

# SR 41 Transportation Study and Corridor Improvement Plan



*Task Force Meeting #2*

*9/29/23*

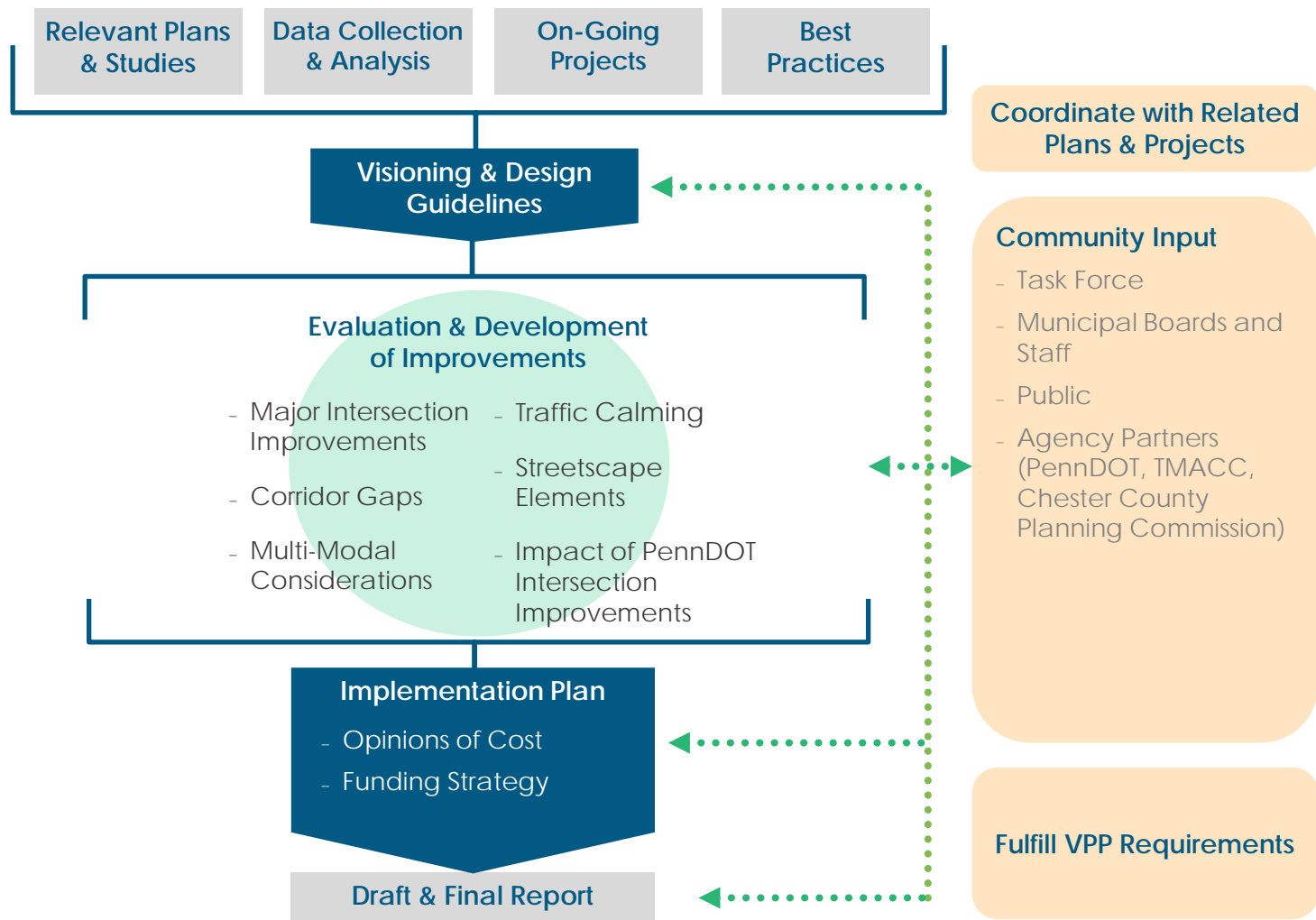


# Agenda

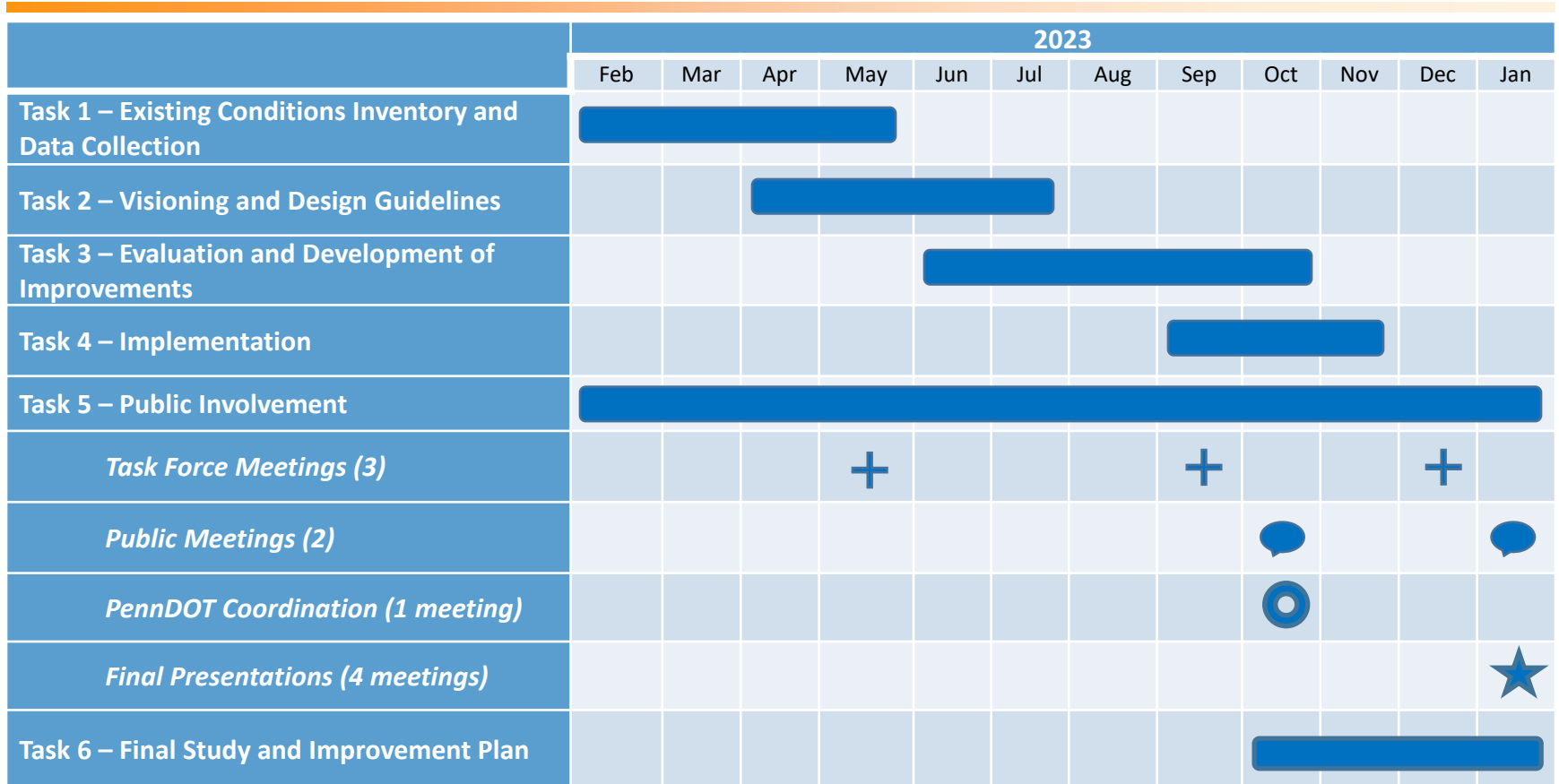
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- Introductions
- Project Scope & Schedule
- Segments
- Key Issues and Considerations
- Visioning
- Toolbox
- Preparation for Public Meeting #1
- Next Steps

# Project Scope and Deliverables



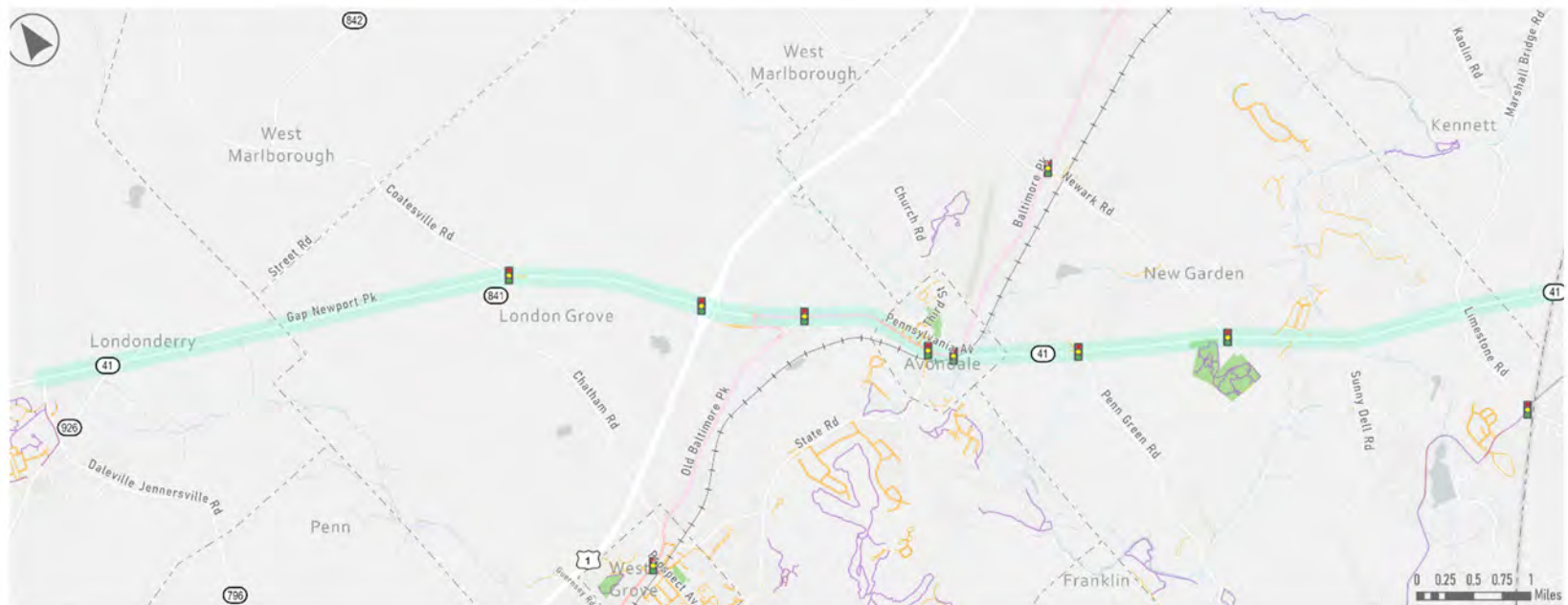
# Project Schedule



# Study Area Overview Map

## SR 41 CORRIDOR PLAN

CORRIDOR OVERVIEW MAP - DRAFT



- Project Extent
- Sidewalks
- SCCOOT Bus Route
- Parks
- Traffic Signals
- Existing Trails
- Rail Lines
- Municipalities

# SEGMENT #1 - PA ROUTE 796 TO US ROUTE 1

## Overview

Primarily two-lane roadway with occasional turning lanes, wide shoulders, and wide spacing between intersections. Rural land use with some housing and agricultural businesses spread along the corridor and experiences less annual daily traffic than the corridor average. There were 91 reportable crashes (2018-2022) with most crashes being either "Angled" (40.7%) or "Rear-End" (31.9%) and there were more Fatal and Injury crashes that the corridor average.

## Municipalities

- Londonderry Township
- London Grove Township

Length: 4.6 Miles

Speed Limit:

AADT: 20,531 (+4,710)\*

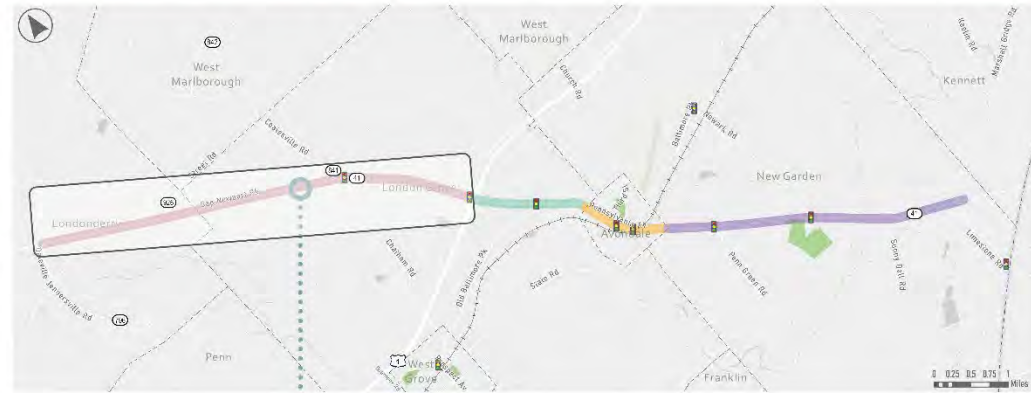
45 MPH

Truck AADT: 2,793 (+437)\*

\*Difference from corridor average

Chesco Landscapes: Rural Center, Agricultural

Roadway Classifications: Rural Places/Regional Arterial



## EXISTING CONDITIONS



Truck traffic and median island along Route 41 eastbound



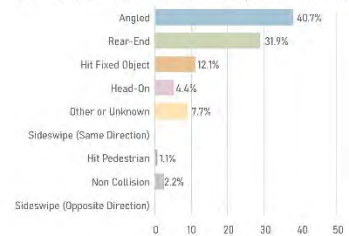
Straight travel lanes with wide shoulders

## CRASH HISTORY

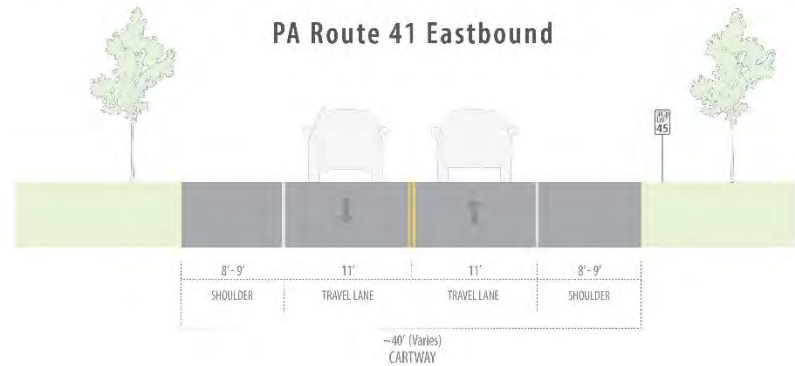
### CRASHES BY INJURY SEVERITY (2018-2022)

SEVERITY	TOTAL	%	Corridor %	Diff.
Fatal Injury	2	2.2%	0.7%	+1.5%
Suspected Serious Injury	4	4.4%	3.3%	+1.1%
Suspected Minor Injury	26	28.6%	26.3%	+2.3%
Injury/Unknown Severity	7	7.7%	9.3%	-1.6%
Possible Injury	3	3.3%	3.7%	-0.4%
Not injured	47	51.6%	54.0%	-2.4%
Unknown	2	2.2%	2.7%	-0.5%
<b>GRAND TOTAL</b>	<b>91</b>	<b>100%</b>	<b>100%</b>	

### TOTAL CRASHES BY TYPE (2018-2022)



## TYPICAL CROSS SECTION



# SEGMENT #2 - US ROUTE 1 TO AVONDALE BOROUGH

## Overview

Two-lane roadway with turning lanes and slip lanes throughout the corridor and wide shoulders. Land use shifts to more commercial/retail with big box retailers and large parking areas. Higher than average AADT and truck AADT compared to corridor as a whole.

## Municipalities

- London Grove Township

Length: 1.2 Miles

Speed Limit:

AADT: 20,422 (+4,601)\*

45 MPH

Truck AADT: 3,427 (+1,071)\*

\*Difference from corridor average

Chesco Landscapes: Suburban

Roadway Classifications: Suburban Corridor/Community Arterial



## EXISTING CONDITIONS



Disconnected sidewalk network near retail/commercial area



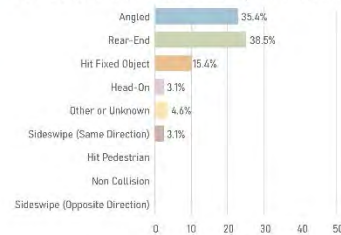
Wide crossings with no crosswalks or pedestrian facilities

## CRASH HISTORY

CRASHES BY INJURY SEVERITY (2018-2022)

SEVERITY	TOTAL	%	Corridor %	Diff.
Fatal Injury	0	0.0%	0.7%	-0.7%
Suspected Serious Injury	3	4.6%	3.3%	+1.3%
Suspected Minor Injury	18	27.7%	26.3%	+1.4%
Injury/Unknown Severity	3	4.6%	9.3%	-4.7%
Possible Injury	0	0.0%	3.7%	-3.7%
Not injured	39	60.0%	54.0%	+6.0%
Unknown	2	3.1%	2.7%	+0.4%
<b>GRAND TOTAL</b>	<b>65</b>	<b>100.0%</b>	<b>100%</b>	

TOTAL CRASHES BY TYPE (2018-2022)



## TYPICAL CROSS SECTION

PA Route 41 Eastbound



~50' (Varies)  
CARTWAY

# SEGMENT #3 - AVONDALE BOROUGH

## Overview

Segment #3 through the Borough of Avondale differs compared to other segments thanks to a more urban context with an existing sidewalk network, street trees, and detached single family housing. Roadway features spacing between intersections with crosswalks and yield to pedestrian signage but no stop control. Narrow (5'- 6') shoulders transition to bike lanes west of the borough line.

## Municipalities

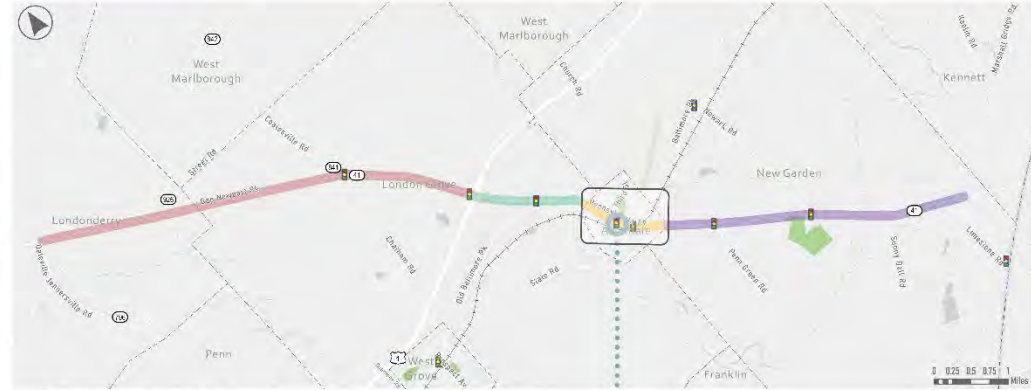
- Avondale Borough

**Length: 1.0 Miles**      **Speed Limit: 35 MPH**  
**AADT: 20,422 (+4,601)\***  
**Truck AADT: 3,427 (+1,071)\***

\*Difference from corridor average

**Chesco Landscapes: Urban, Suburban Center**

**Roadway Classifications: Town Center/Regional Arterial; Suburban Neighborhood/ Community Arterial**



## EXISTING CONDITIONS



Narrow shoulder/truck traffic



Railroad crossing



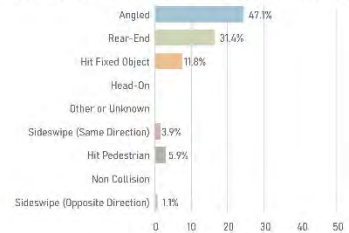
Existing sidewalk network in Avondale Borough

## CRASH HISTORY

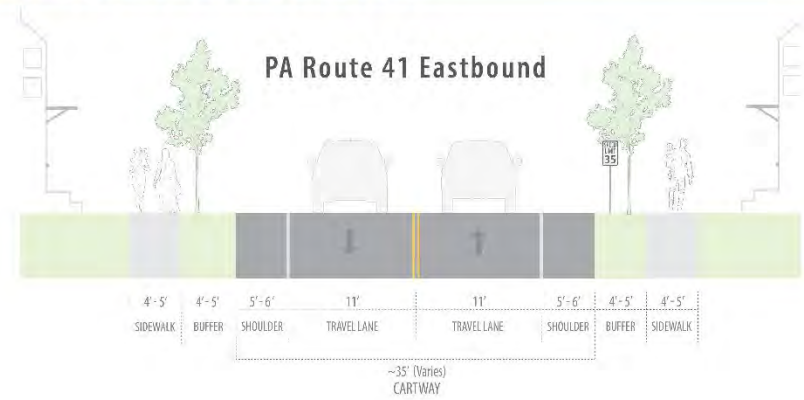
### CRASHES BY INJURY SEVERITY (2018-2022)

SEVERITY	TOTAL	%	Corridor %	Diff.
Fatal Injury	0	0.0%	0.7%	-0.7%
Suspected Serious Injury	1	2.0%	3.3%	-1.3%
Suspected Minor Injury	17	33.3%	26.3%	+7.0%
Injury/Unknown Severity	5	9.8%	9.3%	+0.5%
Possible Injury	1	2.0%	3.7%	-1.7%
Not injured	26	51.0%	54.0%	-3.0%
Unknown	1	2.0%	2.7%	-0.7%
<b>GRAND TOTAL</b>	<b>51</b>	<b>100.0%</b>	<b>100%</b>	

### TOTAL CRASHES BY TYPE (2018-2022)



## TYPICAL CROSS SECTION





# SEGMENT #4 - NEWARK ROAD TO ROUTE 7 INTERCHANGE

## Overview

Primarily two-lane roadway with occasional turning lanes, narrow shoulder widths, and wide spacing between intersections. Rural land use with some housing, commercial businesses, and community resources including places of worship and New Garden Township Park spread along the corridor. Segment and experiences higher AADT compared to corridor average.

## Municipalities

- New Garden Township

Length: 3.1 Miles

Speed Limit:

AADT: 20,209 (+4,388)\*

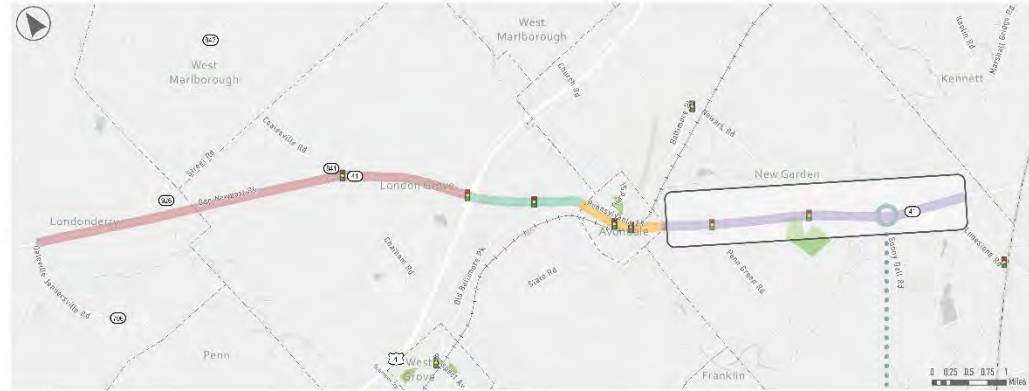
45 MPH

Truck AADT: 2,971 (+615)\*

\*Difference from corridor average

Chesco Landscapes: Rural Center, Agricultural

Roadway Classifications: Suburban Corridor/Community Arterial



## EXISTING CONDITIONS



Limited shoulder and center turn lane approaching Newark Road



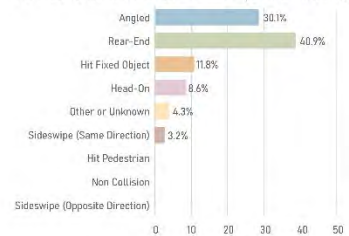
Existing traffic spacing markings

## CRASH HISTORY

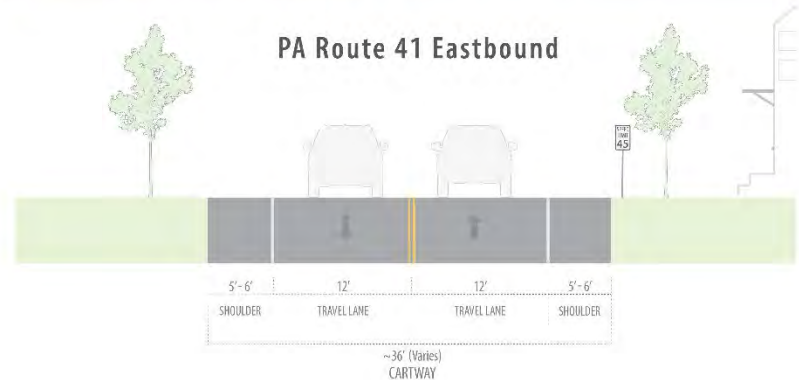
CRASHES BY INJURY SEVERITY (2018-2022)

SEVERITY	TOTAL	%	Corridor %	Diff.
Fatal Injury	0	0.0%	0.7%	-0.7%
Suspected Serious Injury	2	2.2%	3.3%	-1.1%
Suspected Minor Injury	18	19.4%	26.3%	-6.9%
Injury/Unknown Severity	13	14.0%	9.3%	+4.7%
Possible Injury	7	7.5%	3.7%	+3.8%
Not injured	50	53.8%	54.0%	-0.2%
Unknown	3	3.2%	2.7%	+0.5%
<b>GRAND TOTAL</b>	<b>93</b>	<b>100.0%</b>	<b>100%</b>	

TOTAL CRASHES BY TYPE (2018-2022)



## TYPICAL CROSS SECTION

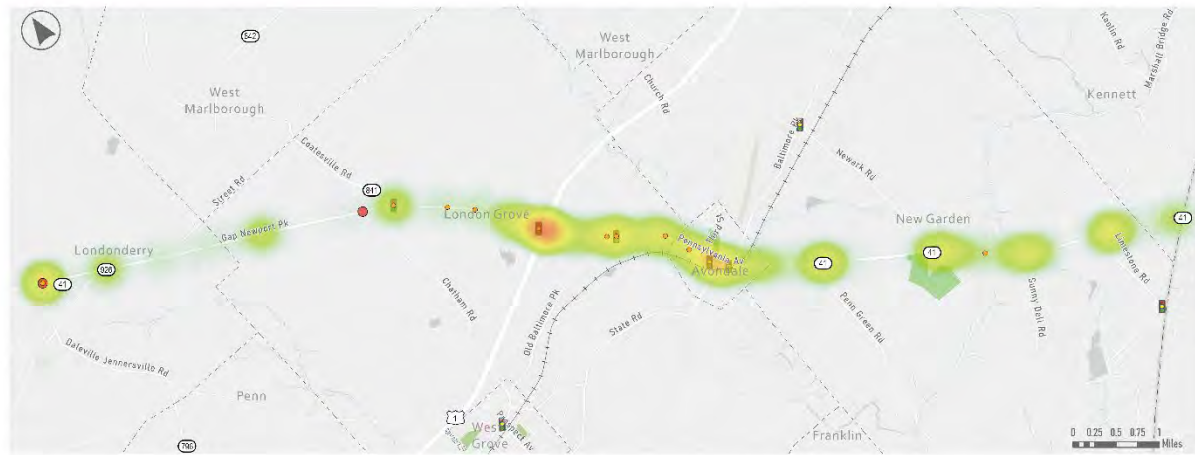


# Key Issues and Considerations

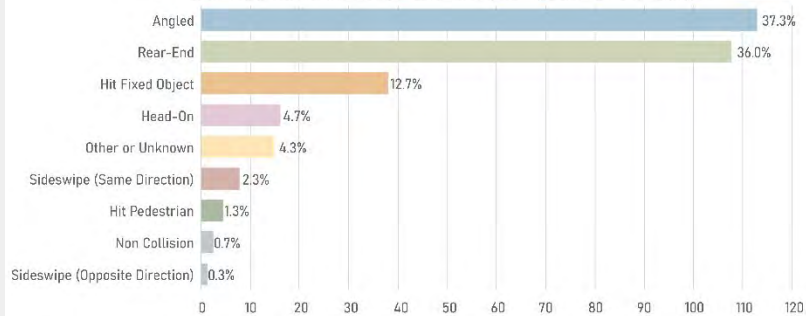
## Safety

### CRASH MAPPING AND ANALYSIS

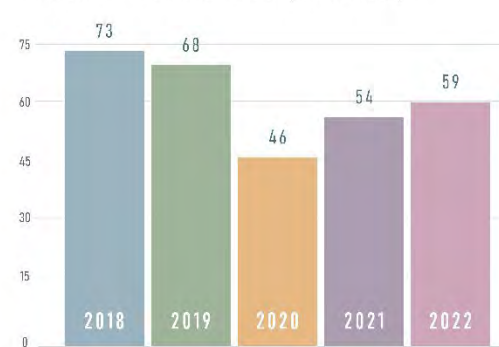
- Fatal Injury
- Suspected Serious Injury
- Traffic Signals
- Parks
- Rail Lines
- Municipalities



TOTAL CRASHES BY TYPE (2018-2022)



TOTAL CRASHES BY YEAR (2018-2022)

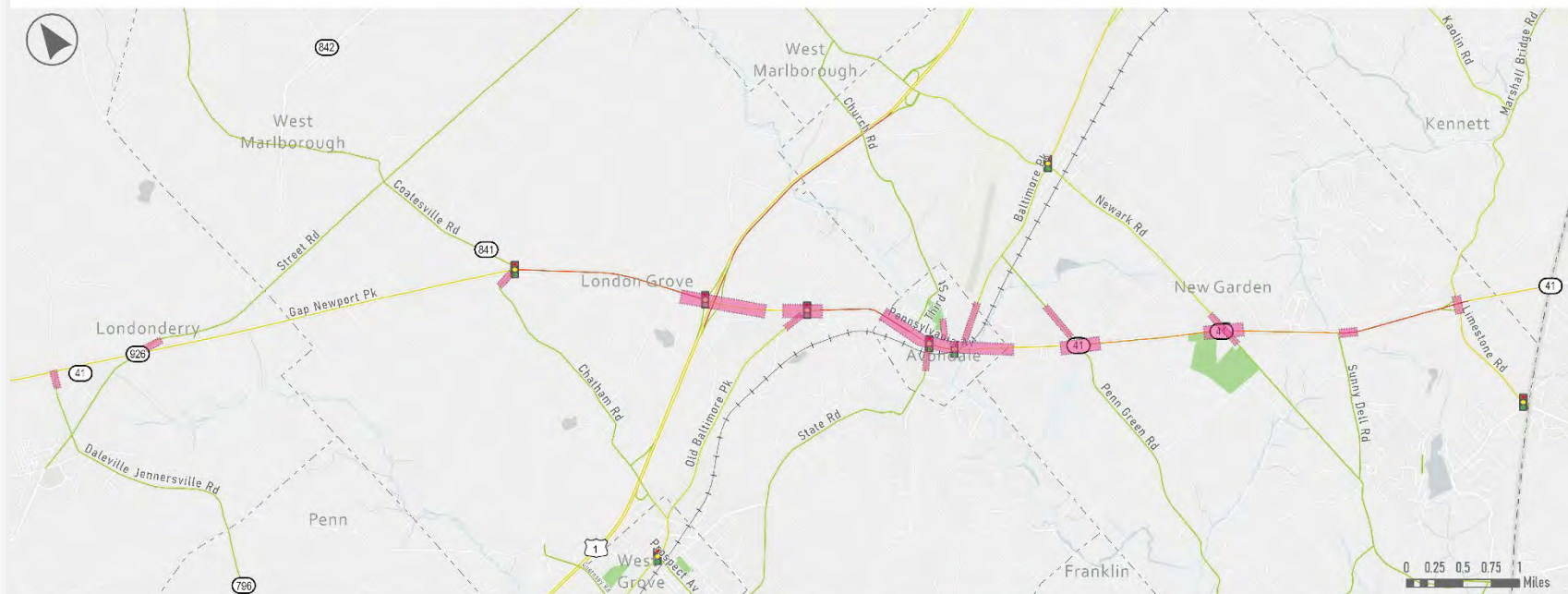


# Key Issues and Considerations

## Congestion

### SR 41 CORRIDOR PLAN

AVERAGE ANNUAL DAILY TRAFFIC (AADT) MAP - DRAFT



Average Annual Daily Traffic

- 2 - 1,000
- 1,001 - 5,000
- 5,001 - 10,000
- 10,001 - 15,000
- 15,001 - 20,000
- 20,001 - 25,000

---+ Rail Lines

🚦 Traffic Signals

▭ Municipalities

🌳 Parks

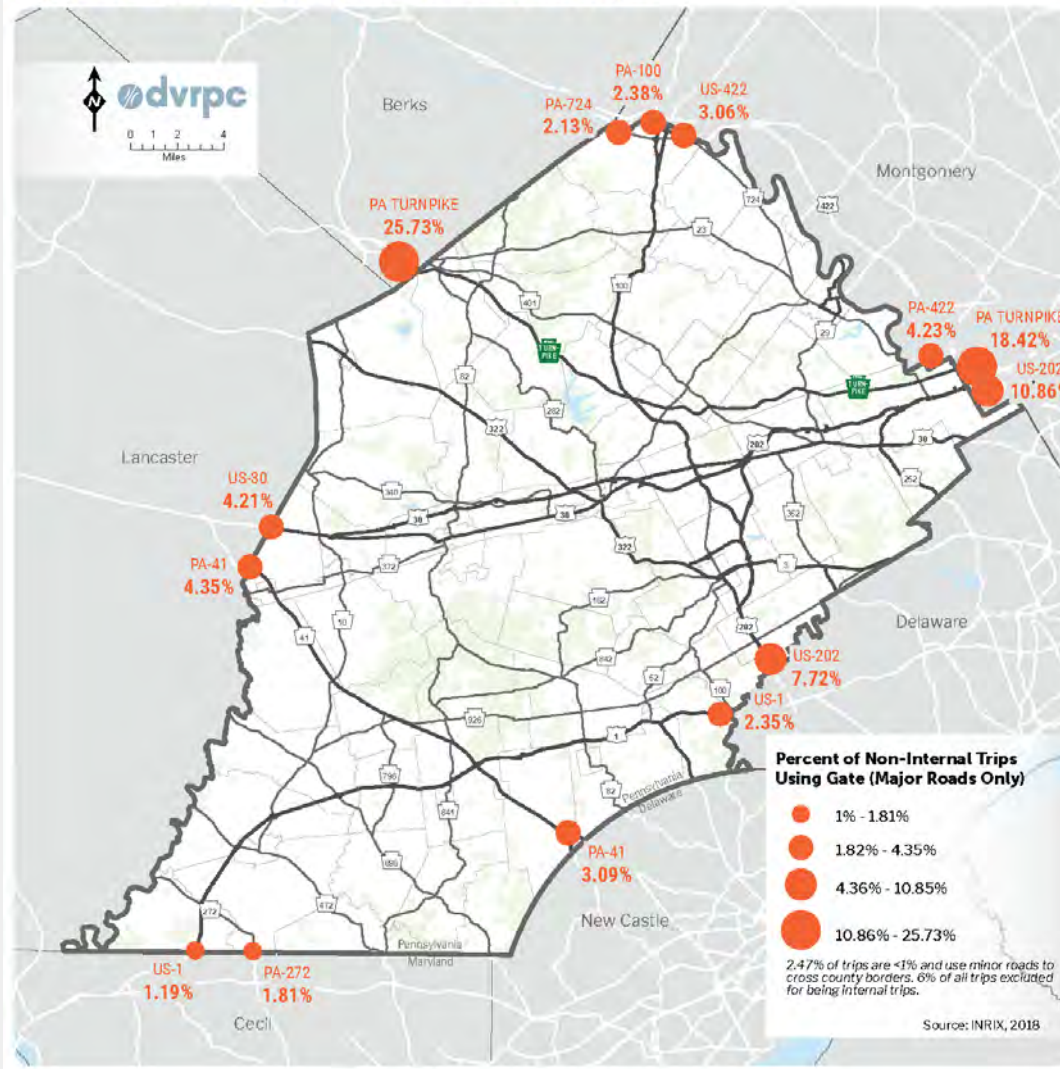
■ High Congestion Areas

0 0.25 0.5 0.75 1 Miles

# Key Issues and Considerations

## Truck Movements

**Figure 5: Gate Trips by Percentage (All Truck Trips)**

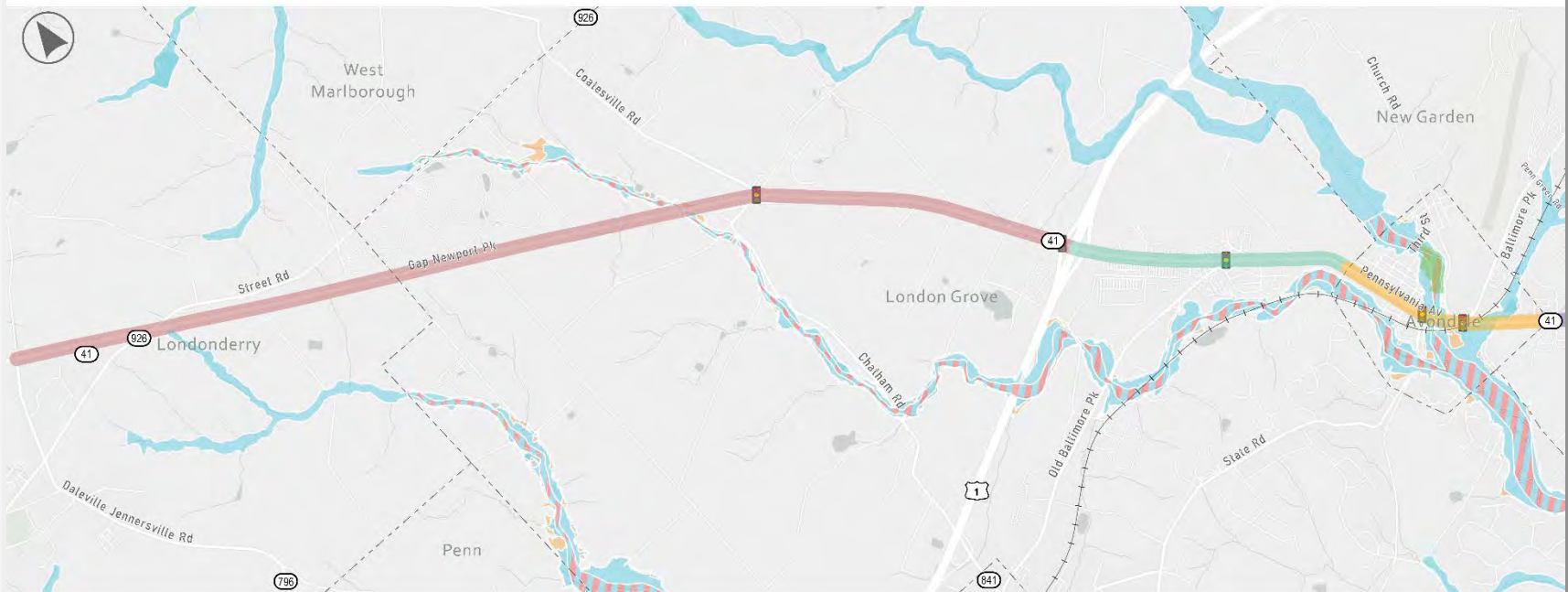


# Key Issues and Considerations

## Flooding

### SR 41 CORRIDOR PLAN

FLOOD HAZARD MAP - DRAFT



#### FEMA Flood Hazard Zones

- 1% Annual Chance Flood hazard
- Regulatory Floodway
- Special Floodway
- Area of Undetermined Flood Hazard
- 0.2% Annual Chance Flood hazard

#### Segments

- PA 796 to US Route 1
- US Route 1 to Avondale Borough Line
- Avondale Borough
- Avondale Borough Line To Route 7 Interchange

#### Municipalities

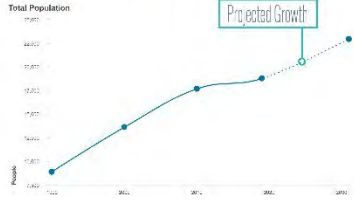
- Rail Lines
- Traffic Signals

# Key Issues and Considerations

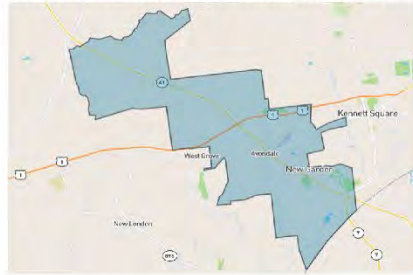
## Equity

### EQUITY INDICATORS

TOTAL POPULATION  
**18,774**



STUDY AREA CENSUS BLOCK GROUPS



MEDIAN HOUSEHOLD INCOME

STUDY AREA - \$143,308

CHESTER CO - \$109,969

PA - \$67,587

**3.6%** HOUSEHOLDS BELOW POVERTY LEVEL

Percent of Income spent on Transportation

**67.3%**

\*Low Income Individuals

**14%** Population Age 65 and Older

**27%** Population Age 18 and Under

PERCENT OF LIMITED ENGLISH HOUSEHOLDS

5.6%

Study Area

1.8%

Chester County

2.5%

Pennsylvania

% PEOPLE OF COLOR

STUDY AREA - 27.4%

CHESTER CO - 22.0%

PA - 25.0%

### TRANSPORTATION PERFORMANCE

Percent of Income spent on Transportation

**24.3%**

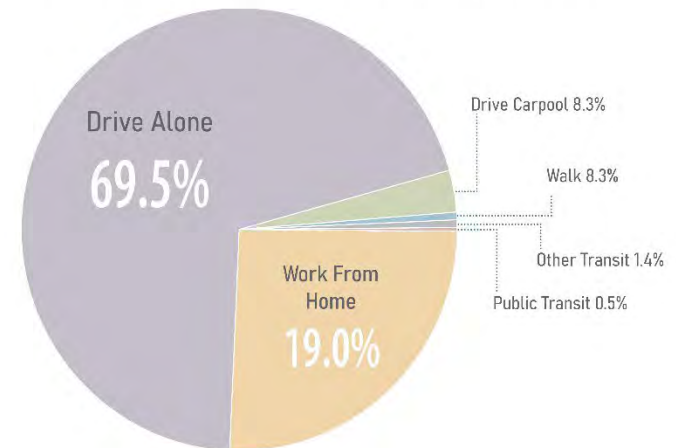
\*Median Income Families

NUMBER OF VEHICLES AVAILABLE BY HOUSEHOLDS



**27.9** AVERAGE COMMUTE TRAVEL TIME (MIN.)

COMMUTE MODE TYPE BY RESIDENTS WHO COMMUTE

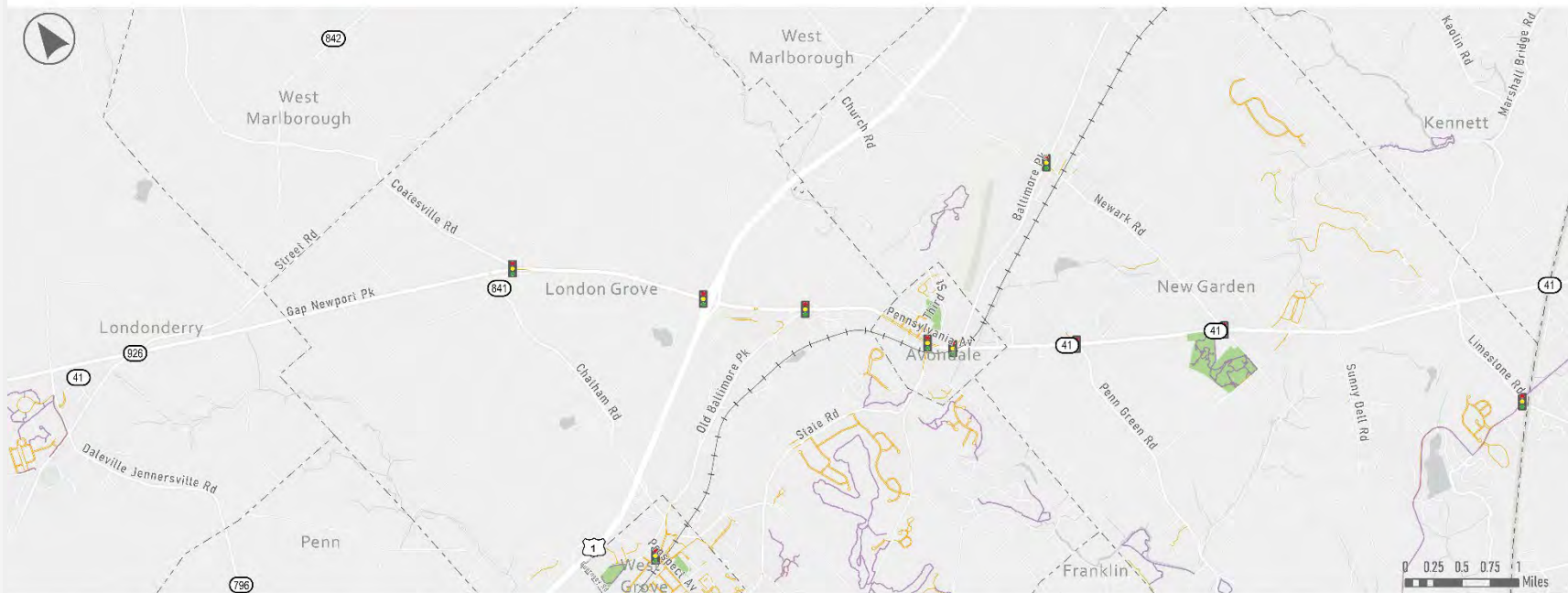


# Key Issues and Considerations

## Accommodating Pedestrians and Bicyclists

### SR 41 CORRIDOR PLAN

CORRIDOR OVERVIEW MAP - DRAFT



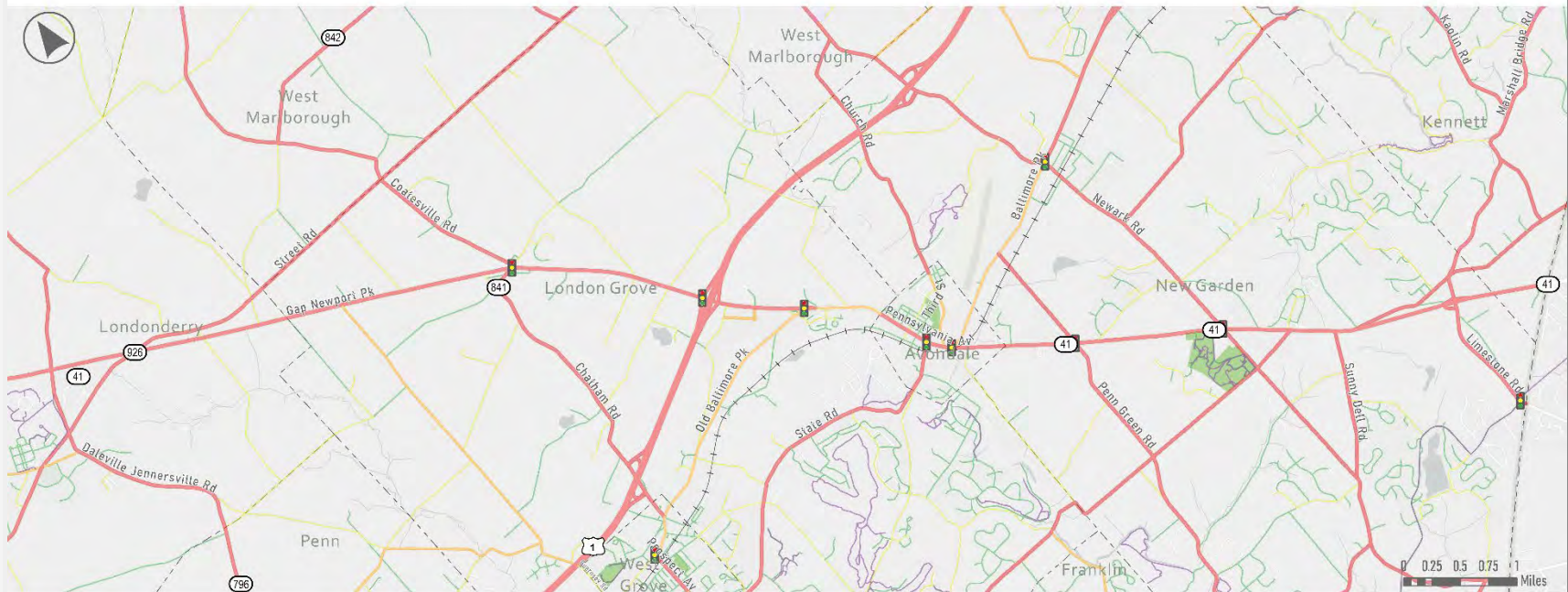
- Traffic Signals
- Sidewalks
- Parks
- Rail Lines
- Existing Trails
- Municipalities

# Key Issues and Considerations

## Accommodating Pedestrians and Bicyclists

### SR 41 CORRIDOR PLAN

DVRPC BICYCLE LEVEL OF TRAFFIC STRESS (LTS) MAP - DRAFT



#### Level of Traffic Stress

- 1 - Lowest Stress
- 2 - Suitable for Most Adults
- 3 - Moderate Traffic Stress
- 4 - High Traffic Stress

Traffic Signals

Rail Lines

Existing Trails

Parks

Municipalities

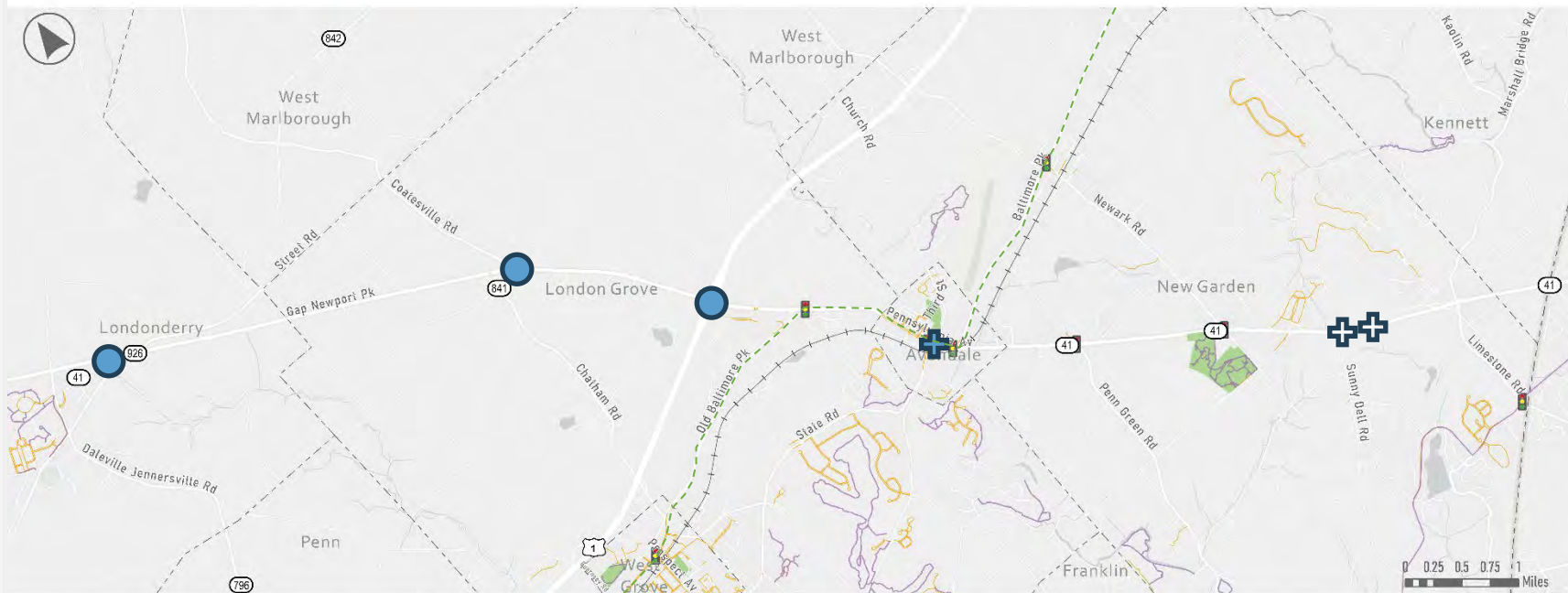


# Key Issues and Considerations

## Accommodating Pedestrians and Bicyclists

### SR 41 CORRIDOR PLAN

CORRIDOR OVERVIEW MAP - DRAFT



- Traffic Signals
- Sidewalks
- Parks
- Rail Lines
- Existing Trails
- Municipalities
- TIP Funded Roundabout Improvement
- TIP Funded Intersection Improvement
- Proposed Intersection Improvement
- Proposed Baltimore Pike Bikeway

# Key Issues and Considerations

## *Task Force Feedback*

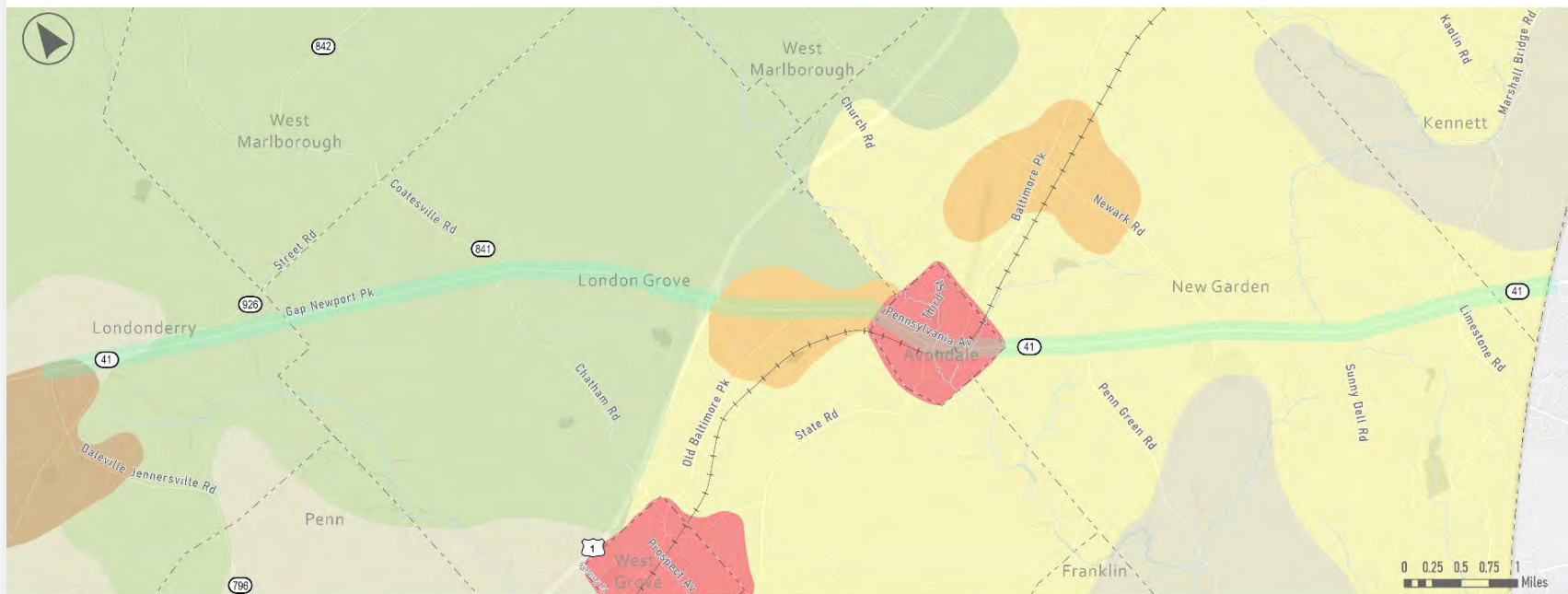
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- Key Issues and Considerations
- Safety
  - *Congestion*
  - *Truck Movements*
  - *Flooding*
  - *Equity*
  - *Accommodating Pedestrians and Bicyclists*
- Do these still reflect the most important transportation issues on the corridor?
- Are there any that you would add?
- Are there any that you would remove?

# Visioning Landscapes3

## SR 41 CORRIDOR PLAN

LANDSCAPES3 AREAS MAP - DRAFT



- Landscapes3 Areas
  - Agricultural
  - Rural Center
  - Suburban Center
  - Urban
  - Rural
  - Suburban
- Municipalities
- Rail Lines
- Project Extent

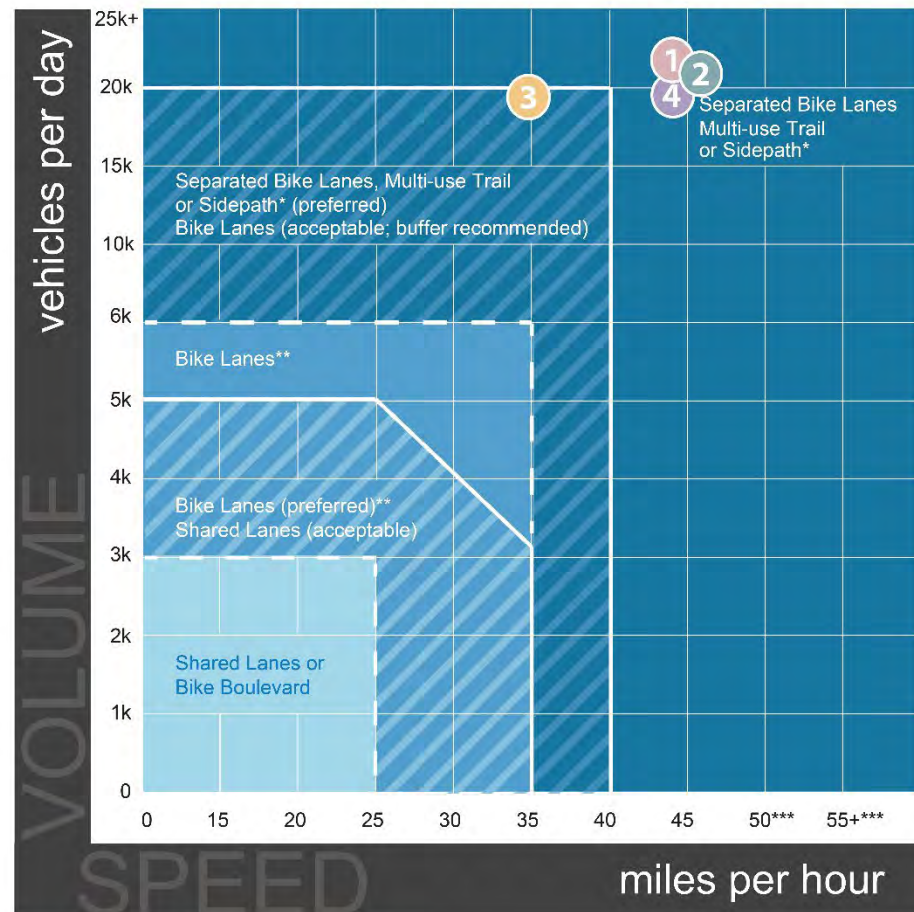
# Visioning

## Bicycle Facility Selection Guidance

### PROJECT SEGMENTS

- 1 PA Route 796 to US Route 1
- 2 US Route 1 to Avondale Borough
- 3 Avondale Borough
- 4 Newark Road to Route 7 interchange

Urban and Suburban Facility Selection Matrix (PennDOT)



Note: Based on speed limits and traffic volumes recommended shoulder widths for all segments would fall in 10' range.

Source: Iowa Bicycle and Pedestrian Long-Range Plan

# Visioning

## Freight Considerations

### FREIGHT CENTER BY THE NUMBERS

**577 acres** of land<sup>15</sup>

**333,319 sq ft** industrial buildings<sup>16</sup>

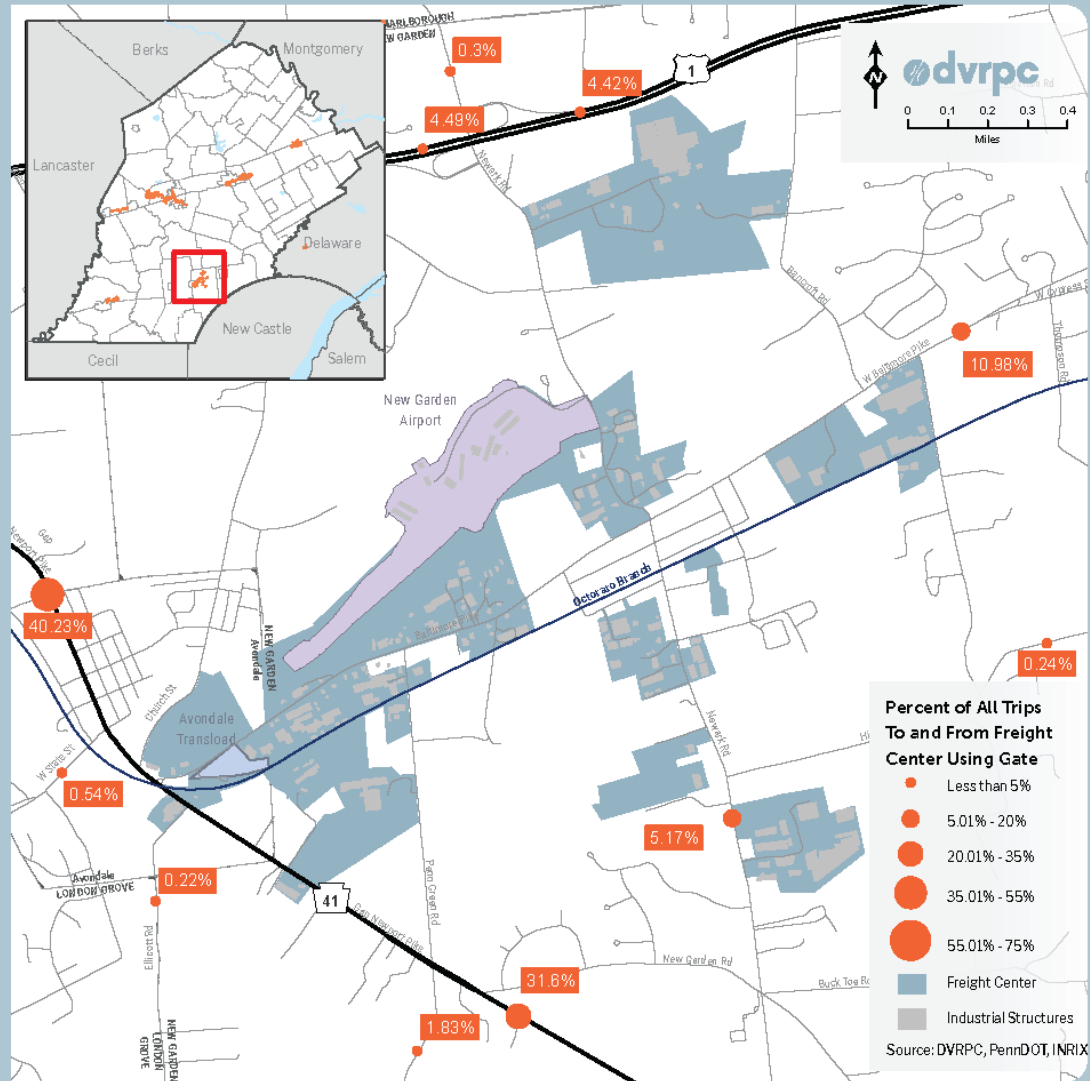
**New Garden Airport**

**1,062 freight employees**<sup>17</sup>

**265 non-freight employees**

### Top Gates for Truck Traffic:

- PA 41
- Newark Road
- US 1



# Toolbox

## TRAFFIC CALMING

### Description

Traffic calming measures include physical changes to a roadway to reduce speeds and cut-through traffic. Traffic calming strategies are typically used on neighborhood roadways. Traffic calming measures can be implemented in conjunction with bicycle and pedestrian infrastructure to slow traffic and create a safer and more comfortable environment for walking and biking. The Active Transportation Toolbox includes several common traffic calming measures. Additionally, PennDOT's *Traffic Calming Handbook* (Publication 383) provides details regarding the appropriate placement and design of traffic calming measures.



### Pavement Markings / Reduced Lane Widths

#### Description

Reducing excessive lane widths can help to slow traffic by providing a defined area for travel. Also, a reduction in lane widths can provide additional space for bicyclists and pedestrians. Lane widths can be defined by edge line striping, curbing, or other physical roadside treatments.

## On-street Parking

### Description

Provision of on-street parking on one or both sides that reduces roadway width. Parked vehicles also provide a buffer between traffic and pedestrians on the sidewalk.



## Speed Hump or Speed Table

### Description

Raised humps in the roadway, typically 3-4 inches high, intended for low volume and low speed roadways. Speed humps are most effective when placed in a series. Speed humps are the most popular traffic calming measure due to their effectiveness at reducing speeds, ease of implementation, and relatively low cost. Speed tables are speed humps with a longer, flat top that can be easier to construct and generally more acceptable to the traveling public.

### Option

Speed humps or tables placed at a crosswalk create raised pedestrian crossings, which provide better visibility for pedestrians.

## Gateway Treatments

### Description

A combination of special treatments used at the entrance to an area or neighborhood that alerts drivers to slow down due to a change in environment. Gateway treatments can include signage to identify the area or neighborhood. Other potential gateway treatments include landscaped medians or landscaped areas on the roadside.



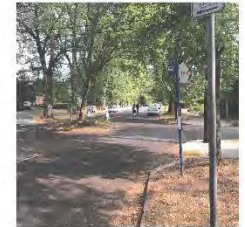
## Roundabout

### Description

An intersection design treatment that reduces conflict points and slows traffic. Traffic approaching the intersection yields to traffic circulating around the roundabout. Splitter islands at the entries help to slow and direct traffic and serve as pedestrian refuge areas. In some situations, roundabouts can provide increased capacity and reduced delay when compared with traffic signals.

### Roundabout Variation: Mini-Roundabout

A roundabout with a small diameter and traversable central island. Mini-roundabouts offer benefits similar to roundabouts, but with a smaller footprint and less cost. Mini-roundabouts are typically used in urban or small town settings on roadways with low speeds.



# Toolbox

## BIKE AND PEDESTRIAN CROSSINGS

### Marked Crossing

#### Description

Pavement markings designating a location for pedestrians to cross a road, often connecting sidewalks, paths, or multi-use trails. Crosswalks must be a minimum of 6 feet wide. High visibility crosswalks, also known as continental design, are most visible to motorists.



#### Marked Crossing Variation: Mid-Block Crossing

A crosswalk that is not located at an intersection. Additional warning devices are required to increase pedestrian safety compared to typical crosswalks at intersections. A mid-block crosswalk can include advance signage and pavement markings. Other design treatments could include a pedestrian refuge island or raised crosswalk.



### Trail Crossing

#### Description

Trail crossings are locations where a multi-use trail crosses a roadway. Trail crossings may be within the area of an intersection, mid-block, or grade separated. Based on AASHTO guidelines, mid-block trail crossings can be considered a four-leg intersection. Mid-block trail crossings often involve mutual yielding, such that motorists must yield to pedestrians in the crosswalk and bicyclists/pedestrians must stop/yield to motorists if they cannot stop in time. Roadway trail crossings typically include marked crosswalks and ADA curb ramps corresponding to the width of the trail, along with warning signs. Flashing warning devices or signals may be considered for some trail crossings.

### Median/Refuge Island

#### Description

Medians or raised islands between travel lanes can be designed with landscaping, hardscaping, welcome signs, or provide a mid-point refuge for pedestrian crossings. Medians help to slow traffic by defining travel lanes and can be used to reduce conflicts by physically preventing left turns and restricting turning movements to specific locations.



### Traffic Signal

#### Description

Traffic signal equipment for pedestrians can include pedestrian pushbuttons, accessible pedestrian signals, passive detection for bicyclists or pedestrians, pedestrian signal heads, and pedestrian countdown signal heads. Accessible Pedestrian Signals (APS) communicate information about the WALK and DON'T WALK intervals for pedestrians who are blind or have low vision. Countdown pedestrian signal heads show how much time remains before the traffic signal changes.



### Flashing Warning Device

#### Description

A flashing warning device can be used in combination with pedestrian crossing signs and a marked crosswalk at uncontrolled crossing locations. Signs and flashing warning devices can be side-mounted or overhead. Additionally, flashing warning devices can be user-activated. Rectangular Rapid Flashing Beacons (RRFBs) are one example of a flashing warning device.



### Pedestrian or Trail Bridge

#### Description

Bridge specifically for use by pedestrians and bicyclists to cross a stream, water body, steep grade, or other existing feature. The design of the bridge should be based on anticipated users, including maintenance or emergency vehicles. Steel, fiberglass, and wood are materials typically used for pedestrian or trail bridges.



### Curb Extension/Bulb-out

#### Description

Areas of expanded curbing that extend across a parking lane and may narrow a travel lane. Curb extensions create shorter crossing distances for pedestrians while increasing available space for street furniture and plantings. Curb extensions can also serve as a traffic calming measure.



# Toolbox

## ACCESS MANAGEMENT

### Description

Access management refers to means of controlling the ways that vehicles can access major roadways, using measures such as limiting the number of driveways and intersections with local roads. Properly managed access is vital to the safety and efficiency of a community's roadway network. The Active Transportation Toolbox includes a few common access management measures. In addition, PennDOT's *Access Management: Model Ordinances for Pennsylvania Municipalities Handbook* provides additional resources for access management strategies.



### Driveway Spacing

#### Description

Adequate spacing and aligning of driveways to reduce conflicts points and create a safer environment for walking and biking.

## Joint and Cross Access

### Description

Providing joint or cross access between adjacent properties allows circulation between the properties and reduces the number of driveways and conflict areas along a roadway. Joint and cross access can be used in combination with shared parking.



## OFF-ROAD PEDESTRIAN AND BICYCLE FACILITIES

### Shared Use Path

#### Description

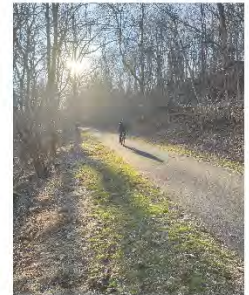
A combined bikeway and walkway that is designed for shared use by bicyclists and pedestrians of all abilities, as well as other non-motorized modes of transportation. Shared use paths along or adjacent to a roadway are physically separated from vehicular traffic by a verge, fencing, or other barrier.

#### Target Users

Bicyclists; Pedestrians; Other non-motorized users

#### Dimensions

10-12 feet wide (8 feet is permissible where there are constraints). When a shared use path is adjacent to a roadway, a 5 foot wide verge is recommended between the edge of the shoulder and the path. If this width is not feasible, a suitable physical barrier is recommended.



#### Surface Materials

Asphalt; Compacted Stone; Concrete



### Pedestrian Path

#### Description

Walkway for use by pedestrians of all abilities. Walking paths may be adjacent to roadways and serve as an alternative design treatment to sidewalks. Walking paths are also prevalent in parks or within other developed sites to provide pedestrian connections and support active recreation.

#### Target Users

Pedestrians

#### Dimensions

< 8 feet wide (6 feet typical)

#### Surface Materials

Asphalt; Compacted Stone

## Sidewalk

### Description

Walkway parallel to the road that is intended for use by pedestrians, often with numerous access points to adjacent land uses. The walkway is typically physically separated from the roadway with a curb and/or verge. The verge may contain grass, vegetation, pavers, and sometimes street trees. Sidewalks are typically concrete, but can be constructed with asphalt, bricks, or pavers.

#### Target Users

Pedestrians

#### Dimensions

< 5 feet wide (minimum). The verge, when provided, may range in width though 4 feet is a typical minimum.



#### Surface Materials

Concrete (typically); Brick; Pavers; Asphalt



# Toolbox



## Footpath

### Description

Walkway for use by pedestrians, typically for recreation purposes. Natural paths are often through or adjacent to undeveloped land. Sometimes foot paths follow the natural landscape or include steep slopes, steps, and stairs that are not fully accessible

**Target Users**  
Pedestrians

**Dimensions**  
Varies

**Surface Materials**  
Grass; Dirt; Other natural surfaces; Steps and stairs

## Boardwalk

### Description

Elevated walkway that is constructed as a series of low-height bridges through sensitive areas with seasonably variable water depths or low strength soils, such as wetlands. Boardwalks typically include a curb or handrail along at least one, often both, edges.

**Target Users**  
Pedestrians; Bicyclists (optional and dependent upon the design)

**Dimensions**  
6-10 feet wide (typical)

**Surface Materials**  
Wood; Wood Composite; Plastic Composite; Concrete (for decking)



## Bike Lane

### Description

A portion of the roadway that has been designated by striping, signage, and pavement markings for the preferential or exclusive public use by bicyclists. Bicycle lanes are located directly adjacent to motor vehicle travel lanes and operate in the same direction as motor vehicle traffic.

### Benefits

- Provides separate space dedicated for cyclists, which can offer added comfort for less experienced riders
- Allows bicycles to operate on a roadway without impeding motor vehicle traffic
- Encourages predictable positioning by bicyclists at intersections

### Dimensions

5 - 7 feet wide (4 feet minimum)



## Shared Roadway/Bicycle Boulevard

### Description

A roadway with signage and pavement markings to indicate the use of a travel lane by both bicycles and motor vehicles. Pavement markings may include a "sharrow," which is a bicycle symbol with two chevron arrows denoting the direction of travel.

### Benefits

### Design Features

- Shared lane pavement marking or "sharrow" placed in accordance with MUTCD, Section 9C.07
- Bicycle May Use Full Lane Sign (R4-11) placed in accordance with MUTCD, Section 9B.06
- Should be limited to roadways with proper speed and traffic volumes to safely accommodate bicyclists

- Alert motorists to the potential presence of bicyclists that may occupy the travel lane
- Recommend proper lateral position for bicyclists
- Encourage safe passing of bicyclists by motorists
- Reduce the incidence of wrong-way bicycling
- Provide wayfinding

## ON-ROAD BICYCLE FACILITIES AND FEATURES

### Visually Separated/Buffered Bike Lane

#### Description

A bicycle lane with a striped buffer area that separates the vehicular travel lane and the shoulder used for the bicycle lane.

#### Benefits

- Provides additional buffer between the bike lane and vehicular traffic
- Offers added comfort for less experienced riders
- Increases visibility and awareness of cyclists within dedicated space

#### Dimensions

2-3 feet wide buffer (2 feet minimum) plus 5-7 feet wide bike lane (4 feet minimum, exclusive of gutter)



### Paved Shoulder

#### Description

A portion of the roadway adjacent to the travel lane that can be enhanced with signage, striping, or coloring to serve as functional space for bicyclists and pedestrians to travel, particularly when other dedicated facilities are not feasible.

#### Dimensions

4 feet wide (minimum); provide greater width based on feasibility and traffic.



# Toolbox

## ENHANCING USERS' EXPERIENCE



### Landscaping and Green Infrastructure

#### Description

Landscaping and green infrastructure can provide shade for pedestrians, integrated stormwater management, and help to create a sense of place. Trees and vegetation can also have a calming effect on traffic with the increased sense of enclosure. The type and location of landscaping should be chosen based on site conditions. A diverse native plant palette can be used in the design of the landscape zones, including trees, shrubs, and groundcover where appropriate. A mix of flowering species can offer seasonal appeal while providing habitat for birds and other native wildlife. Landscaping and green infrastructure can be placed between a road edge and sidewalk or path.

### Streetscape Amenities

#### Description

Benches, trash receptacles, and bicycle racks create a more comfortable and convenient environment for walking, biking, and enjoying the street. The design of the streetscape furniture or amenities should be consistent to convey the unique character of the community. Amenities should be placed so they do not obstruct pedestrian walkways, building entrances, or fire hydrants.



### Seating (Overlooks, Benches, View Areas)

#### Description

Seating areas can be provided along sidewalk, paths, or trails in downtown settings, park areas, or at scenic vistas. Seating can include benches or seat walls and can incorporate public art or other creative design elements to create a sense of place. Seating can be created with natural materials reflecting the native geology or ecology of the region like boulders and/or logs.

### Pedestrian-Scale Lighting

#### Description

Pedestrian-scale street lights, 10-12 feet in height, help provide security along sidewalks, as well as help to provide aesthetic appeal to the streetscape. Lighting adjacent to natural areas should adhere to dark sky lighting recommendations to avoid impacting native habitat.



### Bike Rack

#### Description

A frame that is permanently anchored to the ground and is used to secure bikes when not in use. Bicycle racks should be located in visible areas and near major destinations such as employment centers, business and retail districts, parks, and transit.

#### Placement

Placement of bicycle racks should consider dimensions when occupied and must maintain clear walkways, particularly when placed along sidewalks. Bicycle racks should be setback 2-3 feet from the curb when installed along a street. Bicycle racks can be located under shelters or building overhangs.

### Bike Repair Station

#### Description

A piece of equipment consisting of a simple bicycle stand and tools necessary to perform minor repairs and adjustments. The tools are typically securely attached to the stand, which can be used to hang the bike and allow the pedals and wheels to spin while making adjustments. Repair stations should be located in visible areas, particularly along bicycle routes or near recreational resources.



### Public Art

#### Description

Public art may be incorporated into streetscapes through elements such as: planters and/or benches embellished by local artists, unique bike racks, or other art installations. Public art helps to provide character to streetscapes.

### Banners

#### Description

Banners help to announce and publicize special events, as well as to create an identity and sense of place. Vertical banners may be attached to street light poles or may be freestanding.



# Toolbox

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## Wayfinding and Interpretative Signs

### *Description*

A range of signs, pavement markings, kiosks, or interpretative signs that are used to identify a facility and provide basic information, such as directional arrows, mileage, map, or narrative. Signage can be utilized to interpret local cultural, historical, and ecological themes.

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## Enhanced Bus Stop

### *Description*

A bus stop should include a level loading area where passengers can get on and off the bus. The loading pad should be a minimum of 5 feet wide along the curb and 8 feet deep to allow for the deployment of a front door ramp on the bus. The loading pad should be a firm and slip-resistant surface and free of conflicts. Benches, shelters, lighting, bike parking, and trash receptacles can also be provided at bus stops to enhance the safety and comfort for transit riders.



# Preparation for Public Meeting #1

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- Potential Questions/Prompts
  - Safety
    - *Please share any locations on the corridor where you feel particularly unsafe, whether that be as a driver, pedestrian, or bicyclist.*
  - Congestion
    - *At which locations do you experience the most congestion? Please include any information regarding time of day or season if it is dependent on these or any other factors.*
  - Truck Movements
    - *Which truck movements create safety or operating concerns?*
  - Flooding
    - *Has flooding along the corridor impacted your travel, and if so, how often and where specifically?*
  - Equity
    - *What barriers or issues related to the corridor make travelling more difficult?*
  - Accommodating bicyclists and pedestrians?
    - *Are there locations on the corridor where you would like to be able to walk or bike but you do not feel safe or comfortable doing so?*

# Next Steps

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- Public Meeting #1
- PennDOT Coordination Meeting
- Improvement Development
- Task Force Meeting #3

# Questions

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