on Universal Design is available at their website, ncsu.edu/ccsu/design/cud/index.htm.

Dimension	Measurement
Minimum platform width	8' - 6"
Maximum slope on a platform ramp	1:12 or 8.33%
Maximum running slope on a walking surface	1:20 or 5%
Maximum cross slope on a walking surface	1:48 or ≈2%
Clear landing space at accessible vehicle door	8' x 5'

Table 10 | Platform accessibility dimensional assumptions

Source: U.S. Access Board, 2010

PRINCIPLES OF UNIVERSAL DESIGN

- Equitable Use:** The design is useful and marketable to people with diverse abilities.
- Flexibility in Use:** The design accommodates a wide range of individual preferences and abilities.
- Simple and Intuitive Use:** Use of the design is easy to understand regardless of the user's experience, knowledge, language skills, or current concentration level.
- Perceptible Information:** The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.
- Tolerance for Error:** The design minimizes hazards and the adverse consequences of accidental or unintended actions.
- Low Physical Effort:** The design can be used efficiently and comfortably with a minimum of fatigue.
- Size and Space for Approach and Use:** Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture or mobility.

ACCESSIBILITY

ADA requirements
Universal Design standards

VEHICLE

Floor height
Bridgeplate ramps
Fare payment strategies
Multidoor boarding
Vehicle dimensions
Visual identity

COMPLETE STREETS

Trolley/pedestrian/bike/auto conflicts
Utilities
Parking
Near side vs. far side stop location
Stop consolidation

STATION ELEMENTS

Platform:

The preferred size and arrangement of design elements of the platform are consistent across all station types. Their placement allows for the greatest accessibility. Access to the platform and its relationship to the cartway vary outside the platform footprint.

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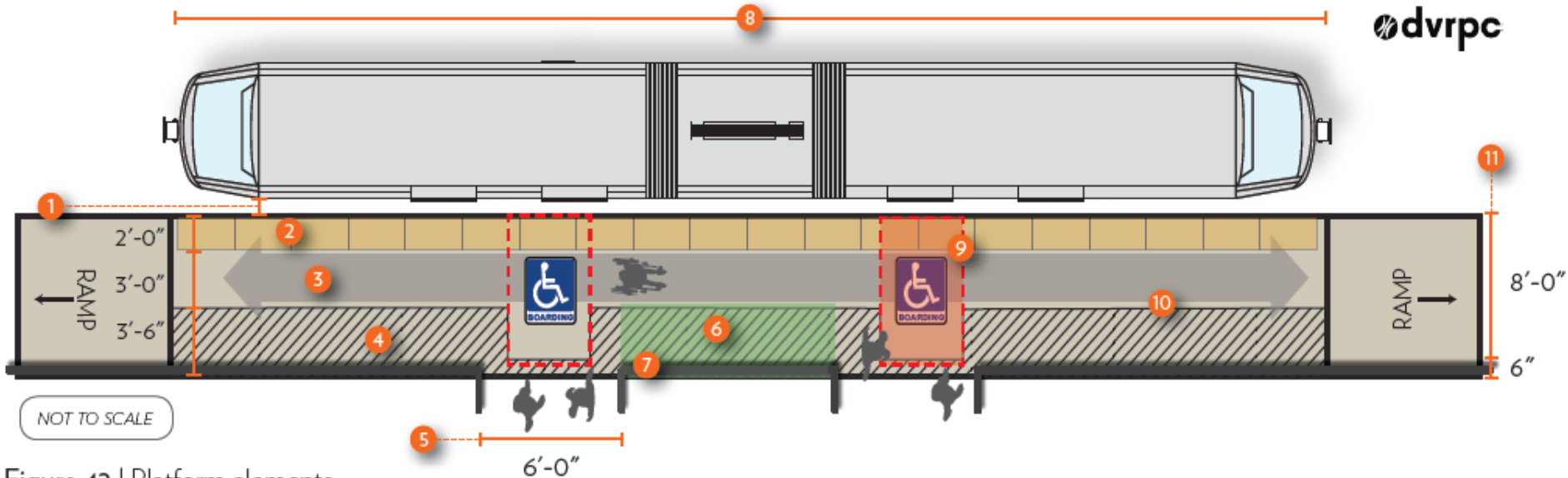


Figure 42 | Platform elements

STATION DESIGN SECTIONS



STATION DESIGN LAYOUT

CURB EXTENSION STATION



A curb extension station uses the parking lane to create space for a boarding platform. Beyond providing a trolley station, curb extensions improve pedestrian safety by shortening crossing distances at intersections, calming traffic by narrowing the roadway, and making pedestrians more visible to drivers. Curb extensions also offer space for street furniture and other public amenities.

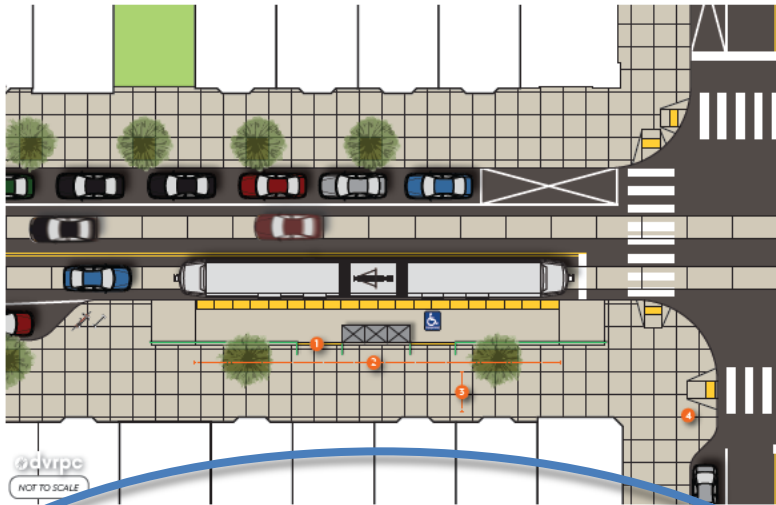


Figure 50 | Curb extension station: Plan view

Design Recommendations:

- Additional Platform Entrances:** Steps should be provided to create additional, non-accessible platform entrances. Consider using railings to channelize passenger movement towards vehicle doors.
- Street Furniture:** Consider using street furniture, bicycle racks, or landscaping to delineate the platform and sidewalk.
- Walk Zone:** Preserve either a 5'-minimum or 6'-minimum walk zone on the sidewalk, depending on the street's classification in the *Philadelphia Complete Streets Handbook*. (See page 33, "Arrangement at Intersection" for further walk zone guidance.)
- Cross-street Curb Extension:** Where space allows, continue the curb extension onto cross streets to further increase pedestrian safety.

At stations with wide sidewalks, consider reconstructing the entire corner to provide a barrier-free transition between sidewalk and platform. (See Figure 57, page 39 for a peer practice example.) This configuration eliminates the need for railings, ramps, and steps, but requires a clear maintenance agreement between SEPTA and the sidewalk's owner.

CURB EXTENSION STATION



Figure 51 | Curb extension station: Cross-section



Figure 52 | Curb extension station: Elevation

Key design dimensions:

Dimension	Minimum	Preferred
Platform length	80 ft.	100 ft.
Platform width	8 ft. 6 in.	12 ft.
Platform height	10 in.	10 in.
Station footprint length	100 ft.	120 ft.

For use in the following cross-sections:



STATION DESIGN LAYOUT

CURB EXTENSION STATION

Variation: Far-side Station

The curb extension may be located at the far side of an intersection if necessary and safe (see Figure 53). The platform should be located far enough from the intersection that a stopped trolley remains 12' from the crosswalk, as it would at a near side station.

Because trolley vehicles are longer than either standard or articulated buses, far-side stations may cause vehicle queuing within intersections and encourage passengers to cross the street mid-block. If the trolley is not coordinated with transit signal priority (TSP), trolleys may be forced to stop twice (once for the traffic signal, and once for the trolley station). Nevertheless, far-side stations are acceptable where constructability, safety, or other constraints make near-side station infeasible.

Other station types, especially those with dedicated double rights-of-way, may benefit from far-side stop locations without suffering some of the disadvantages of far-side stations in mixed traffic.

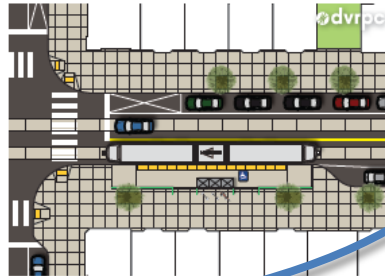


Figure 53 | Curb extension station: far-side variation

Variation: Multi-lane Curb Extension

The same design recommendations could apply to a Multi-lane Curb Extension station as apply to a Standard Curb Extension station. This type of station would apply on trolley corridors where trolley tracks run in the outer travel lanes of a multi-lane cross-section. (See Figure 54).

This condition does not currently exist in SEPTA's system. As a result, this station type would only be possible if the trolley system were expanded onto new streets, or if tracks were relocated on an existing multi-lane street, such as Girard Avenue or 63rd Street. The Next Level Station Designs section (pp. 55–63) discusses this type of intervention in greater detail.

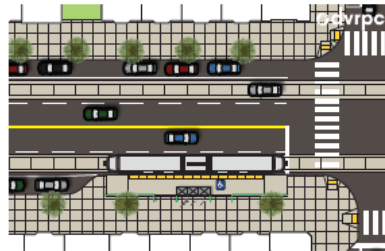


Figure 54 | Curb extension station: Multi-lane variation



CURB EXTENSION STATION

Peer Practice: Washington, DC and Portland, OR

Curb Extension Stations are in wide use in streetcar systems both domestically and internationally.

Typically, Curb Extension Stations occupy an existing parking lane, and use railings, transit shelters, plantings, or street furniture to delineate platform space from sidewalk space. This can help to mitigate tripping hazards caused by raised platforms. In cases where a transit operator has agreed to maintain a station, but not an adjacent sidewalk, this configuration can clarify parties' areas of maintenance responsibility.

Figure 55 shows a DC Streetcar station that delineates the station area using a railing and transit shelter at platform level, along with trees, planters, and street furniture at sidewalk level.

The Portland Streetcar station shown in Figure 56, also uses railings to separate station from sidewalk. The grate at left in the photo suggests another benefit to this configuration: conflicts with existing utilities may often be less challenging in the parking lane than on the sidewalk.

The most obvious disadvantage to the clear vertical division between sidewalk and station is that a new barrier is introduced into the streetscape, making the station somewhat less accessible to passengers with mobility challenges. Designers must weigh this trade-off and apply it to the constructability constraints at potential station locations.

Peer Practice: Seattle

The Seattle Streetcar station shown in Figure 57 is a good example of a station designed for barrier-free accessibility. The station takes advantage of an ample existing sidewalk and minimal above-ground utilities, providing a gentle slope from sidewalk to platform height.



Figure 55 | Curb extension, DC Streetcar
Source: BeyondDC via Flickr (CC BY-NC-ND 2.0)

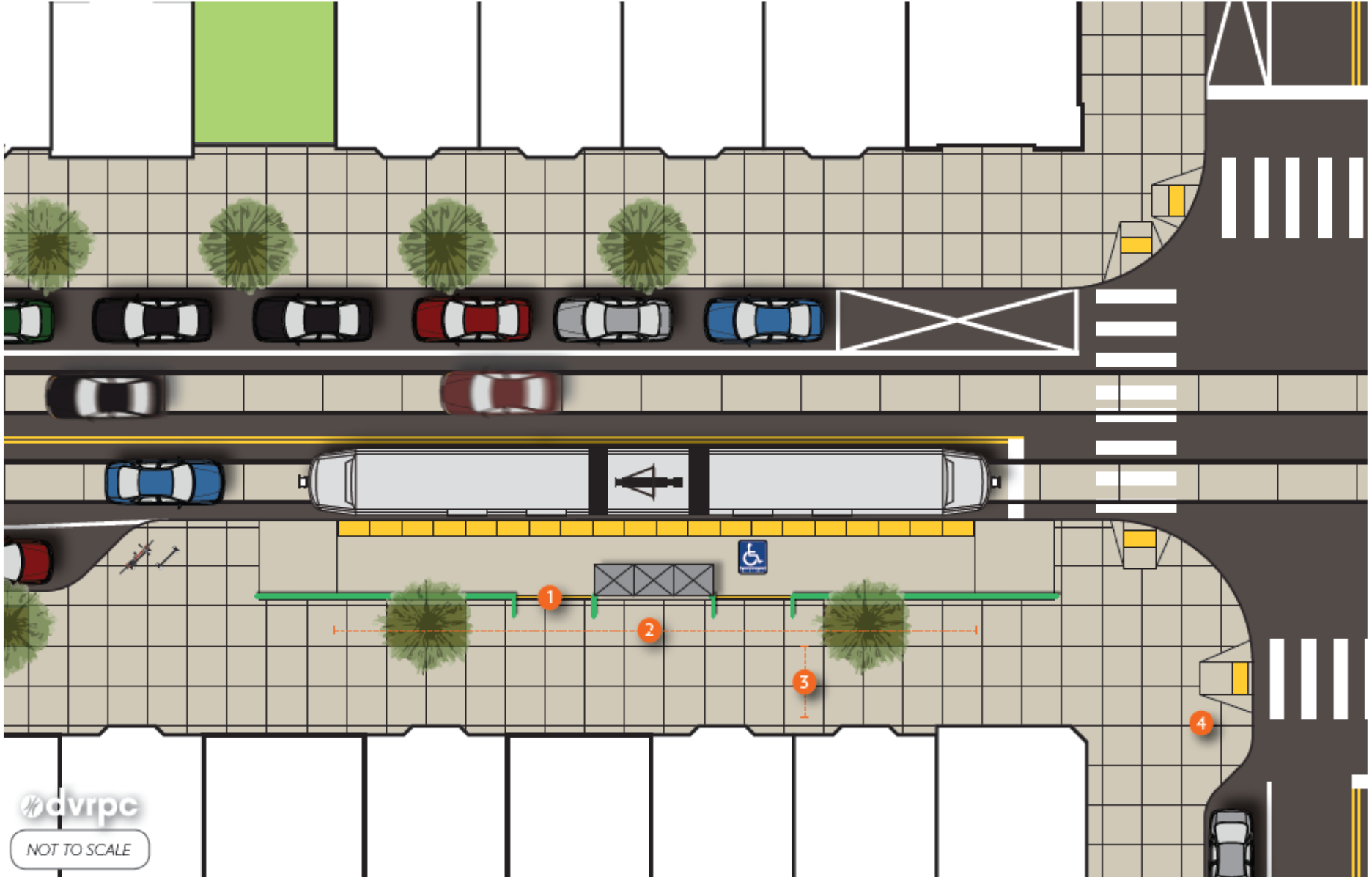


Figure 56 | Curb extension, Portland Streetcar



Figure 57 | Curb extension, Seattle Streetcar
Source: Eric Strathmire via Flickr (CC BY-NC-ND 2.0)

CURB EXTENSION STATION



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NOT TO SCALE

Figure 50 | Curb extension station: Plan view

CURB EXTENSION STATION + BICYCLE LANE

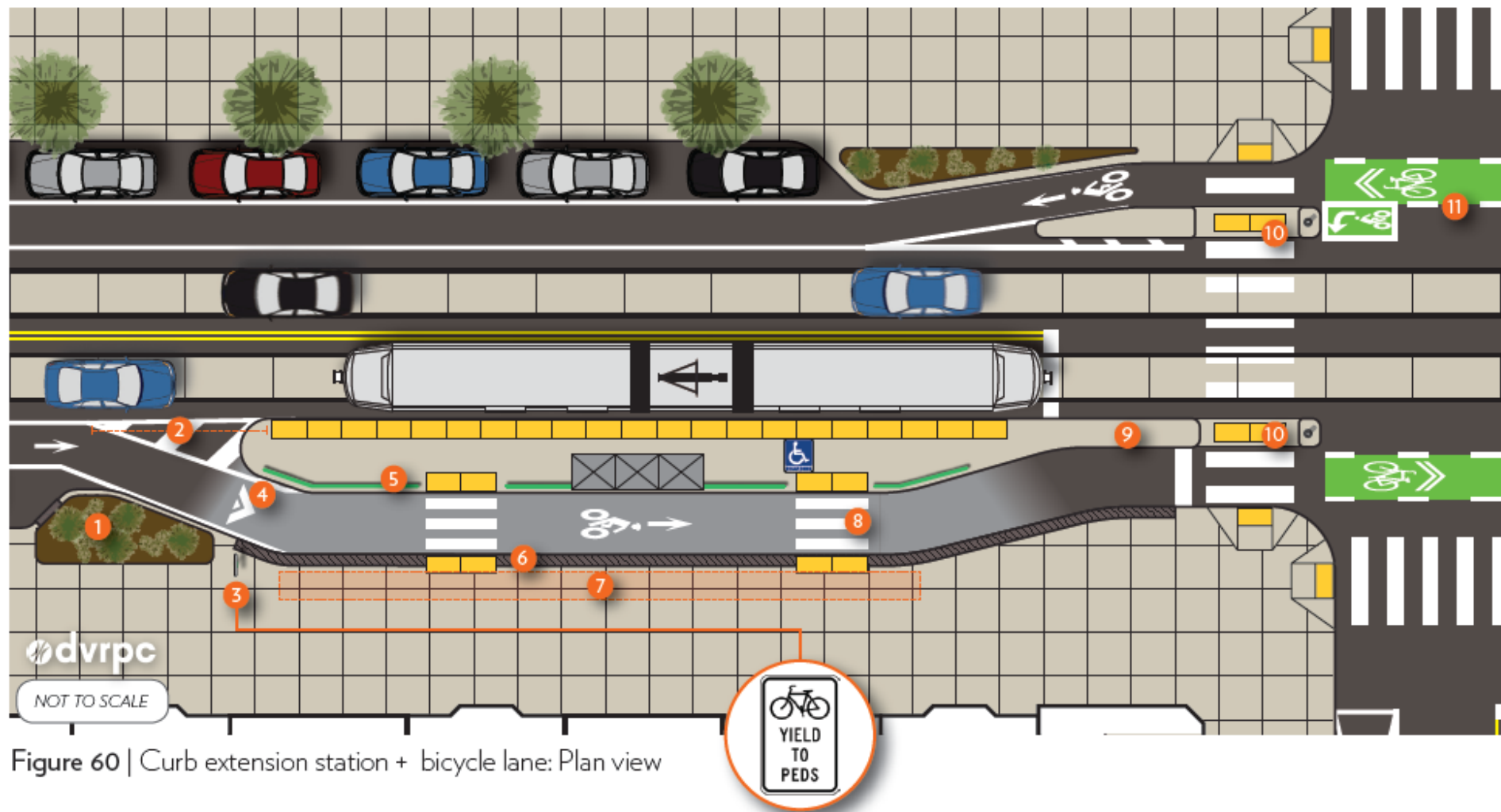


Figure 60 | Curb extension station + bicycle lane: Plan view

"CUSTOMER'S PERSPECTIVE"



CURB EXTENSION STATION + BICYCLE LANE



EXCLUSIVE ROW STATION



STAY CONNECTED!

MTSDG

Community
Engagement

Fare Payment

Pantograph
Conversion

CBTC
Upgrades

Specification
Development

Power
Distribution

Center
City
(Tunnel)
Stations

Signals

Community
Engagement

Procurement

Operations
Plan

Facilities

Signals

KEY
Integration

Tunnel
Clearances

Phasing

Station
Creation