



# US 62

CORRIDOR  
Safety Study

## US 62 Corridor Safety Study (Hermitage-Mercer)

ECMS Project #E04315.003

PennDOT Engineering District 1-0, Mercer County

12.13.2019 (FINAL REPORT)

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ECMS Project #E04315.003

12.13.2019 (FINAL REPORT)

## Prepared for:



Engineering District 1-0, Mercer County

## In Coordination with:

Shenango Valley Area Transportation Study Metropolitan Planning Organization  
Mercer County Regional Planning Commission

*and local municipalities within the project area including:*

City of Hermitage  
Jefferson Township  
Lackawannock Township  
East Lackawannock Township  
Borough of Mercer

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### ***Credit/Disclaimer***

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*F1 – Initial Outreach and Coordination Summary (May 2019)*

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### **Appendix G: Cost Estimate Details**

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## Executive Summary

The Pennsylvania Department of Transportation (PennDOT) has conducted a safety study along US Route 62 (US 62) to identify, assess, and suggest possible improvements for existing travel conditions between the City of Hermitage and Mercer Borough in Mercer County. The study reviews roadway, traffic, infrastructure, and other transportation-related safety needs along the 11-mile corridor to develop an action plan of possible short-term and long-term improvement projects. Study efforts have been conducted in cooperation with the Shenango Valley Area Transportation Study - Metropolitan Planning Organization (SVATS-MPO) via the Mercer County Regional Planning Commission (MCRPC). The approach blends an assessment of technical data, field observations, and engineering analyses with direct input from local residents and stakeholder groups familiar with the corridor, including representatives from the local municipalities, public schools, emergency services, business owners, and others.

The project's outreach efforts, technical reviews, and related assessments determined the following:

- US 62 generally consists of one lane in each direction with Annual Average Daily Traffic (AADT) volumes ranging from 7,100 to 10,500 vehicles per day. Background growth rates and projections expect only a marginal increase of approximately 7% additional traffic over a 20-year period.
- Travel time studies indicate only nominal delays of less than a minute during typical peak periods; however, winter travel and non-recurring incidents can substantially influence the corridor. Almost half of the most severe travel delays (20% longer than normal) occur from late November to early March. US 62 is also the Blue Detour Route for emergency closures of I-80.
- Traffic operations analyses found that all stop-controlled intersections and two-lane highway segments included in the study operate within acceptable limits during normal travel conditions. However, turn lane warrant criteria are satisfied at Robertson Road, Valley Road, and Maple Street; and traffic signal warrant criteria are marginally satisfied at Maple Street.
- Potential sight-distance concerns – either for turns at intersections or for mainline travel approaching sites that experience intersection queuing – were identified at several locations.
- Safety assessments noted that 200 reportable crashes occurred from 2013-2017, although most trends and characteristics were comparable to statewide data with no apparent anomalies. A review of frequently-reported driver actions found that more than 71% of all crash activity may be associated with driver behaviors including speed, distracted driving, or improper driving.

### Needs Categories from Initial Public/Stakeholder Input

Category / Sub-Category	Count	%
<b>Safety Concerns</b>	<b>41</b>	<b>49%</b>
Sight Distance	15	18%
Speed	6	7%
Turns / Access	8	10%
Weather / Road Surface	7	8%
Incident Management	5	6%
<b>Infrastructure Concerns</b>	<b>18</b>	<b>22%</b>
Roadway / Shoulders	6	7%
Guiderail / Drainage / Maintenance	4	5%
Traffic Signals	3	4%
Traffic Signing	5	6%
<b>Other Travel Concerns</b>	<b>24</b>	<b>29%</b>
Multimodal (Ped / Bike / School Bus)	10	12%
Trucks / Freight	3	4%
Congestion	4	5%
Planning and Development	7	8%
<b>TOTAL</b>	<b>83</b>	<b>100%</b>

Based on these and other findings documented throughout the study, alternatives were developed to primarily address location-specific enhancements in response to location-specific needs. Broad, corridor-wide solutions (e.g. continuous widening) were not warranted or considered at this time. Instead, improvements were grouped and indexed by location to address corridor needs within six areas as shown in [Exhibit ES-1](#).

Proposed improvements may be described under three general categories:

- **Low-cost Intersection Treatments:** including combinations of signing, pavement markings, and other upgrades to improve safety and potentially reduce travel speeds within the corridor. Such improvements aim to enhance the visibility and conspicuity of intersection, as well as the effectiveness of and compliance with traffic control devices at or approaching the intersections
- **Infrastructure Improvements:** including a variety of alternatives and locations with proposed shoulder widening, new turn lane installations, intersection or side-road realignments, or climbing lane additions or modifications.
- **Other Improvements:** including miscellaneous improvements that involve specific maintenance activities, upgrades to advance signing or signal operations at Keel Ridge Road, and follow-up study within Mercer Borough, to include a focus on potential access and circulation changes that could enhance operations and safety at the US 62 intersection at Shenango Street.

The final consensus set of improvements was compiled with additional details to help support future project planning and decision-making along the US 62 corridor. These details included project timeframe, estimated cost, anticipated maintenance elements, design & permitting efforts, public buy-in, right-of-way and utility impacts, and potential influence on safety and operations as summarized in [Exhibit ES-2](#). Project implementation sheets were also compiled within the plan to highlight other relevant planning insights such as responsible parties, project partners, potential funding sources, and project purpose, needs, or anticipated challenges.

In this manner, the study essentially outlines a corridor master plan where the implementation or timeframe of any given element may be based less on “priority” within the corridor, and more on relative opportunity, cost, complexity, impact potential, or funding availability. Funding will be an exceptionally critical constraint, as the outcomes of this study must be weighed alongside broader transportation needs and priorities elsewhere throughout the study area municipalities, Mercer County, and PennDOT District 1-0’s six-county jurisdiction.

The collective findings of this plan encompass the critical first steps toward identifying specific needs and ideas that local, county, and state agencies may reference as they continue to plan for, prioritize, and implement transportation improvements throughout the broader region. Logical next steps could consider incorporating project concepts into planned or future maintenance or betterment activities, Mercer County’s Long-Range Transportation Plan (LRTP), or the four-year Transportation Improvement Program (TIP); at this time, however, no projects identified herein are committed or funded.

Exhibit ES-1: US 62 Detailed Alternatives Map





### Exhibit ES-2: Improvements Compilation and Planning Considerations

Alternative / Description	Timeframe	Est Cost (\$ 000's)	Maintenance Elements <sup>(b)</sup>	Design & Permitting	Public Buy-In	ROW Impact	Utility Impact	Safety Influence	Operations Influence
<b>US 62 Corridor Management (Multiple Locations)</b>									
Corridor-Wide: Maintenance Review Package	ST-MT	Varies	(BG) (DS) (PV) (SM)	Simple	Med	Low	Low	Low	Low
B1, B2, C1, C2, C3, C4, C5, E1: Intersection Treatment Candidates	ST-MT	Varies <sup>(a)</sup>	(PL) (PV) (SM)	Simple	Med	Low	Low	High	Med
<b>Area (A) – Keel Ridge Road</b>									
A2: US 62 South (WB) Red Signal Ahead Sign	ST-MT	\$140	(PL) (SM) (TS)	Simple	Med-High	Low	Low	High	Low
A4: US 62 South (WB) Shoulder Widening w/ Barrier	MT	\$450	(BG) (DS) (PV)	Simple-Mod	High	Low	Low	Med	Low
<b>Area (B) – Robertson Road to Darby Road</b>									
B3: US 62 / Robertson Rd Turn Lanes	MT	\$790	(PV) (SM)	Simple	High	Low-Med	Med	Med	High
B4: Alternative B3 plus Multi-Use Trail and Darby Rd Roundabout	LT	\$6,900	(DS) (PV) (SM)	Complex	Low	High	High	High	High
<b>Area (C) – Neshannock Rd to Bend Road</b>									
C6: US 62 / Neshannock Rd Turn Lanes (w/ optional TWLTL extension)	MT	\$730-\$1,100 <sup>(c)</sup>	(PV) (SM)	Simple	High	Med	Med	Med	Med
<b>Area (D) – Zahniser Road to Valley Road</b>									
D1: US 62 South (WB) Climbing Lane Adjustments to Zahniser Rd	ST	\$70	(SM)	Simple	High	Low	Low	Low	Med
D2: US 62 / Valley Rd Turn Lanes (with optional realignment)	MT-LT	\$1,200-\$2,600 <sup>(c)</sup>	(BG) (DS) (PV) (SM)	Simple-Mod	Med-High	Low-Med	Low	Low	High
<b>Area (E) – Skyline Drive to West of Mercer Borough</b>									
E2: US 62 North (EB) Climbing Lane to West of Bestwick Rd	LT	\$3,100	(BG) (DS) (PV) (SM)	Complex	Med-High	High	Med-High	High	High
E3: US 62 / Bestwick Rd Turn Lanes with Realignment	MT-LT	\$1,200	(BG) (DS) (PV) (SM)	Mod	Med	Med	Low-Med	Low	Med
E4: US 62 / Center Turn Lane between Autumn & Landis Dr	LT	\$2,500	(BG) (DS) (PV) (SM)	Simple	Med	Med	Med	High	High
<b>Area (F) – Mercer Borough</b>									
F2: US 62 / Mercer Borough Circulation Study <sup>(d)</sup>	ST-MT	\$25	n/a	Simple	TBD (Med)	TBD (Low)	n/a	TBD (High)	TBD (Med)
F1: US 62 / Maple St Traffic Signal with Turn Lanes	MT	\$1,700	(PL) (PV) (SM) (TS)	Mod	Med	Low-Med	Med	Med	High

**Table Notes:**

- (a)** Costs vary per treatment per location, ranging from nominal costs for minor signing/markings upgrades, up to \$50,000 for broader applications such as Smooth Lane Narrowing with Rumble Stripes.
- (b)** Future maintenance elements may include: (BG) barrier and guiderail; (DS) drainage & stormwater; (PL) power & lighting; (PV) pavement; (SM) signing & markings; or (TS) traffic signal operations.
- (c)** Cost range indicates turn lane estimates (1) without and (2) with the optional elements (i.e. TWLTL extension at Neshannock Road, or realignment at Valley Road).
- (d)** Relative outcomes of the study are to-be-determined (TBD) pending future recommendations; low-med-high estimates shown here reflect potential outcomes if US 62 / Shenango Street is improved.
- (e)** Color shading implies BLUE as least challenging or most relative benefit; YELLOW as medium; and ORANGE as most challenging or least relative benefit.

## Introduction

### Project Summary

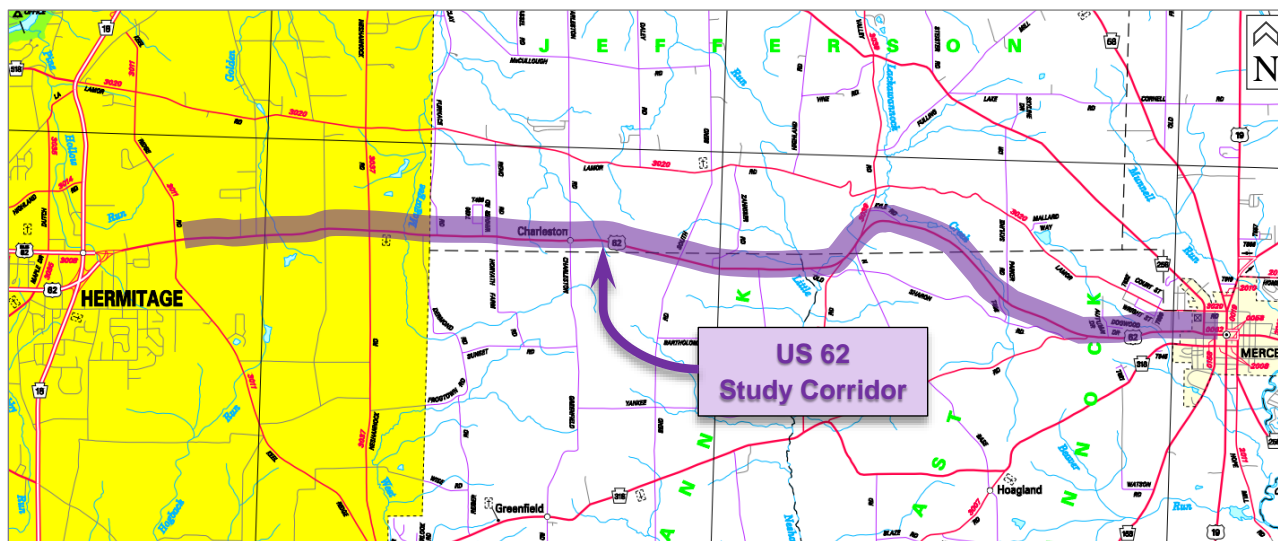
The northwest region of the Pennsylvania Department of Transportation (PennDOT) has conducted a safety study along US Route 62 (US 62) to identify, assess, and suggest possible improvements for existing travel conditions between the City of Hermitage and Mercer Borough in Mercer County. The study reviews roadway, traffic, infrastructure, and other transportation-related safety needs along the corridor to develop an action plan of possible short-term and long-term improvement projects.

PennDOT has conducted this study in cooperation with the Shenango Valley Area Transportation Study - Metropolitan Planning Organization (SVATS-MPO) via the Mercer County Regional Planning Commission (MCRPC). The approach blends an assessment of technical data, field observations, and engineering analyses with direct input from local residents and stakeholder groups familiar with the corridor, including representatives from the local municipalities, public schools, emergency services, business owners, and others.

### Location and Study Limits

The study corridor ([Exhibit 1](#)) crosses five municipalities in Mercer County including the City of Hermitage, Jefferson Township, Lackawannock Township, East Lackawannock Township, and Mercer Borough. US 62 within the study area covers approximately 10.7 miles from the intersection of Keel Ridge Road (SR 3011) in Hermitage, to US Route 19 (US 19) in Mercer Borough. US 62 at a broader scale is signed as a north/south route, though it runs predominately east/west through the immediate study area. To minimize confusion throughout this study, references will be made to US 62 North (eastbound) and US 62 South (westbound).

Exhibit 1: Project Location Map



### Document Organization

This report is framed around stages of the overall safety study that include (1) Data Collection and Analysis, (2) Outreach and Coordination, (3) Preliminary Alternatives, (4) Detailed Alternatives, and (5) Consensus Set of Safety Improvements. Supporting details, where applicable, are referenced to the report's technical appendices. Among these appendices, confidential safety data and related analyses that help to inform the overall study are packaged under separate cover. The confidential elements include corridor-specific crash histories, existing and projected safety conditions, and safety assessments of the proposed project improvements.

## Data Collection and Analysis

### Background Information

US 62 is identified as one of several major corridors that affect the Mercer region and was profiled in detail as Corridor #7 under the 2006 *Mercer County Comprehensive Plan* ([Appendix A](#)). Key recommendations from the 2006 plan noted that “as a growing commuter corridor, the US 62 roadway should be studied to identify and recommend spot safety improvements such as passing lanes and turning lanes,” and that other improvements should be identified to “improve flow and increase the operating efficiency and safety of the corridor.”<sup>1</sup>

### Physical Conditions Inventory

Within the study corridor today, US 62 generally consists of one travel lane in each direction with speed limits varying from 35 to 55 miles per hour (MPH). Other roadway details include the following:

- From Keel Ridge Road to Hermitage city limits (encompassing approximately 2.5 miles ending between Dermond Road and Clay Furnace Road), US 62 is functionally classified as *Rural – Other Principal Arterial* ([Exhibit 2](#)). This section is also included as part of the National Highway System (NHS), making it eligible for National Highway Performance Program (NHPP) funding.
- The remaining 8.5 miles of the corridor between Hermitage and US 19 in Mercer Borough are classified as *Central Rural – Minor Arterial*. ([Exhibit 2](#)). While not currently included on the NHS, the SVATS-MPO has been in the process of completing a functional classification reassessment and may be appealing to Federal Highway Administration (FHWA) to pursue making the entirety of the US 62 corridor part of the NHS and re-classified into the *Other Principal Arterial* category.
- Passing zones are provided for travel in one or both directions at numerous locations along the corridor ([Exhibit 3](#)).
- An extra travel/climbing lane is located on US 62 South (westbound) for approximately 0.85 miles from Old Sharon Road (T495) to the hillcrest just prior to Zahniser Road (T550) ([Exhibit 3](#)).
- The corridor includes approximately 27 side-street intersections, not counting numerous commercial and residential driveways. All locations are unsignalized using two-way (side-street) stop-control, with the exception of existing traffic signals at each end of the corridor including US 62 at Keel Ridge Road, and US 62 at US 19 ([Exhibit 3](#)). One flashing yellow signal is also present at the intersection of US 62 at Neshannock Road (SR 3037).
- Lighting is provided at both signalized intersections, as well as several unsignalized intersections along the corridor. Utility poles are present along at least one side of the roadway throughout the entirety of the corridor.
- Roadway widths, shoulder conditions, guide rail, end treatments, drainage, and other physical features were generally observed by the project team during multiple field investigations in March-June 2019. Sample findings/summaries are documented in [Exhibit 4](#) through [Exhibit 6](#).

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<sup>1</sup> Reference: *Mercer County Comprehensive Plan* (2006), <https://mcrpc.com/mercercountys-comprehensive-plan/>

Exhibit 2: Roadway Classifications and Posted Speed Limits

Jurisdiction	Functional Classification	Traffic Pattern Group (TPG)	Posted Speed Limit (MPH)
City of Hermitage	Rural - Other Principal Arterial	4	40-45
Jefferson Twp	Central Rural - Minor Arterial	7	45-55
Lackawannock Twp	Central Rural - Minor Arterial	7	55
East Lackawannock Twp	Central Rural - Minor Arterial	7	45-55
Mercer Borough	Central Rural - Minor Arterial	7	35

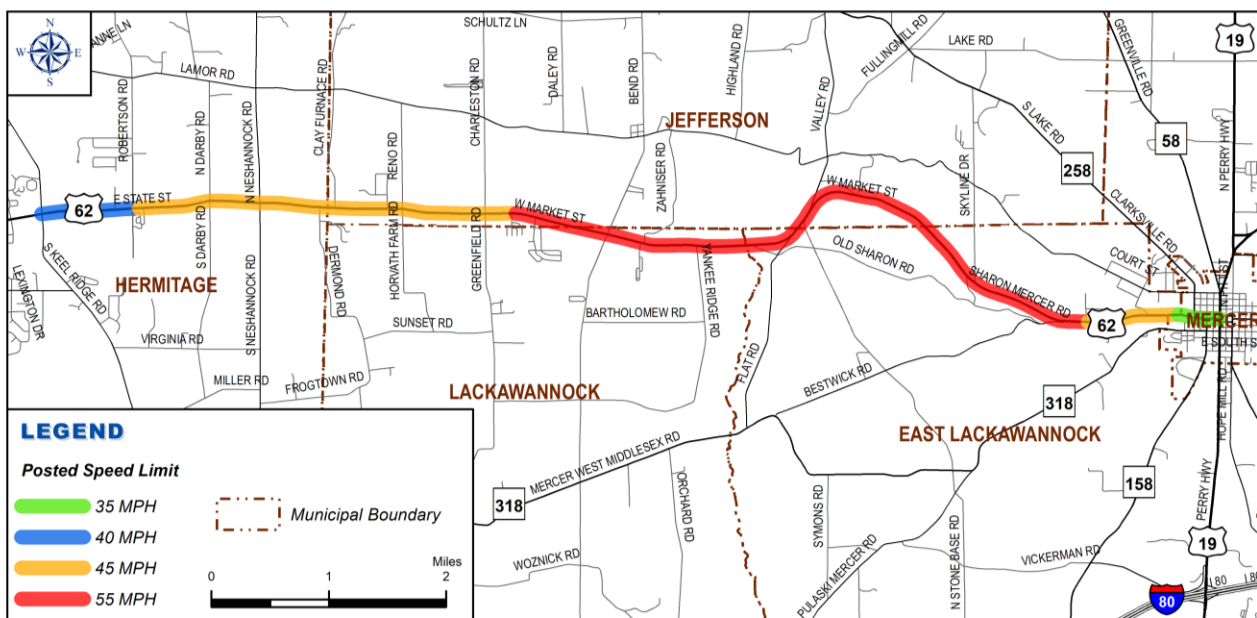
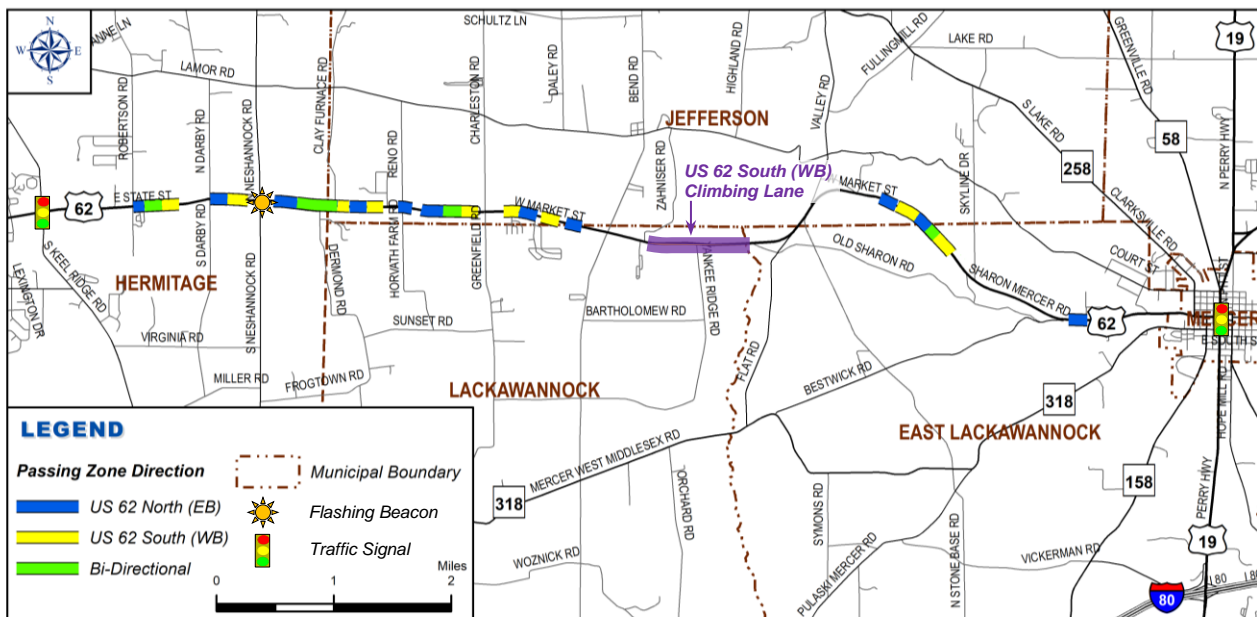


Exhibit 3: Passing Zone, Climbing Lane, and Traffic Signal Locations





## Exhibit 4: Physical Conditions Inventory (Roadway)



### Detail 1 - Roadway Measurement Substandard\* Shoulder Widths



LT SHLDR - LT LANE - RT LANE - RT SHLDR  
5'-0" 11'-0" 11'-0" 4'-10"  
Typical Section (looking NB)

Detail 2 - Roadway Measurements  
Substandard\* Shoulder Widths



LT SHLDR - LT LANE - RT LANE - RT SHLDR  
5'-4" 13'-7" 12'-6" 4'-7"  
Typical Section (looking SB)

### Detail 3 - Roadway Measurement Substandard\* Shoulder Widths



LT SHLDR - LT LANE - RT LANE - RT SHLDR  
5'-4" 12'-10" 12'-0" 5'-10"  
Typical Section (looking SB)

#### Detail 4 - Roadway Measurement Substandard\* Shoulder Widths




LT SHLDR - LT LANE - RT LANE - RT SHLDR  
6'-4" 12'-3" 12'-8" 5'-8"  
Typical Section (looking NB)

### LEGEND

### Feature Type

- Roadway Measurement

### Roadway Type

-  Interstate  
 US Route  
 PA Route  
 Other State Route  
 US 62 Safety Study Corridor  
 Municipal Boundary

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(Hermitage-Mercer)

Physical Inventory (Roadway)



*\*Based on PennDOT Design Manual Part 2 Highway Design (Publication 13M - March 2015) Design Criteria*

## Exhibit 5: Physical Conditions Inventory (Guide Rail)



Detail 1 - Potential Need for Guide Rail Example 1



Detail 2 - Damaged Guide Rail Example



Detail 3 - Substandard\* Guide Rail End Treatment Example



Detail 4 - Potential Need for Guide Rail Example 2



### LEGEND

#### Feature Type

- Guide Rail - Substandard/Damaged
- Guide Rail - Potential Need

#### Roadway Type

- Interstate
- US Route
- PA Route
- Other State Route
- Local Road
- US 62 Safety Study Corridor
- Municipal Boundary

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(Hermitage-Mercer)

Physical Inventory (Guide Rail)



Exhibit 6: Physical Conditions Inventory (Miscellaneous Features)



**Detail 1 - Heavily Eroded Shoulder Backup**

Pavement layers exposed, soft shoulder backup material & guide rail post exposure on RT side of US 62 (looking NB)

**Detail 2 - Signage Needs Replaced**

Downed 'watch for stopped vehicles' signage along RT side of US 62 (looking NB)

**Detail 3 - Heavily Eroded Roadside Drainage**

Inadequate stormwater drainage facilities along RT side of US 62 (looking NB)

**Detail 4 - Heavily Eroded Roadside Drainage**

Inadequate stormwater drainage facilities along RT side of US 62 (looking NB)

**LEGEND**

**Feature Type**

- Stormwater
- Shoulder

**Roadway Type**

- Interstate
- US Route
- PA Route
- Other State Route
- US 62 Safety Study Corridor
- Municipal Boundary

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**US 62 Corridor Safety Study**  
**(Hermitage-Mercer)**

Physical Inventory (Miscellaneous Features)



### *Multimodal Planning Considerations*

Beyond the physical roadway infrastructure, a variety of other factors were also considered relative to their potential influence on overall travel, safety, or future improvement conditions.

- US 62 is represented as Corridor #202 in the *Mercer County Congestion Management Processes* (CMP) program, which monitors recurring and non-recurring congestion-related data for designated travel corridors within the county.
  - Updates from the 2013 CMP included qualitative rankings of the CMP's Top-20 corridors. In that update, US 62 ranked first for non-recurring congestion issues, fifth for freight issues, and fifth for safety issues; while also being flagged for community, roadway infrastructure, and traffic operations concerns.<sup>2</sup>
  - More recent updates from the 2018 CMP show a nominal increase in US 62 peak hour travel delays of less than 1-minute per year (2016-2018), coupled with less reliable (or more unpredictable) travel in terms of how significantly or how frequently travel times deviate from their expected averages. The corridor ranked mid-pack in terms of total delay (14<sup>th</sup> of 24 corridors assessed), but relatively high (6<sup>th</sup>) in terms of having less predictable travel.<sup>3</sup>
- Transit on US 62 is operated by Shenango Valley Shuttle Service (SVSS). The SVSS Courthouse Route includes one roundtrip bus per day between Shenango Valley communities and the Mercer County Courthouse, extending to Grove City Community Library upon passenger request.
- Outside of periodic sidewalk segments within Mercer Borough, adjacent to newer developments such as Connect Hearing (near Keel Ridge Road) or Dollar General (near Neshannock Road), and a short section of paved trail in front of Whispering Pines Community Park, no other pedestrian or bicycle facilities are present along the existing corridor.
- The 2017 *City of Hermitage Trails and Sidewalks Priorities Plan* references future project candidates that may influence pedestrian travel via new connections to or near the US 62 study corridor. Specific projects are detailed in Area 5 of that plan ([Exhibit 7](#)) and include establishing pedestrian facilities that generally link Robertson Road, Darby Road, and Whispering Pines Park.
- The 2011 *US Route 19 Corridor Study* also references future project candidates that include repairing existing sidewalks and constructing missing sidewalk segments to complete the sidewalk network within Mercer Borough. Specifically highlighted among the project candidates is the repair of sidewalk sections along both sides of US 62 between Maple Street, Shenango Street, and US 19, as well as new sidewalk construction around the southeast quadrant of the US 62 and Maple Street intersection.

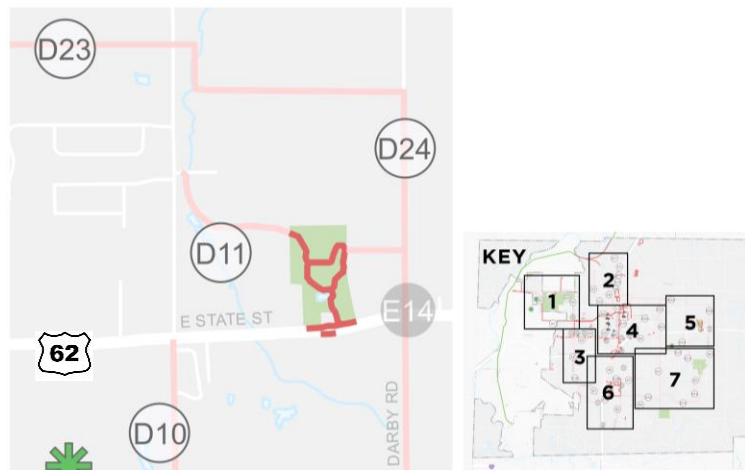
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<sup>2</sup> **Reference:** *Mercer County CMP: 2013 County-Wide Summary Report*, 2013 County-Wide Corridor Details Table, and 2013 Top-20 Corridor Summary Table, <https://mcrpc.com/wp-content/uploads/MPO/Mercer-CMP-2013-County-Wide-Summary.pdf>

<sup>3</sup> **Reference:** *Mercer County CMP: 2018 County-Wide Summary Report* (Exhibit 5), based on total vehicle-hours of delay for the PM peak period, coupled with travel time reliability using INRIX data and % Buffer Index metrics that reflect the magnitude and frequency of travel time deviations in comparison to expected average travel times.

## Exhibit 7: Hermitage Planned Pedestrian Improvements

## AREA 5



### D10 E. State Street

Typology: Non-Roadway Multi-Use

Mobility Zone: 1

Description: Establish pedestrian facilities from E. State Street along S. Robertson Road (along the Eastern edge of the VFW Golf Course property).

Projected Investment Cost: \$157,978

Priority Level: Medium

### D11 Robertson Road

Typology: Non-Roadway Multi-Use

Mobility Zone: 2

Description: Establish pedestrian facilities from Robertson Road to Whispering Pines Park.

Projected Investment Cost: \$147,206

Priority Level: Medium

### D23 Robertson Road

Typology: Non-Roadway Multi-Use

Mobility Zone: 2

Description: Establish pedestrian facilities along property lines to N. Darby Rd.

Projected Investment Cost: \$718,080

Priority Level: Medium

### D24 N. Darby Road

Typology: Non-Roadway Multi-Use

Mobility Zone: 2

Description: Establish pedestrian facilities from Whispering Pines connection to Robertson Road connection.

Projected Investment Cost: \$186,701

Priority Level: High

### E14 E. State Street

Typology: Crosswalk Improvement

Mobility Zone: 2

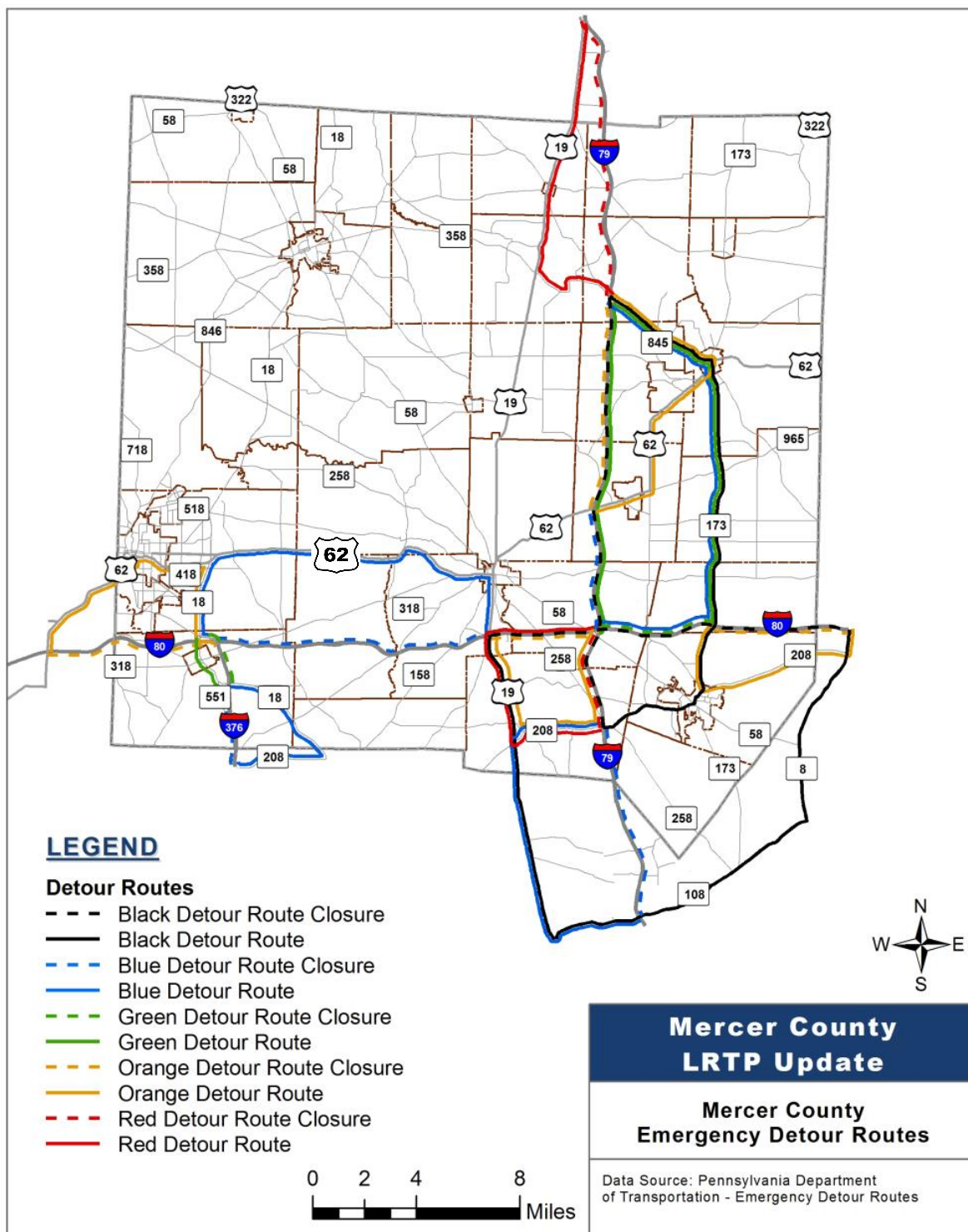
Description: S. Darby Rd.

Projected Investment Cost: \$3,500

Source: City of Hermitage Trails and Sidewalks Priority Plan (2017)

- US 62 serves as the Blue Detour Route for emergency closures of I-80 between I-80 Exits 4A/4B (I-376 and PA Route 18) and I-80 Exit 15 (US 19). ([Exhibit 8](#))

Exhibit 8: Mercer County Emergency Detour Routes

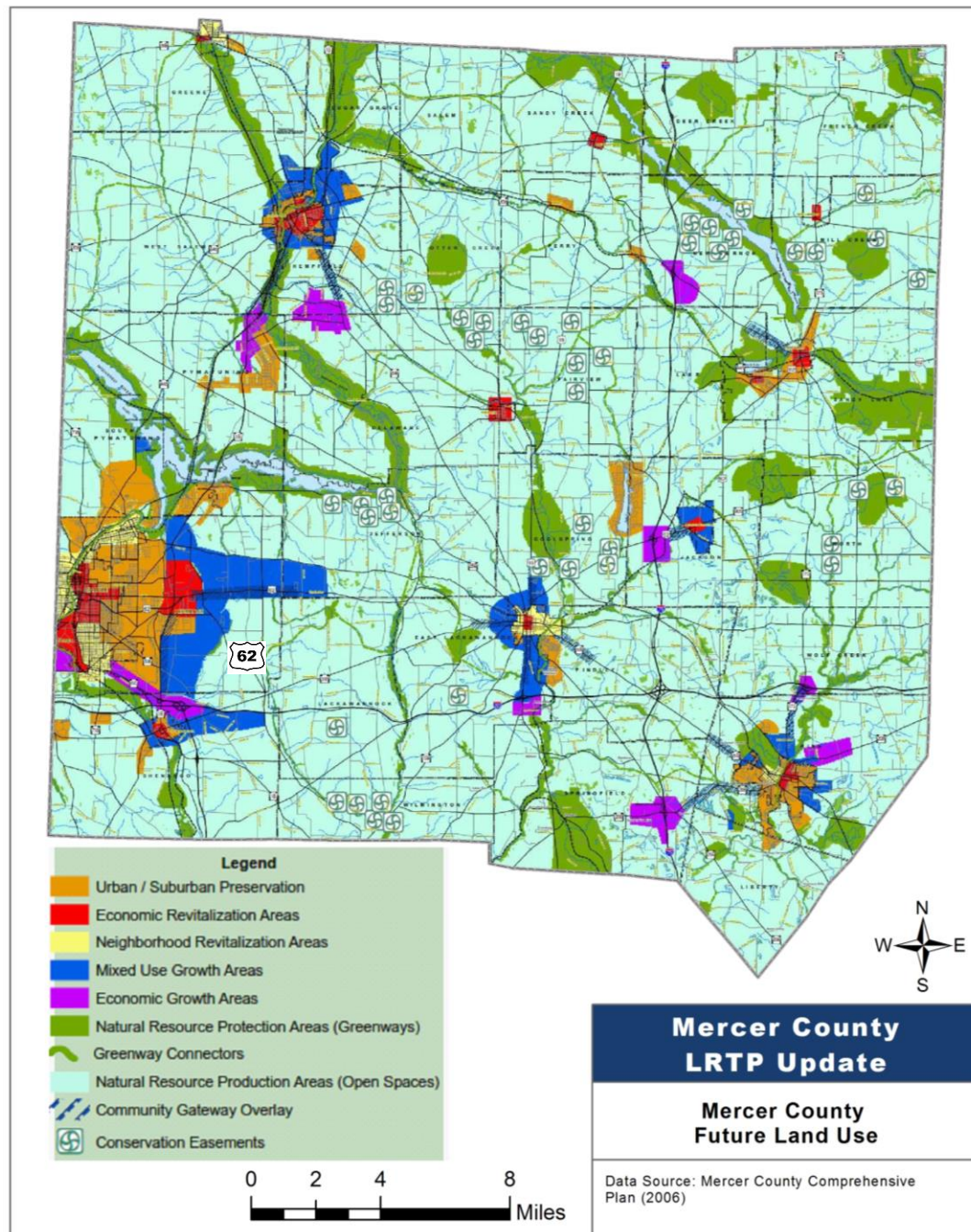


Source: Mercer County Long Range Transportation Plan Update (2016) with data from PennDOT



- Existing land use along the entirety of the study corridor consists primarily of forest or farmland with pockets of low density urban coverage.<sup>4</sup> Future land use projections (Exhibit 9) retain much of this character with an emphasis on *Natural Resource Production Areas (Open Spaces)* along the eastern half of the corridor, coupled with *Mixed Use Growth Areas* along the western half of the corridor and within limits for the City of Hermitage.

Exhibit 9: Mercer County Future Land Use



Source: Mercer County Long Range Transportation Plan Update (2016) with data from Mercer County Comprehensive Plan (2006)

<sup>4</sup> Reference: Mercer County Comprehensive Plan (2006), <https://mcrpc.com/mercer-countys-comprehensive-plan/>

### *Anticipated Project Plan/Commitments*

Anticipated project plans and commitments along the corridor were reviewed based on available information from PennDOT's Twelve Year Plan (TYP) and four-year Transportation Improvement Program (TIP).<sup>5</sup> Relevant past, current, and future plans from available TYP/TIP listings include:

- **Project ID 97869 (Completed):** This completed project (2014-2015) included restoration and resurfacing along US 62 between approximately Valley Road and PA 258/North Maple Street.
- **Project ID 110218 (2019):** This project is the subject US 62 Corridor Safety Study. Representation on the current TIP effectively reflects the fulfillment of study recommendations that were previously included in the 2006 *Mercer County Comprehensive Plan* and the 2016 *Mercer County Long Range Transportation Plan Update*.
- **Green-Light-Go Program (2019):** US 62 / Keel Ridge Road Intersection – This ongoing project in collaboration with PennDOT and the City of Hermitage will upgrade the existing traffic signals, poles, signage, and related equipment at the existing intersection.
- **Project ID 109139 (2019):** SR 258 – This project includes 0.81 miles of restoration, replacement, and betterment on SR 258 (South Pitt Street and North Maple Street) in the City of Mercer.
- **Project ID 105775 (2019-2020):** US 62 / State Street Intersection – This project replaces the existing signalized intersection with a new roundabout to provide an efficient and safer intersection for both vehicles and pedestrians.
- **Project 97907 (2019-2022):** SR 19 – This betterment project includes 1.66 miles of resurfacing and safety improvements including guiderail upgrades, rumble strips, radii improvements and signage on US Route 19 (Perry Highway/Franklin Street).
- **Project ID 97306 (2025):** US 62 Bridge over Lackawannock Creek – This project includes the restoration/rehabilitation/replacement of the US 62 Bridge over Lackawannock Creek in East Lackawannock Township. Located approximately between White Road and Skyline Drive, the bridge is 15 feet in length.
- **Project ID 97327 (2027):** US 62 Bridge over Shenango River Tributary – This project includes the restoration/rehabilitation/replacement of the US 62 Bridge over the Shenango River Tributary in the City of Hermitage. Located approximately between Neshannock Road and Dermond Road, the bridge is 23 feet in length.
- **Project ID 97913 (2027):** SR 3011 – This project includes 5.99 miles of restoration/resurfacing (betterment) on State Route 3011 (Keel Ridge Road) from State Route 318 to Valley View Road in Shenango Township and the City of Hermitage.

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<sup>5</sup> Reference: <http://www.projects.penndot.gov/projects/TipVisMap.aspx>

## Traffic Volumes and Projections

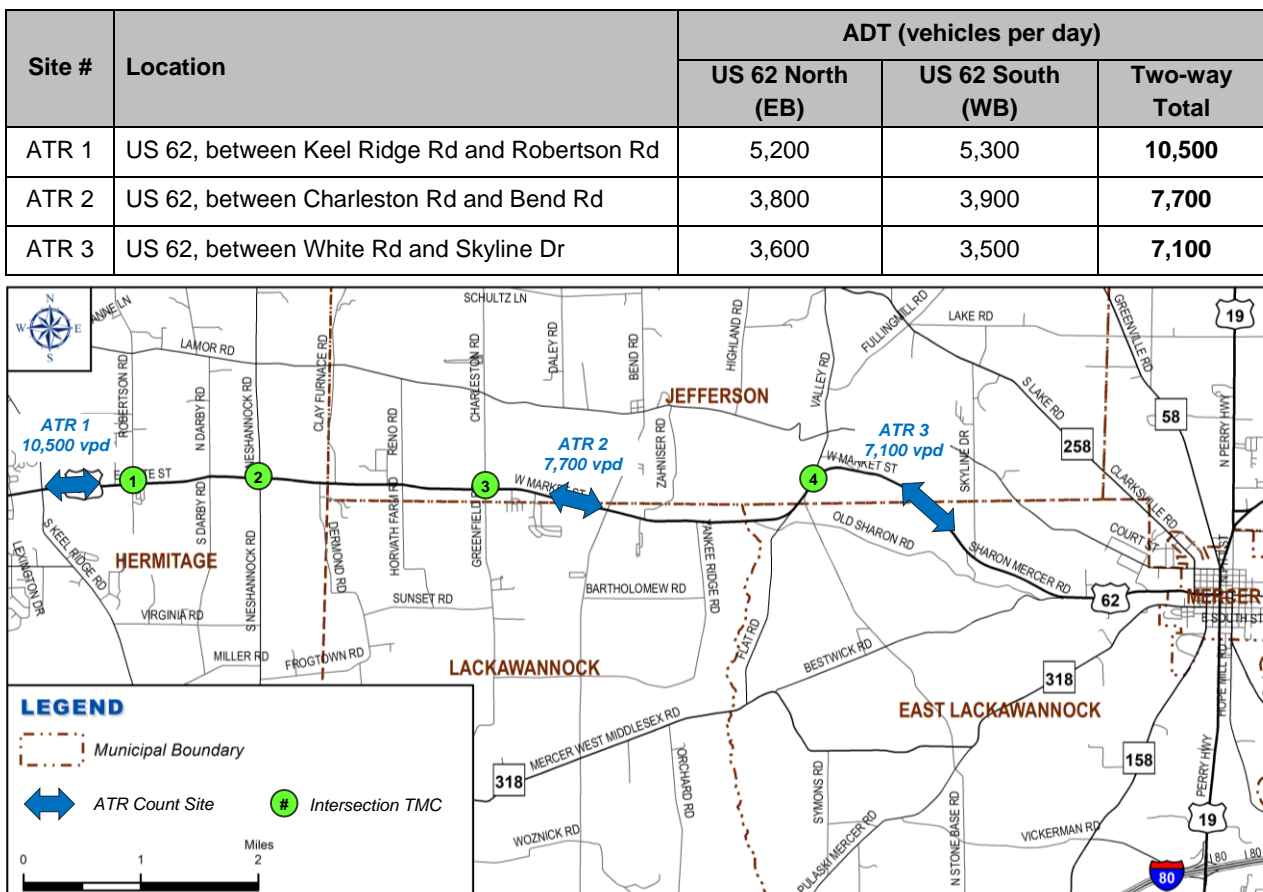
Traffic counts were collected at multiple locations along the corridor ([Exhibit 10](#)) and included midblock Average Daily Traffic (ADT) counts and intersection Turning Movement Counts (TMCs). All count data was collected using Miovision™ video-based traffic count equipment. Raw traffic count data and technical compilations are detailed as an appendix to this study ([Appendix B](#)); overall ADT volumes and intersection peak hour traffic volumes are summarized below.

### Average Daily Traffic Volumes

Hourly traffic volumes were collected at three midblock locations along US 62 ([Exhibit 10](#)) for a full 24-hour period on Wednesday, March 20, 2019. The 24-hour count totals were adjusted to reflect seasonal variations in traffic, which yield the estimated Annual Average Daily Traffic (AADT) volume for each count site.<sup>6</sup>

Resulting AADT volumes ranged from 7,100 to 10,500 vehicles per day (vpd) ([Exhibit 10](#)). All three count locations identified that daily traffic volumes are generally split evenly per direction. The highest hourly volumes occurred during the weekday PM peak from approximately 4:30 to 5:30 PM with peak hour totals ranging from approximately 350 to 500 vehicles per hour (vph) in each direction.

Exhibit 10: Average Daily Traffic Volumes and Count Locations



<sup>6</sup> ADT to AADT adjustment factors were selected and applied based on the Traffic Pattern Group at each site ([Exhibit 2](#)), the actual count date, and related adjustment criteria per the 2018 *Pennsylvania Traffic Data* manual (PennDOT Publication 601).

### *Intersection Turning Movement Volumes*

Intersection TMCs were collected at four sites along the study corridor ([Exhibit 10](#)) including the intersections of US 62 and (1) Robertson Road, (2) Neshannock Road, (3) Charleston Road and Greenfield Road, and (4) Valley Road. All four intersections currently operate unsignalized with two-way (side-street) stop control. TMC data was collected concurrently with the ATR counts on Wednesday, March 20, 2019.<sup>7</sup> Based on peak travel periods identified by the ATR data, peak hour intersection TMC data was compiled for the following:

- Weekday AM peak hour: 7:30 am to 8:30 am
- Weekday PM peak hour: 4:30 pm to 5:30 pm

Resulting intersection turning movement volumes for the 2019 Base Year study periods were summarized at each count location ([Exhibit 11](#)). Additional details including peak hour factors and truck percentages were also compiled to support traffic operations analyses later in this study. Peak hour truck percentages varied by location, time-of-day, and turning movement, with the overall intersection totals typically ranging from approximately 1% to 6% trucks.

### *Future Traffic Growth*

To estimate future traffic growth, PennDOT District 1-0 provided a background annual growth rate of 0.35% (linear) based on historic traffic volume data and trends specific to Mercer County. Over a 20-year period, this rate would yield only a marginal increase of approximately 7% additional traffic. The approved growth rate was applied to the Base Year 2019 intersection turning movement volumes to yield corresponding traffic projections for Horizon Year 2039 ([Exhibit 12](#)).

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<sup>7</sup> Except for the US 62 and Charleston Road / Greenfield Road intersection, which was a supplemental site that was estimated based on 30-minute AM/PM manual counts conducted on Thursday, March 21, 2019, and adjusted to approximate a full hour of data per peak.



Exhibit 11: Intersection Turning Movement Volumes (Base Year 2019)

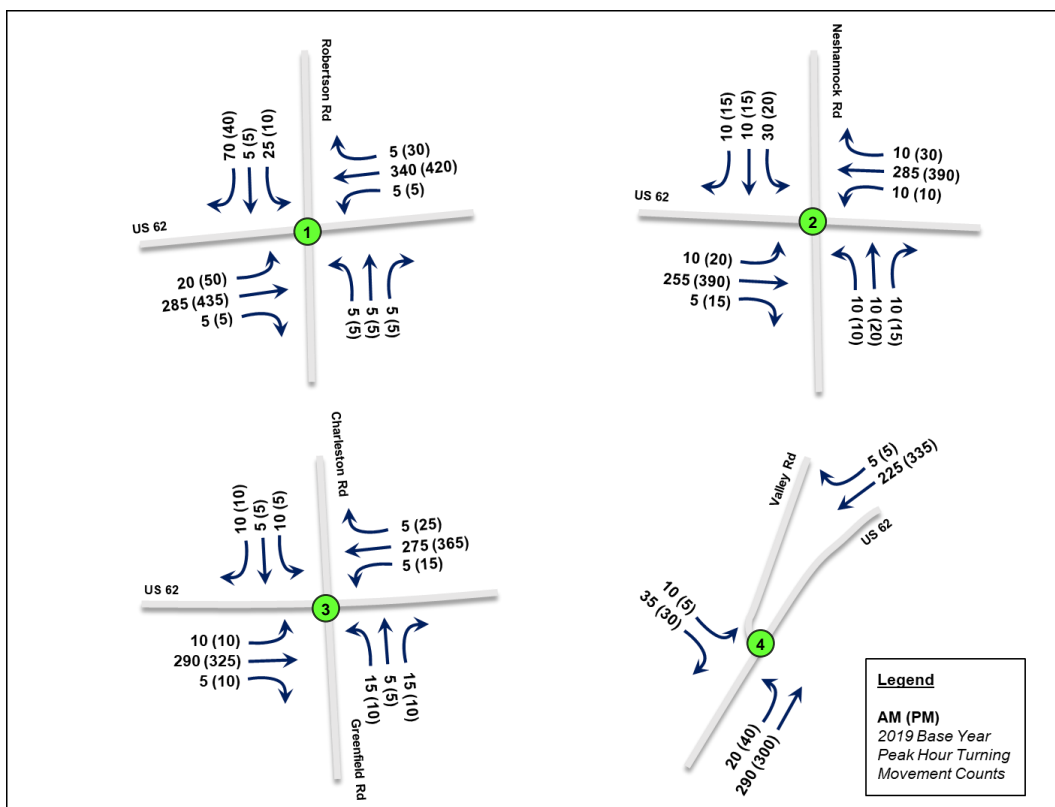
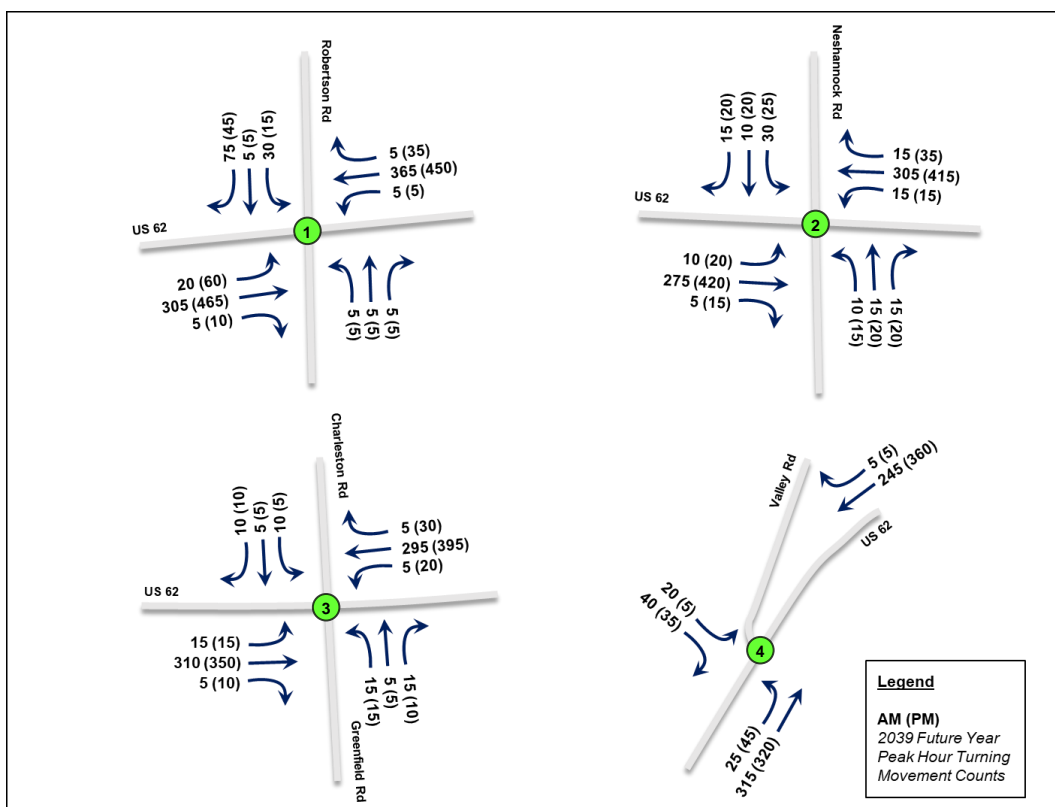


Exhibit 12: Intersection Turning Movement Volumes (Horizon Year 2039)



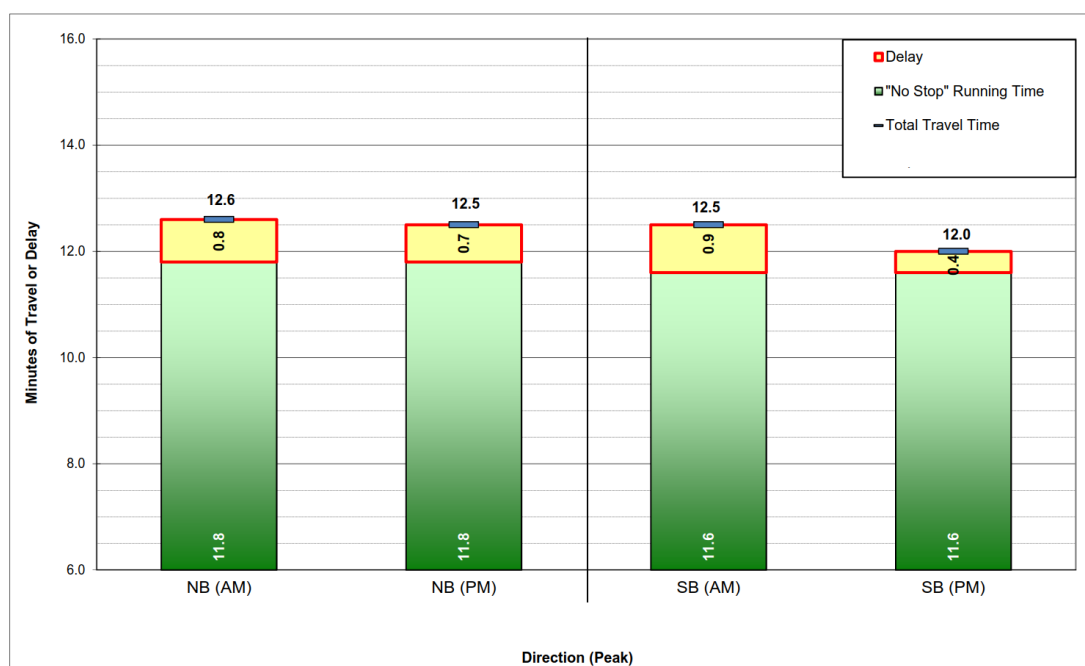
## Traffic Engineering Studies

Field measurements and traffic engineering studies were conducted to help assess existing travel conditions and identify unique aspects of the local travel environment. Specific studies included compilations of travel time and delay, site-specific (spot) travel speeds, and intersection-specific sight-distance measurements. Technical data are included in an appendix to this report ([Appendix C](#)) with summary findings as highlighted below.

### Travel Time and Delay Studies

Project-specific travel time runs were performed by driving end-to-end in each direction along the study corridor with the prevailing speed of traffic (i.e. the floating-car method) during the weekday AM and PM peak periods. While driving, travel time and location data were recorded continuously using a laptop computer with a GPS receiver and Tru-Traffic TSPPD software. Results were used to estimate peak period delays based on comparison to a theoretical “no-stop” running time that it would take to traverse the study corridor at the posted speed limit in the absence of any interruptions. Findings show that the overall 10.6 mile trip along US 62 between Keel Ridge Road and US 19 took approximately 12.0 to 12.6 minutes with only nominal delays of less than a minute in either direction during either peak ([Exhibit 13](#)).

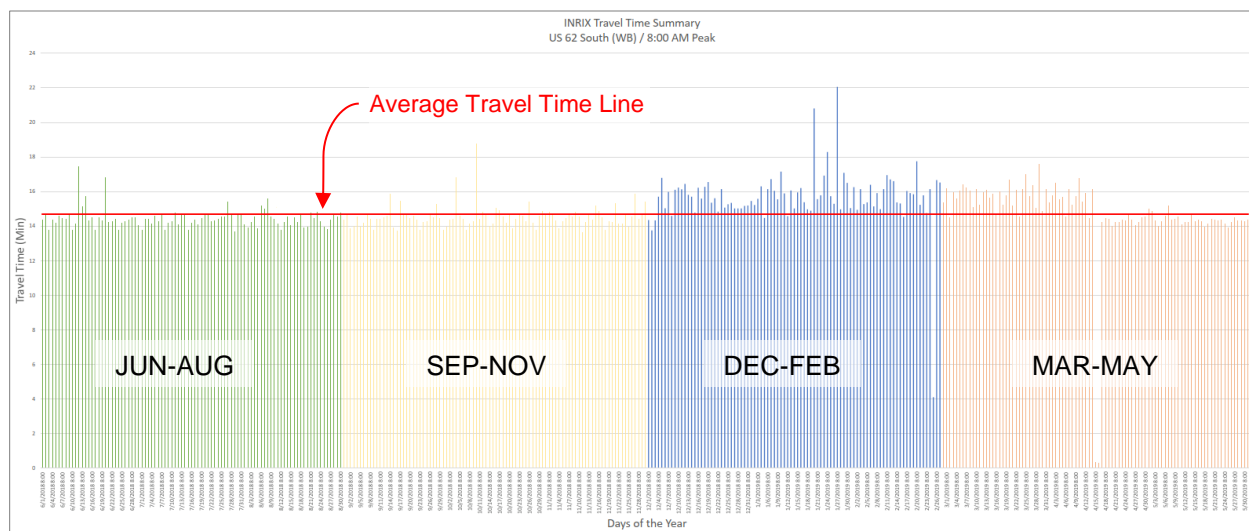
Exhibit 13: Field-Measured Travel Time and Delay Summary



In addition to the direct field measurements above, one full year of historical travel time data was also reviewed to identify broader trends related to how frequently and/or how severely average travel times along the corridor may swing based on non-recurring events such as inclement weather or crashes. Historical data was compiled based on INRIX speed and travel time records extracted using the RITIS Probe Data Analytics Suite (<https://ritis.org/intro>) for the 12-month period from June 2018 through May 2019. Compilations included the available INRIX data segments spanning US 62 between the US 62 Business/Shenango Valley Freeway intersection in Hermitage and the US 19 intersection in Mercer Borough. Findings in comparison to the annual average travel times for the corridor include the following:

- Average travel times along US 62 North (eastbound) are slightly higher than travel in the opposite direction. Potential reasons may include more frequent delays behind left-turning vehicles at locations such as Robertson Road or Valley Road, or travel along steeper upgrades (with no existing climbing/passing lanes) between approximately White Road and Bestwick Road.
- During the weekday AM peak hour, there is a 45% likelihood that travel in either direction will exceed the annual average travel time for the corridor. Potential reasons may include peak hour traffic, morning school bus delays, or more frequent weather impacts in the early morning (e.g. before snow melts or before roads are completely clear).
- During the weekday PM peak period, the likelihood of exceeding the annual average travel time increases to greater than 50% for US 62 North (eastbound) but is more stable at only 25% for US 62 South (westbound). Potential reasons for the difference by direction may include the effect of steeper upgrades (with no existing climbing/passing lanes) along US 62 North (eastbound), which may further influence heavy truck delays or uphill travel delays during inclement weather.
- If severe increases in travel time are reviewed – with severe in this case assumed as more than 3 minutes or approximately 20% longer than the annual average travel time – data shows that more than 40% of the severe occurrences happen during the AM peak hour, and almost half during the winter months from late November to early March (example per [Exhibit 14](#), details per [Appendix C](#)).

Exhibit 14: Example of Annual Travel Time Variations



### Speed Studies

Spot speed studies were performed on April 11, 2019 at three locations along US 62 including observation sites between Charleston Road and Bend Road, between Skyline Drive and Bestwick Road, and in the vicinity of Maple Street ([Exhibit 15](#)). Speed measurements were gathered for both directions of travel during a typical weekday afternoon using a radar meter to sample at least 50 passing vehicles at each observation site. Summary results ([Exhibit 15](#)) indicate that with the exception of US 62 South (westbound) at Site 2, which shows intuitively higher speeds for vehicles traveling downhill at that location, the measured average and modal speeds are similar to posted speed limits, while the 85<sup>th</sup> percentile speeds are 2-4 mph higher. Individual speed measurements, however, show that 30% to 88% of vehicles are traveling faster than the posted speed limits.

## Exhibit 15: Field-Measured Speed Summary

Location	US 62 Direction	Speed Data (mph)				
		Posted	Average	Modal	85%	% > Posted
Site 1 (Charleston Rd – Bend Rd)	North (EB)	55	50	54	54	-
	South (WB)	55	54	53	58	30%
Site 2 (Skyline Dr – Bestwick Rd)	North (EB)	55	54	55	57	30%
	South (WB)	55	61	60	64	88%
Site 3 (Maple St Area)	North (EB)	35	36	35	39	56%
	South (WB)	35	35	35	39	42%



Anecdotally based on stakeholder/public feedback, it was noted that speeding is likely substantially more significant and widespread than what the speed data here implies. The measurements summarized above are based only on a limited set of observations from an isolated weekday afternoon time period of approximately 2:00 PM to 5:00 PM. Additional data limitations may include: (1) peak hour traffic demands may have tempered the observed speeds (i.e. slower lead vehicles in a platoon prevent any following vehicles from moving faster), (2) passing motorists may have slowed down if field data collection personnel were noticed, and (3) notably higher speeds may occur during lower volume travel periods including evenings, overnight, or weekends.

### Sight-Distance Estimations

Numerous locations along the study corridor were reviewed to determine where potential sight-distance constraints may exist or if sight-distance is adequate. While not intended to be an exhaustive study covering every possible location along the corridor, sample sites were chosen based on stakeholder/public input coupled with direct field observations by the project team. Sight-distance generally refers to the clear distance from the vehicle that is visible to the driver. This could include how far away the driver of one vehicle can see a second vehicle that may be approaching from the left/right if the driver is trying to pull onto the mainline from a side street, approaching from the front/back if the driver is switching lanes to pass, or the distance that a driver can stop their vehicle safely in advance of a stopped vehicle, pedestrian or any other object on the road. Both distance and speed influence if or when the driver decides to complete their next maneuver (e.g. waiting, pulling out, passing, or slowing/stopping).

For various study intersections, the project team measured and compared sight-distance looking left and/or right from side-street approaches based on typical criteria required by design standards.<sup>8</sup> Measured or observed locations included Neshannock Road, Charleston/Greenfield Road, Bend Road, Zahniser Road, Valley Road, Bestwick Road, Anthony's Farm Market Driveway, and Maple Street. The sample sites generally revealed that most locations provide adequate sight-distance for the posted speed limit. Potential concerns may arise, however, when approaching vehicles are traveling significantly above the posted speed limit; where poles, sign-posts, or other roadside obstructions may interrupt continuous sight-distance; or in areas where seasonal vegetation may grow excessively. Among the locations sampled (including photos per [Exhibit 16](#)), potential sight-distance constraints can include the following:

- US 62 South (westbound) approaching Keel Ridge Road can experience stopping sight-distance concerns due to a vertical drop-off on the approach, particularly if afternoon sun glare or queued vehicles at the traffic signal are present.
- Neshannock Road (southbound) looking left does not meet sight-distance requirements (estimated 290' with 430' required) due to a vertical drop-off and adjacent slopes just east of the intersection.
- Charleston Road (southbound) has adequate sight-distance, but requires vehicles to pull-up close to US 62 to avoid sight lines that are interrupted by roadside poles, trees, etc.
- Greenfield Road (northbound) looking left does not meet sight-distance requirements (estimated 370' with 430' required) due to a vertical drop-off and adjacent homes/trees west of the intersection.
- Zahniser Road (southbound) looking left does not meet sight-distance requirements (estimated 350' with 530' required) due to a horizontal curve, vertical drop-off, and vegetation east of the intersection.
- Valley Road (southbound) looking left and right has adequate sight-distance. However, US 62 north (eastbound) approaching Valley Road can run into stopping sight-distance concerns due to a vertical crest that exists approximately 600-700' west of the intersection, particularly when the back-of-queue for vehicles waiting to turn at Valley Road extend back toward the downhill side of that crest.
- Bestwick Road (northbound) looking right does not meet sight-distance requirements (estimated 385' with 610' required) due to a vertical crest to the east of the intersection.
- Egress from Anthony's Farm Market can also experience interrupted sight-distance (with a break at approximately 260') due to a vertical sag curve just east of the driveway. However, vehicles on US 62 South (westbound) can be seen at a greater distance approaching on the far (downhill) side of the sag curve, and the actual sight-distance also varies depending on where vehicles exit the property as the frontage (privately-owned) is generally open for approximately 150'. Placement of trash cans on the day of field observations was also noted to be a significant sight-distance obstruction when exiting the driveway.

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<sup>8</sup> **Reference:** PennDOT Publication 13M (DM-2), Chapter 2.17; also, *A Policy on Geometric Design of Highways and Streets*, Chapter 9.



Exhibit 16: Sample Sight-Distance Conditions



*US 62 South (WB) approaching Keel Ridge Rd*



*Neshannock Rd (SB) looking left*



*Charleston Road (SB) looking left*



*Greenfield Road (NB) looking left*



*US 62 North (EB) queue at Valley Road*

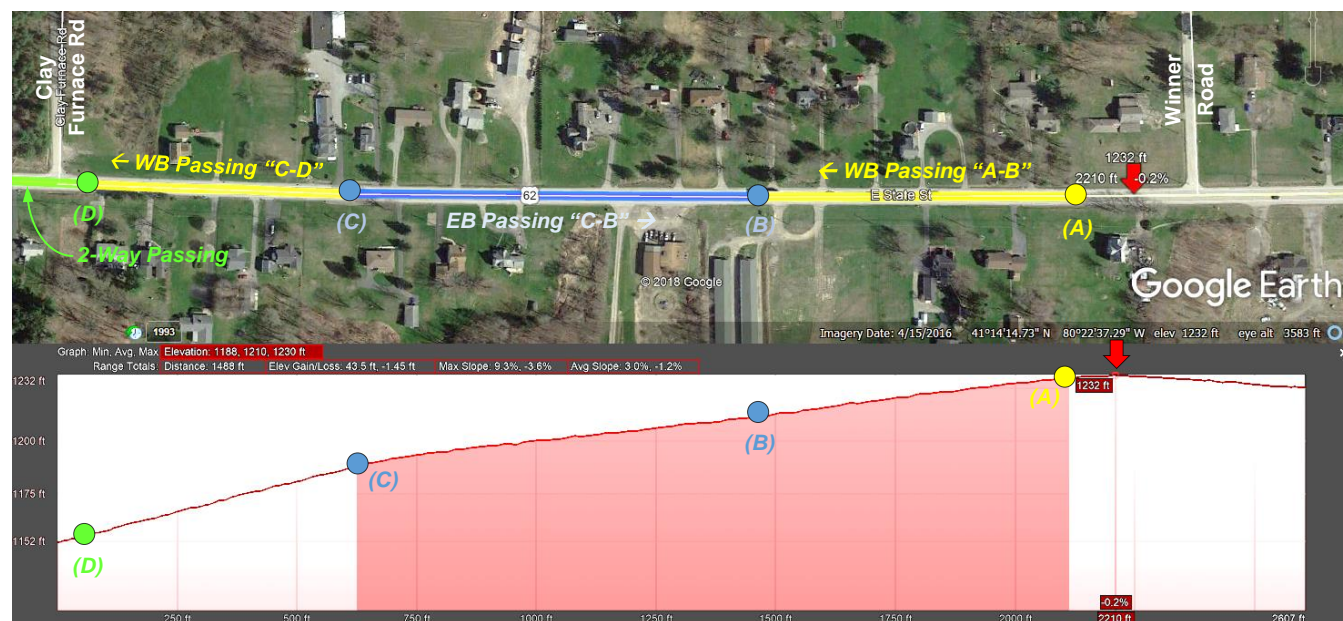


*Bestwick Road (NB) looking right*



In addition to the intersection-related details above, US 62 west of Winner Road includes a combination of eastbound and westbound passing zones tucked between a slight vertical break just east of Clay Furnace Road (Exhibit 17, point "C") and a vertical crest just west of Winner Road (Exhibit 17, red arrow). Both points constrain sight-distance along US 62 to some extent and, combined with passing activities, were anecdotally noted to create difficulties for driveway egress along this stretch. Passing zone lengths of approximately 840' (Exhibit 17, EB Passing "C-B") and 650' (Exhibit 17, WB Passing "A-B") also do not fully satisfy passing sight distance requirements of 1,625' at 45 mph design speed<sup>9</sup>, either individually or combined.

Exhibit 17: US 62 Passing Zones west of Winner Road



Reference: Google Earth Pro, 2019

<sup>9</sup> Reference: PennDOT Publication 13M (DM-2), Chapter 2.17.



## Traffic Operations Analyses

Traffic operations analyses included an assessment of key intersections and highway segments at representative locations along the US 62 corridor. Inputs included existing and projected traffic volumes, roadway and intersection geometry, posted speed limits, and other details required by methodologies in the *Highway Capacity Manual 6<sup>th</sup> Edition* (HCM6) and McTrans' *Highway Capacity Software* (HCS7).<sup>10</sup> Results generally assign a Level-of-Service (LOS) rating from LOS A, representing the best operating conditions, to LOS F, representing the worst operating conditions. The basis for these letter-grades varies as follows:

- **Two-way stop-controlled intersections:** LOS results are assigned based on expected delays (seconds per vehicle) at or through the intersection. Delays are experienced by non-free-flow movements at the intersection, including the stop-controlled sidestreet traffic, as well as mainline left-turns that must yield to opposing through-traffic.
- **Two-lane highway segments:** LOS results are assigned based on Followers Density (followers per mile per lane). This metric generally reflects the degree to which travel in each direction along the corridor is impeded relative to conditions such as passing opportunities, average travel speeds, or the size of vehicle platoons that occur during congested versus free-flow travel.

Operations were reviewed and summarized for Base Year 2019 and Horizon Year 2039 traffic conditions at key intersections ([Exhibit 18](#)) and along two-lane highway segments ([Exhibit 19](#)). Technical data are included in an appendix to this report ([Appendix D](#)) with summary findings as highlighted below.

- Intersection assessments at Robertson Road, Neshannock Road, Charleston/Greenfield Roads, and Valley Road indicate no significant delays under the existing or future projected conditions. Virtually all intersection movements or approaches operate at acceptable LOS C or better. Only one minor movement – the low-volume northbound approach at Robertson Road – operates below LOS C, yet it still falls within an acceptable range at LOS D (i.e., intersection failures and excessive delays are not generally noted until the LOS E/F range).
- Two-lane highway segment assessments east of Robertson Road, east of Charleston/Greenfield Roads, and east of Valley Road indicate no significant operational issues under the existing or future projected conditions. All segments operate at acceptable LOS C or better in both directions. Segment-specific estimates of average travel speeds show only nominal reductions below the posted speed limit, while estimates of Followers Density show the potential for small traveling platoons of typically three to eight vehicles during the peak periods.
- Collectively, these results imply that traffic delays, capacity needs, or similar congestion-related issues are not generally anticipated to yield substantial problems during normal travel conditions along the US 62 corridor as a whole. However, these findings do not preclude the possibility of other site-specific or non-recurring congestion that may periodically impact the corridor. Examples based on anecdotal input from the study may include peak period signal delays at either end of the study limits, short-duration school congestion within Mercer Borough, slow-moving vehicles traveling uphill at various spots along the corridor, or the periodic impact of non-recurring congestion due to crashes, weather, I-80 detour traffic, or other unplanned events.

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<sup>10</sup> **Reference:** McTrans HCS Version 7.8 (2019), including methodology updates in the revised 2019 Two-Lane Highways Module.

Exhibit 18: US 62 Intersection Level-of-Service Summary

Intersection of US 62 at:	Peak	Intersection LOS (Delay in seconds per vehicle)			
		US 62 North (EB) Mainline Left	US 62 South (WB) Mainline Left	Side-Street Approach (SB)	Side-Street Approach (NB)
BASE YEAR 2019					
Robertson Rd	AM	B (10.0)	A (9.6)	B (14.6)	C (17.3)
	PM	B (10.9)	B (10.3)	C (17.4)	D (34.9)
Neshannock Rd	AM	A (9.9)	A (9.7)	B (14.9)	B (13.8)
	PM	B (10.3)	B (10.3)	C (19.6)	C (19.3)
Charleston/Greenfield Rd	AM	A (9.6)	A (9.6)	B (12.1)	B (13.3)
	PM	B (10.1)	A (9.8)	B (12.6)	C (16.6)
Valley Rd	AM	A (9.7)	---	B (11.2)	---
	PM	B (10.2)	---	B (11.7)	---
HORIZON YEAR 2039					
Robertson Rd	AM	B (10.2)	A (9.8)	C (16.5)	C (18.1)
	PM	B (11.2)	B (10.5)	C (21.5)	D (30.4)
Neshannock Rd	AM	A (10.0)	A (9.8)	C (16.0)	B (14.6)
	PM	B (10.5)	B (10.5)	C (21.7)	C (21.3)
Charleston/Greenfield Rd	AM	A (9.7)	A (9.7)	B (12.7)	B (14.3)
	PM	B (10.2)	A (9.9)	B (14.0)	C (17.9)
Valley Rd	AM	A (9.8)	---	B (11.5)	---
	PM	B (10.4)	---	B (12.0)	---

Exhibit 19: US 62 Two-Lane Highway Segment Level-of-Service Summary

Segment of US 62 located:	Peak	Segment Operations					
		US 62 North (EB)			US 62 South (WB)		
		LOS	Density <sup>(a)</sup>	Avg Speed	LOS	Density <sup>(a)</sup>	Avg Speed
BASE YEAR 2019							
East of Robertson Rd	AM	B	2.7	39.5	B	5.0	38.5
	PM	C	6.2	39.1	C	7.3	38.3
East of Charleston/Greenfield Rd	AM	B	2.4	52.5	B	2.5	52.5
	PM	B	4.0	52.2	C	5.0	52.0
East of Valley Rd	AM	B	2.6	53.8	B	2.1	53.8
	PM	B	3.1	55.0	C	4.8	54.6
HORIZON YEAR 2039							
East of Robertson Rd	AM	B	3.0	39.4	C	5.5	38.5
	PM	C	6.9	39.0	C	8.2	38.2
East of Charleston/Greenfield Rd	AM	B	2.7	52.4	B	2.8	52.4
	PM	C	4.4	52.1	C	5.5	51.9
East of Valley Rd	AM	B	2.9	53.6	B	2.3	53.7
	PM	B	3.5	54.9	C	5.3	54.5

**Table Note (a):** Indicates *Followers Density* as "followers per mile per lane" based on HCS 2019 Two-Lane Highway Module methodology.

## Safety Analyses

Safety analyses focused on a review of crash characteristics, crash cluster identification, and quantitative assessments using *Highway Safety Manual* (HSM) methodologies. Analyses encompassed reported crash data along US 62 within the study limits from PennDOT's *Crash Data Access and Retrieval Tool* (CDART) for a five-year period from January 1, 2013 through December 31, 2017. Data were also compared, where applicable, to statewide trends based on PennDOT's *2017 Pennsylvania Crash Facts and Statistics* report. HSM safety assessment details are compiled under separate cover ([Appendix E](#)),<sup>11</sup> while summary findings are as follows:

- 200 reportable crashes occurred along the corridor from 2013-2017 with 44% at intersections and 56% along roadway segments.
- Annual crash totals during the study period ranged from 32 to 49 crashes per year ([Exhibit 20](#)), or the equivalent of approximately 2-4 crashes per month ([Exhibit 21](#)).
- Crashes by time-of-day ([Exhibit 22](#)) confirm that most crashes coincide with peak travel periods, including higher frequencies from 7:00-9:00 AM, at noon, and anytime from 2:00-7:00 PM.
- Crashes by type ([Exhibit 23](#)) include approximately equal proportions of Hit Fixed Object (27%), Rear-End (26.5%), and Angle (25.5%) crashes along the corridor. Results are generally comparable to statewide trends and show no apparent anomalies.
- Most crashes along US 62 involve property damage only (58.6%), while the proportion of injury-related crashes (39.8%) is slightly lower than the comparable statewide average ([Exhibit 24](#)). There were three fatalities along the corridor during the study period; all three were isolated occurrences at different locations with no notable similarities or trends.
- The majority of all crashes occurred during dry, clear weather (77%) and/or on dry pavement with no adverse road surface conditions (69%). Winter travel issues in Mercer County, however, are apparent in crash data related to either weather conditions during a crash (e.g. snowing, sleeting, or freezing rain during 10% of all crashes) and/or road surface conditions during a crash (e.g. snow-, ice-, or slush-covered roads during 13.5% of all crashes).
- Frequently-reported driver actions reveal that more than 71% of all crash activity may be associated with speed, distracted driving, or driver errors ([Exhibit 25](#)). Such actions include direct speeding and traveling too fast for conditions; distracted driving such as tailgating or cell phone usage; moving improperly (e.g. improper or careless turns, traveling on the wrong side of the roadway); and moving at the wrong time (e.g. turning without clearance, running red lights).

Collectively, the crash data assessments helped to inform potential locations for follow-up reviews and the types of improvements that may be beneficial to address site-specific concerns.

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<sup>11</sup> Note that traffic engineering and safety study details in Appendix E are confidential pursuant to 75Pa. C.S. §3754 and 24 U.S.C. §409 and may not be disclosed or used in litigation without written permission from PennDOT.

Exhibit 20: US 62 Crash Summary by Year

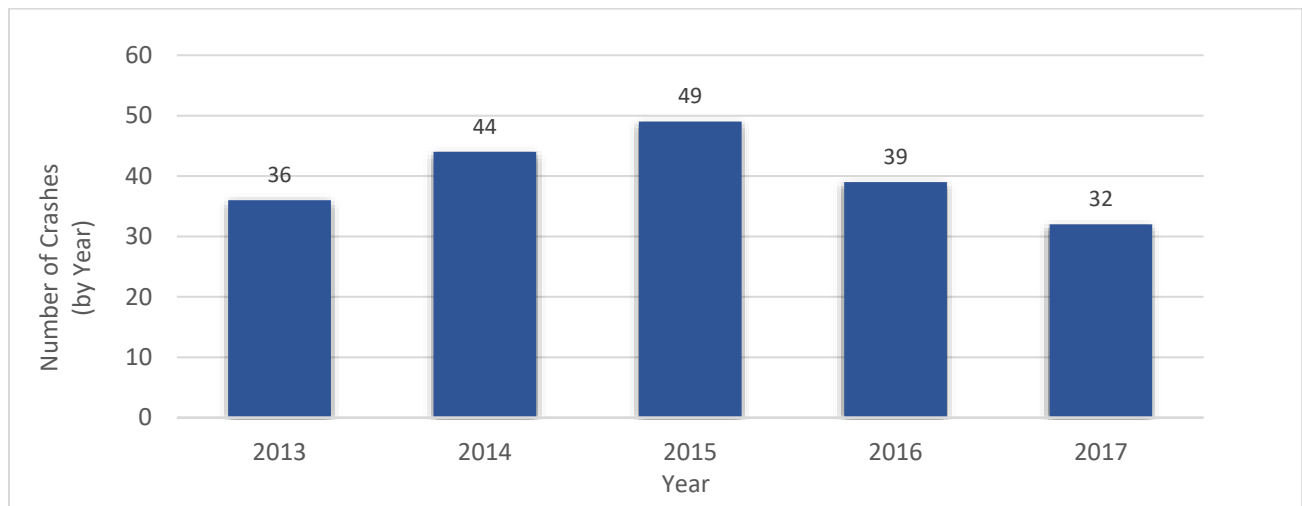


Exhibit 21: US 62 Crash Summary by Month

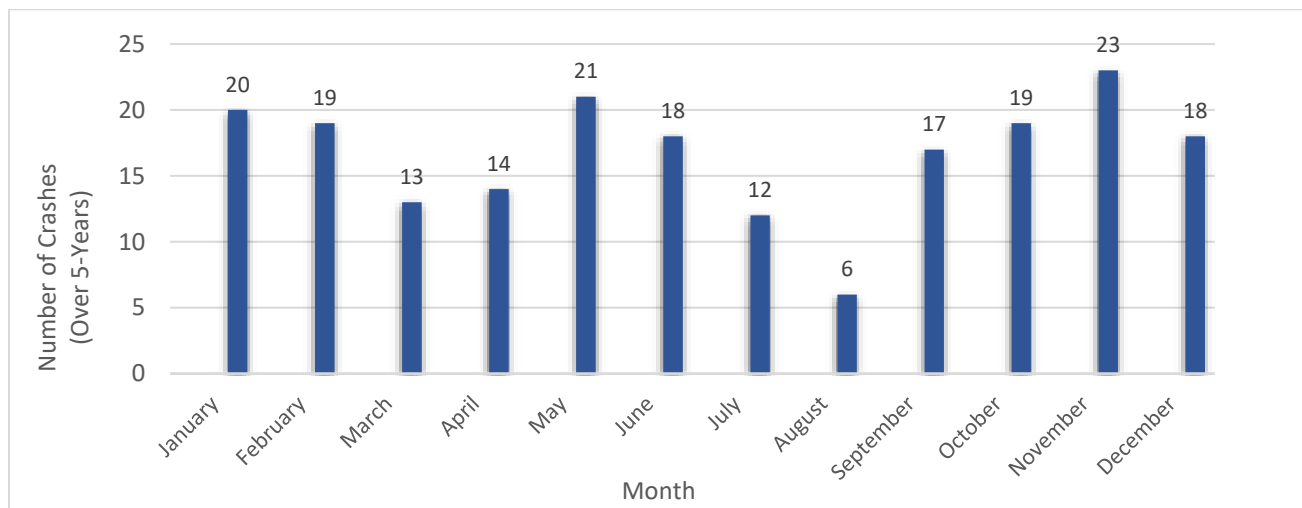


Exhibit 22: US 62 Crash Summary by Time-of-Day

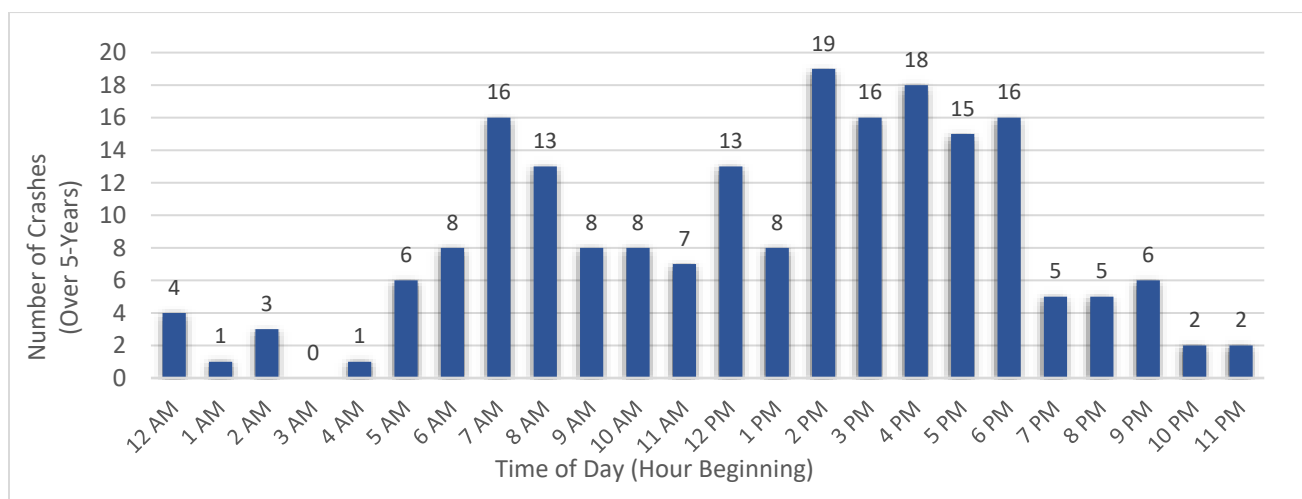


Exhibit 23: US 62 Crash Summary by Type

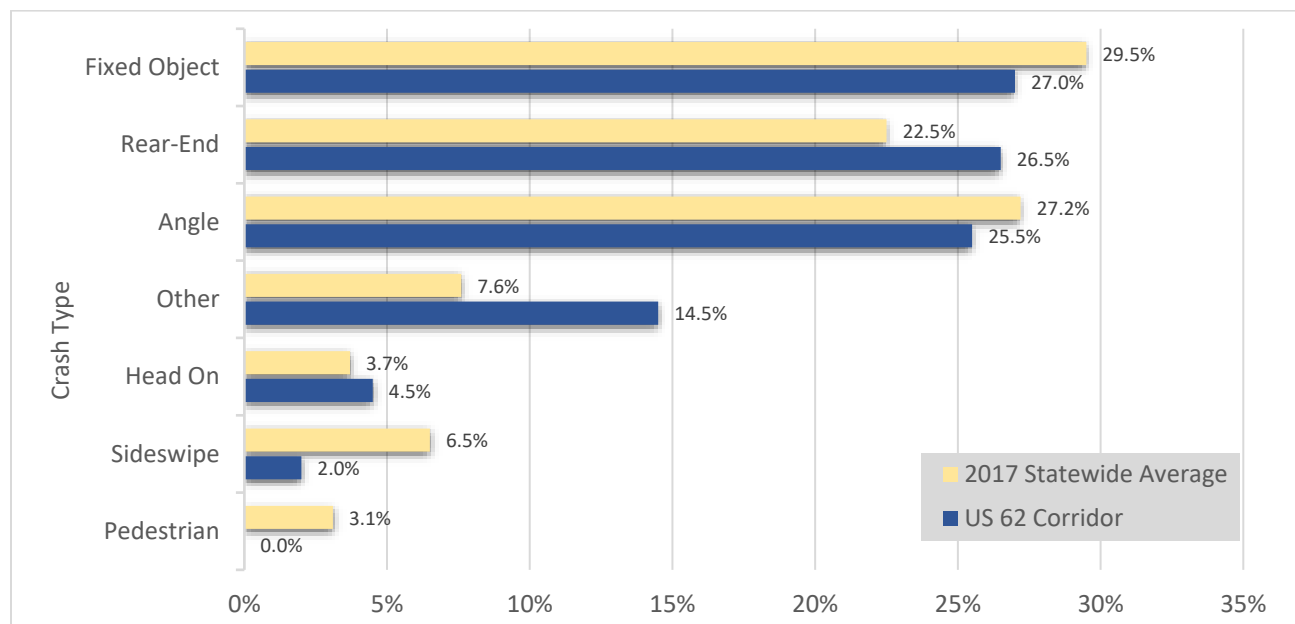


Exhibit 24: US 62 Crash Summary by Severity

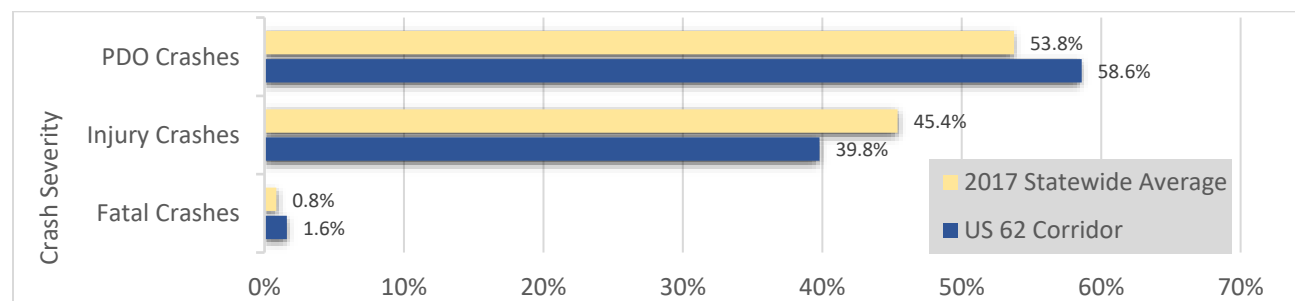
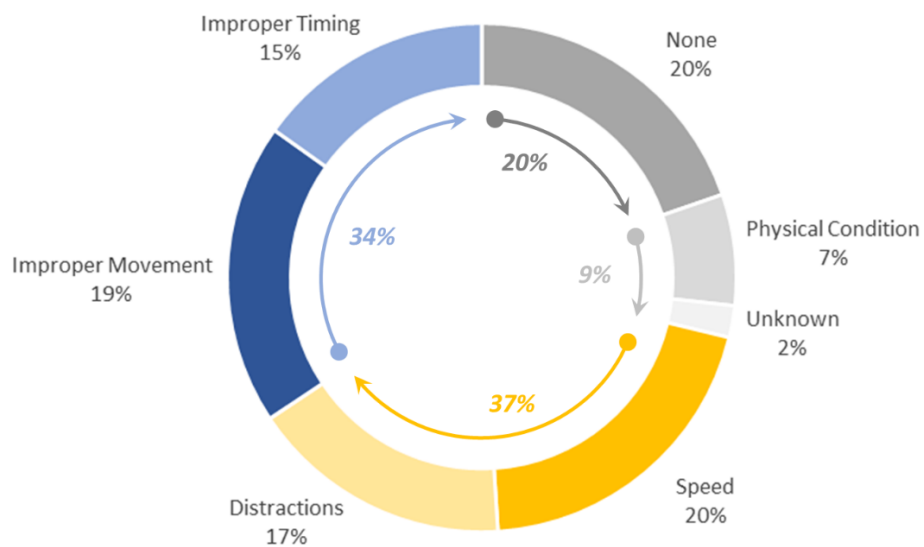


Exhibit 25: US 62 Crash Summary by Contributing Driver Actions



## Outreach and Coordination

Overall outreach and coordination for this US 62 study was accomplished in two major rounds that focused on eliciting input and blending perspectives from agency coordination, stakeholder meetings, and open-house style public involvement meetings. Specific coordination efforts, survey results, and public comments from each round of outreach are detailed as an appendix to this study ([Appendix F](#)) and may be summarized as follows:

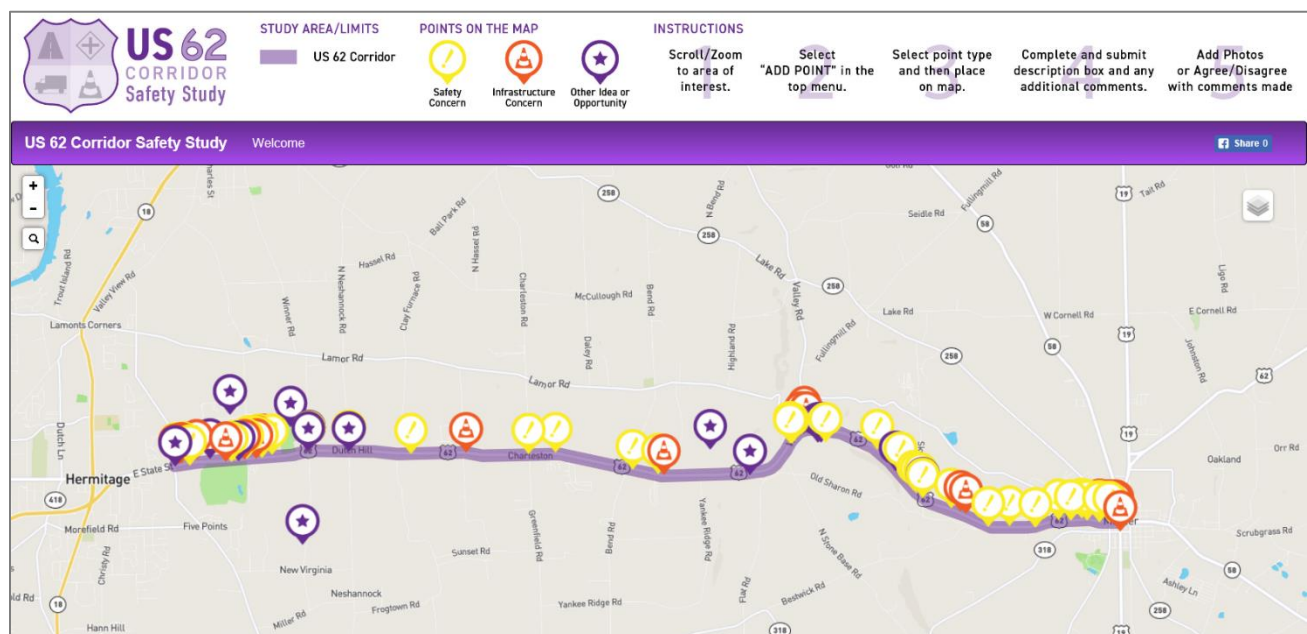
### Agency Coordination

Throughout the entirety of the project, collaborative leadership, guidance, and agency-level feedback involved multiple planning and engineering staff from PennDOT District 1-0, MCRPC, and the consultant study team. These efforts included general review and discussion of overall project approach elements, pertinent assumptions, and key findings related to project data collection, analyses, definition of needs, and the development and refinement of improvement alternatives.

### Public Outreach and Coordination Round 1

The first round of public coordination was completed in May 2019 and focused on gathering feedback to support and better understand the identification of existing conditions and potential safety needs. These efforts included four stakeholder group meetings (May 7, 2019), a public official's meeting (May 15, 2019), an open-house style public meeting (May 15, 2019), and a corresponding online WikiMapping survey exercise. A total of 41 individuals participated in the meetings and/or survey. Major outcomes identified at least 83 site-specific comments throughout the study corridor ([Exhibit 26](#); details per [Appendix F1](#)) that related to safety concerns, infrastructure concerns, or other ideas and opportunities.

Exhibit 26: Public Input (Round 1) via Online WikiMapping Survey





## Public Outreach and Coordination Round 2

The second round of public coordination was completed in September 2019 and focused on sharing findings from the study and reviewing alternatives that would help in the development of a long-range strategy for improving the corridor. These efforts included a public official's meeting (September 25, 2019), an open-house style public meeting (September 25, 2019), and a corresponding hard-copy/mail-back survey exercise. A total of 79 individuals participated in the meetings, with 43 surveys returned. Major outcomes explored elements that participants liked, did not like, or thought were missing from the plan and included subjective ratings ([Exhibit 27](#), with details per [Appendix F3](#)) of how well the individual project alternatives address transportation-related safety needs for all travelers (residents, businesses, commuters, trucks, etc.) using US 62.

Exhibit 27: Public Input (Round 2) via Perceived Alternative Benefit Survey

Alternative / Description	Least Benefit	<-----	Some Benefit	----->	Most Benefit
<b>Area (A) – Keel Ridge Road</b>					
<b>A1:</b> Keel Ridge Rd Green Light-Go Project	1	1	4	8	13
<b>A2:</b> US 62 South (WB) Red Signal Ahead Sign	0	0	2	10	14
<b>A3:</b> US 62 South (WB) Shoulder Maintenance Upgrades	0	3	4	7	12
<b>A4:</b> US 62 South (WB) Shoulder Widening w/ Barrier	1	4	1	4	18
<b>Area (B) – Robertson Road to Darby Road</b>					
<b>B1:</b> Intersection Treatments (US 62 / Robertson Rd)	0	2	3	11	10
<b>B2:</b> Intersection Treatments (US 62 / Darby Rd)	2	1	5	11	7
<b>B3:</b> US 62 / Robertson Rd Turn Lanes	0	1	2	7	18
<b>B4:</b> Alternative B3 plus Multi-Use Trail and Darby Rd Roundabout	10	4	6	2	8
<b>Area (C) – Neshannock Rd to Bend Road</b>					
<b>C1:</b> Intersection Treatments (US 62 / Neshannock Rd)	0	2	6	6	14
<b>C2:</b> Intersection Treatments (US 62 / Horvath Farms & Reno Rd)	0	2	2	9	10
<b>C3:</b> Intersection Treatments (US 62 / Charleston & Greenfield Rd)	1	2	5	9	9
<b>C4:</b> Intersection Treatments (US 62 / Forrest Brooke Trailer Park)	1	3	3	10	8
<b>C5:</b> Intersection Treatments (US 62 / Bend Rd)	1	2	5	10	5
<b>C6:</b> US 62 / Neshannock Rd Turn Lanes	1	1	2	4	21
<b>Area (D) – Zahniser Road to Valley Road</b>					
<b>D1:</b> US 62 South (WB) Climbing Lane Adjustments to Zahniser Rd	1	2	1	3	17
<b>D2:</b> US 62 / Valley Rd Turn Lanes	1	0	1	10	14
<b>D3:</b> US 62 / Valley Rd Turns Lanes with Realignment	1	0	2	6	17
<b>Area (E) – Skyline Drive to West of Mercer Borough</b>					
<b>E1:</b> Intersection Treatments (US 62 / Bestwick Rd)	0	2	6	5	5
<b>E2:</b> US 62 North (EB) Climbing Lane to West of Bestwick Rd	0	0	2	6	15
<b>E3:</b> US 62 / Bestwick Rd Turn Lanes with Realignment	0	0	3	5	10
<b>E4:</b> US 62 / Center Turn Lane between Autumn & Landis Dr	1	0	1	8	11
<b>Area (F) – Mercer Borough</b>					
<b>F1:</b> US 62 / Mercer Borough Circulation Study	0	1	1	9	7
<b>F2:</b> US 62 / Maple St Traffic Signal with Turn Lanes	3	2	1	3	13

### Note/Legend:

Data and vote-counts listed above are based on receipt of 43 total comment forms

Grey Text ≈ Bottom 25% of range (based on < 5 total votes)

**White Italic Text** ≈ Top 25% of range (based on > 15 total votes)

Gradient Shading = Least (Light Blue) to Most (Dark Blue) number of votes

## PennDOT Connects Perspectives

In addition to the project-specific outreach elements noted above, the assessment of project needs and the development of potential improvements were generally conducted with consideration to key elements of the *PennDOT Connects* policy. This policy reflects an approach to project planning and development that expands the department's requirements for engaging local and planning partners, collaborating with stakeholders, and considering projects in a holistic way for opportunities to improve safety, mobility, access, and environmental outcomes for all modes and local contexts. While the overall policy goal emphasizes a collaborative approach to transportation planning, specific areas to consider throughout the project development process include:



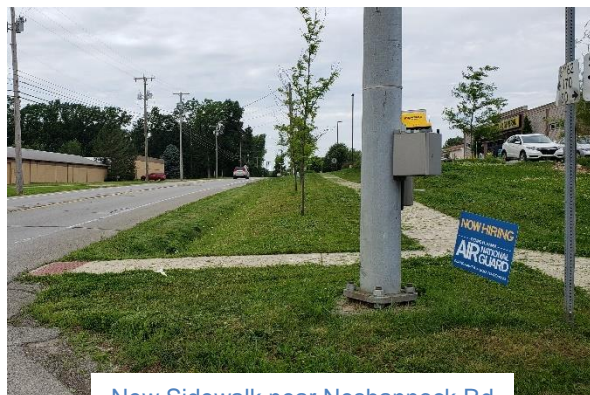
- Pedestrians and Bicyclists
- Transit
- Freight
- Operations and ITS
- Utilities
- Community Health
- Stormwater Management and Green Infrastructure
- Potential Controversy

Relative to project-specific input from the initial outreach efforts for this US 62 study, potential considerations related to *PennDOT Connects* include the following examples:

### *Pedestrians and Bicyclists*

Given the rural nature of much of the US 62 study corridor, pedestrian and bicycle activity was not identified as a dominant issue compared to, for example, what might be emphasized in a more urbanized area. However, accommodating logical connections may be important. For example:

- Newer facilities throughout the corridor (e.g. at Keel Ridge Road or near Dollar General at Neshannock Road) have included new sidewalk segments and accessible facilities compliant with the Americans with Disabilities Act (ADA).
- The 2017 *City of Hermitage Trails and Sidewalks Priorities Plan* references future project candidates that may influence pedestrian connections in the area (previous [Exhibit 7](#)).
- Outreach comments confirmed interest in walking/biking connections between residential areas on/near Robertson Road and existing trails and amenities within Whispering Pines Park, located along US 62 less than ½-mile to the east.
- Segments within Mercer Borough include a fairly robust existing sidewalk network, but also opportunities for potential sidewalk improvements along US 62 in the immediate vicinity of the Maple Street and Shenango Street intersections, including candidate sections for sidewalk repairs and new/missing sidewalk construction.<sup>12</sup>



New Sidewalk near Neshannock Rd

<sup>12</sup> Reference: MCRPC, *US Route 19 Corridor Study*, June 2011 (pages 134-135).

### Transit

Based on field views and transit-related stakeholder discussions, no significant or site-specific transit issues were identified. Bus activity does, however, use the US 62 corridor based on the following:



MCCT Shuttle near Charleston Rd

- The Shenango Valley Shuttle Service (SVSS) runs a Courthouse Route along US 62 via fixed-route service between the Shenango Valley and the Mercer County Courthouse with optional service to Grove City upon request. The route runs one bus per day with service to Mercer in the morning, and a return trip from Mercer in the afternoon.
- Mercer County Community Transit (MCCT) operates a door-to-door advanced registration program that provides a shuttle service option to all persons of Mercer County.
- School buses for Hermitage School District and Mercer Area School District use the corridor, including periodic bus stops directly along US 62. Stop locations may vary from school year to school year as student registrations and transportation needs vary. Comments from school-related stakeholders noted that winter travel and communications issues (e.g. lack of cell phone service in some locations along the corridor) can periodically affect bus travel.

### Freight

Freight travel and access along the corridor was noted as an issue by numerous stakeholders, with specific comments as follows:

- Most truck concerns related to US 62's role as the Blue Detour Route for emergency closures of I-80 (previous [Exhibit 8](#)). Shoulder widths, curves, and grades along the corridor can present challenges for truck travel, especially if paired with Mercer County's winter weather patterns.
- Oversize loads were also noted and observed and may introduce additional challenges. For example, stakeholders noted that wide-load travel along US 62 North (eastbound) east of Valley Road periodically interfered with the opposing travel direction where it may be difficult for westbound motorists to see an oncoming wide-load truck due to narrow shoulders and horizontal curves.
- Development potential (e.g. zoning, utilities) could also influence additional truck activities for businesses, deliveries, or equipment along the corridor. Initial study interests included, for example, a review of truck activities for a shale oil & gas site just east of Bend Road. Current findings, however, indicate that truck activity levels at this site have dropped significantly as the initial well-drilling phase is complete, the well has been connected directly into an adjacent pipeline that has been constructed, and/or the well site may be capped.



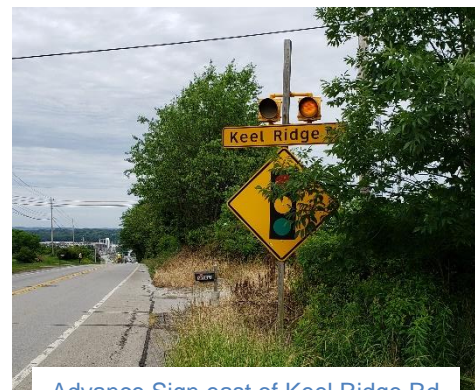
Oversize Load near Robertson Rd



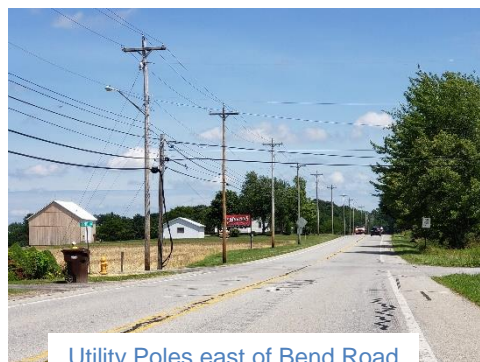
### Operations and ITS

While operational analyses for the corridor (previous [Exhibit 18](#) and [Exhibit 19](#)) imply that traffic delays, capacity needs, or congestion issues may not be substantial for this portion of US 62, it was also noted that non-recurring issues due to crashes, weather, or I-80 detours are relevant. As such, technology enhancements or planning/policy-level factors may be able to enhance travel conditions or traveler information for the corridor. Such considerations could encompass a variety of topics affecting overall corridor operations, such as:

- ITS-type traffic control enhancements such as automated “Red Signal Ahead” signage approaching Keel Ridge Road, dynamic speed feedback signs (e.g. automated speed displays with flashing lights and/or messaging such as “Slow Down”) at key locations along the corridor, or enhanced devices with perimeter or sequential sign lighting (e.g. chevrons) at key locations.
- Enhanced incident management coordination, messaging, or winter road maintenance during I-80 emergency detours.
- Enhanced incident clearance protocols, refuge areas, or communication enhancements (e.g. improvement to cell service in the vicinity of Valley Road).
- Review and refinement of school bus routing to avoid congestion and crossing concerns at the US 62 intersection at Shenango Street.



Advance Sign east of Keel Ridge Rd



Utility Poles east of Bend Road

### Utilities

While specific utility issues were not noted during the study, much of the corridor includes utility poles/lines along one or both sides of the roadway. As such, any physical improvements that are proposed will eventually need to consider the locations, potential impacts to, and/or potential relocation costs associated with site-specific utilities.

### Community Health

Coordination efforts will have to continue to monitor issues or opportunities that may affect travel or access for key community connections that use or cross the US 62 corridor. Noted examples may include:

- Recognizing the corridor's broader role as a critical connection between the Shenango Valley communities and the county seat in Mercer.
- Ensuring coordination and consistency with the *City of Hermitage Trails and Sidewalks Priorities Plan*, including access to community assets such as Whispering Pines Park (east of Robertson Road) or the Hermitage Athletic Complex (via Darby Road).
- Ensuring efficient access to care-oriented facilities along the corridor such as the Lakes at Jefferson (<https://www.thenugentgroup.com/locations/the-lakes-at-jefferson>), Rainbow Recovery Center (<http://rainbowrecoverycenter.com/>), or Mercer County Behavioral Health Center (<http://www.mercercountybhc.org/>).



Athletic Complex  
Access via Darby Rd

### Stormwater Management and Green Infrastructure

While specific stormwater management issues were not noted during the study, existing facilities are apparent throughout much of the corridor. Future drainage-related efforts and any physical improvements that are proposed will eventually need to consider the locations, potential impacts to, and/or potential improvement costs associated with site-specific stormwater management needs. Example considerations could include the following:



Drainage near Robertson Rd & Darby Rd

- Minor drainage-related maintenance needs (e.g. runoff, eroded shoulders) were noted during field views and physical conditions inventories for the project, though these efforts were not intended to be all-encompassing (previous [Exhibit 6](#)).
- Modifications to existing facilities, changes in impervious surface area, and related stormwater impacts will likely vary depending on the scope, scale, and location of future improvements such as shoulder widening or turn lane installations.
- Overall planning and project development throughout much of the corridor are likely to be influenced by a variety of environment constraints and requirements. Examples may include wetland conservation, stormwater restoration, or stormwater natural infrastructure preservation requirements related to watersheds including Shenango River Lake – Shenango River, Little Neshannock Creek, or Pine Run – Neshannock Creek.<sup>13</sup>



US 62 Safety Study Public Meeting #2

### Potential Controversy

As future improvement-related decision-making evolves, additional public input may be required to review site-specific design and construction topics, including specific public concerns or feedback relative to issues such as the following:

- Work zone timing, methods, or duration that may affect public travel, access, or emergency services.
- Specific property impacts related to any proposed improvements, ranging from minor slope cutbacks to improve sight-distance, to potential right-of-way (ROW) impacts if widening for shoulders or turn lanes is proposed.
- Specific environmental impacts and additional permitting, costs, or constraints if widening is proposed, particularly in areas of the corridor that are more remote, narrow, or sloped (e.g. along the curved sections and hills between Valley Road and Bestwick Road).

<sup>13</sup> Reference: PennDOT One Map, including Environmental Screening Map layers, <https://gis.penndot.gov/OneMap>.



## Alternatives Development and Refinement

In response to the collective set of findings from field views, baseline technical analyses, and the initial outreach/coordination efforts, the project team conducted interdisciplinary brainstorming sessions to compile a list of preliminary alternatives that could be considered to address the transportation-related safety needs.

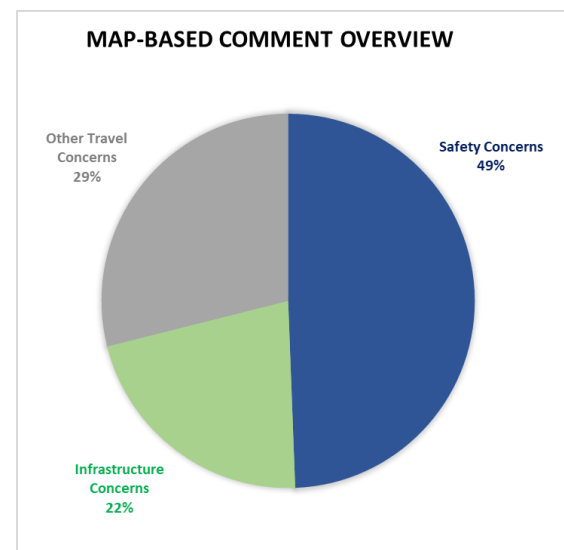
### Needs Compilation and Analysis

#### General Needs

General needs included consideration of corridor-wide input from the initial survey efforts (previous [Exhibit 26](#), with details per [Appendix F1](#)), which from a categorical perspective included a mix of safety concerns (49%), infrastructure concerns (22%), and other travel concerns (29%) ([Exhibit 28](#)). These topics were considered during additional site visits by the project team to validate any site-specific concerns and determine where improvement opportunities were most needed.

Exhibit 28: Needs Categories based on Initial Public/Stakeholder Input

Category / Sub-Category	Count	%
<b>Safety Concerns</b>	<b>41</b>	<b>49%</b>
Sight Distance	15	18%
Speed	6	7%
Turns / Access	8	10%
Weather / Road Surface	7	8%
Incident Management	5	6%
<b>Infrastructure Concerns</b>	<b>18</b>	<b>22%</b>
Roadway / Shoulders	6	7%
Guiderail / Drainage / Maintenance	4	5%
Traffic Signals	3	4%
Traffic Signing	5	6%
<b>Other Travel Concerns</b>	<b>24</b>	<b>29%</b>
Multimodal (Ped / Bike / School Bus)	10	12%
Trucks / Freight	3	4%
Congestion	4	5%
Planning and Development	7	8%
<b>TOTAL</b>	<b>83</b>	<b>100%</b>



#### Sight-Distance Improvements

Based on prior measurements, improvements to address potential sight-distance constraints focused on the following locations:

- US 62 South (westbound) approaching Keel Ridge Road
- Neshannock Road (southbound) looking left/right
- Greenfield Road (northbound) looking left
- US 62 passing zones located just west of Winner Road
- Zahniser Road (southbound) looking left
- US 62 North (eastbound) approaching Valley Road
- Bestwick Road (northbound) looking right

### *Safety Improvement Areas*

Based on overall safety assessments and suggestions from the HSM methodologies and PennDOT's HSM Analysis Tool, the following locations were reviewed for additional safety improvement opportunities:

- US 62 between approximately Charleston Road and Bend Road
- US 62 between approximately Skyline Drive and Bestwick Road
- US 62 at Keel Ridge Road
- US 62 at Neshannock Road
- US 62 at Bend Road
- US 62 at Shenango Street.

### *Turn Lane Warrant Analyses*

Limited turn lane warrant analyses<sup>14</sup> were conducted to determine if the installation of new left and/or right-turn lanes could be an appropriate solution at any of four key locations throughout the corridor including US 62 at Roberson Road, Neshannock Road, Charleston/Greenfield Roads, and Valley Road. Based on these analyses ([Appendix C](#)) and related discussions, the following may be concluded:

- Turn lane warrants were not satisfied at US 62 intersections with Neshannock Road or Charleston/Greenfield Roads. This finding, however, may not preclude considering turn lane installations based on other factors such as sight distance, intersection visibility, or overall safety.
- At Robertson Road, warrants were satisfied for a left-turn lane on the US 62 North (eastbound) approach, and for a right-turn lane on the US 62 South (westbound) approach.
- At Valley Road, left-turn lane warrants were satisfied for the US 62 North (eastbound) approach.
- At Maple Street, left-turn lane warrants were satisfied for the US 62 North (eastbound) approach.

### *Traffic Signal Warrant Analyses*

Limited traffic signal warrant analyses<sup>15</sup> were conducted to determine if traffic signalization could be an appropriate solution at any of six key locations throughout the corridor including US 62 at Robertson Road, Neshannock Road, Charleston/Greenfield Roads, Valley Road, Maple Street, and Shenango Street. Based on these analyses ([Appendix C](#)) and related discussions, the following may be concluded:

- No signal warrant criteria were satisfied at the intersections of US 62 and Robertson Road, Neshannock Road, Charleston/Greenfield Roads, or Valley Road.
- Warrant PA-1 (ADT warrant) was marginally satisfied at the intersection of US 62 at Maple Street.
- Warrant PA-1 (ADT warrant) was also marginally satisfied at the intersection of US 62 and Shenango Street. However, the proximity of this location to the existing traffic signal at US 19 (approximately 500' away) is not ideal for a new signal placement, which could actually increase operational or safety concerns compared to existing conditions. As such, a Shenango Street signal is not preferred.

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<sup>14</sup> Turn lane warrant analyses were limited to an evaluation of the available peak hour traffic volumes using PennDOT's *Turn Lane Warrant and Length Analysis Workbook* based on PennDOT Publication 46.

<sup>15</sup> Traffic signal warrant analyses were limited (based on available volume data in this study) to a review of Warrant 3 (Peak Hour) and Warrant PA-1 (ADT Volume) using PennDOT's *Traffic Signal Warrant Analysis Workbook* based on PennDOT Publication 46, PennDOT Publication 212, and MUTCD methodologies. Future comprehensive studies will be required if signalization options are pursued.

## Preliminary Alternatives

With the above details in mind, preliminary improvement concepts were developed to address the general and site-specific needs along the US 62 study corridor. Considering the variability in the types and locations of the identified needs plus the significant length of the study corridor, the collective set of preliminary alternatives did not evolve on a corridor-wide basis. Rather, the potential solutions focused more on intersection or roadway segment improvement options that were specific to each location or area. The preliminary concepts were reviewed and discussed in July 2019 with PennDOT District 1-0 and MCRPC ([Appendix F2](#)). Based on feedback from these discussions, the Preliminary Alternatives were refined to create an overall set of Detailed Alternatives and related concept designs that would be the basis of information presented at the second public meeting.

## Detailed Alternatives

Detailed alternatives were grouped and indexed by location ([Exhibit 29](#)) to address corridor needs within six areas along the study corridor as follows:

- Area (A) – Keel Ridge Road Area
- Area (B) – Robertson Road to Darby Road
- Area (C) – Neshannock Road to Bend Road
- Area (D) – Zahniser Road to Valley Road
- Area (E) – Skyline Drive to West of Mercer Borough
- Area (F) – Mercer Borough.

Within each area, the preliminary improvement concepts were refined, and detailed concept designs were developed<sup>16</sup> and compiled for subsequent review and presentation at the project's second public meeting in September 2019 ([Appendix F3](#)). Detailed Alternatives were organized into the three general categories below.

### *Potential Candidates for Low-Cost Intersection Treatment*

Eight intersections across Areas (B), (C), and (E) were identified for potential low-cost intersection treatments ([Exhibit 29](#)). Treatments generally include combinations of signing, pavement markings, rumble strips, reflective panels/sheeting, sign or intersection lighting, or similar options ([Exhibit 30](#)). Implementation and application details for a variety of options are stockpiled as part of the ITE/FHWA web-based *Unsignalized Intersection Improvement Guide* ([see call-out box](#)).

The intent of these types of treatments is to improve safety and potentially reduce travel speeds within the corridor by enhancing the visibility and conspicuity of intersection locations, as well as the effectiveness of and compliance with traffic control devices at or approaching the intersections. This strategy may be exceptionally relevant in a rural, open corridor such as US 62 where travel speeds and distracted driving are concerns, or where rural low-volume side-roads may be easily missed or ignored by passing motorists. The strategic placement and spacing of treatment locations may help to break-up the openness of the corridor and enhance driver attentiveness. For any given location, a variety of options may be suitable based on localized needs and future PennDOT/County/Municipal interests.

*The Unsignalized Intersection Improvement Guide (UIIG) has been developed to assist practitioners in selecting design, operational, maintenance, enforcement, and other types of treatments to improve safety, mobility, and accessibility at unsignalized intersections. Originally produced under Project No. 03-104 of the National Cooperative Highway Research Program, the web-based UIIG is now hosted by the Institute of Transportation Engineers (ITE) under the sponsorship of the Federal Highway Administration (FHWA) Office of Safety.*

<http://toolkits.ite.org/uiig/default.asp>

<sup>16</sup> Concept designs aimed to comply with PennDOT design criteria per Publication 13M (DM-2), Chapter 1, assuming that US 62 falls within a *Community Arterial* roadway typology based on roadway classifications and posted speed limits as defined in previous [Exhibit 2](#).

### *Alternative with Infrastructure Improvement*

Physical infrastructure improvement options were explored at ten locations throughout the corridor ([Exhibit 29](#) with concept design details per [Appendix F3](#)). Such improvements include various combinations of shoulder widening, new turn lane installations, intersection or side-road realignments, climbing lane additions or modifications, or substantial changes in traffic control (i.e. installation of traffic signal or roundabout operations). In virtually all cases, the proposed improvements would accomplish multiple objectives that enhance safety and operations throughout the corridor. These objectives include addressing the general and specific needs identified previously, such as enhancing safety via dedicated turn lanes, enhancing sight-distance as a result of widening or realignments, or improving recovery areas or sight-lines via shoulder upgrades. All such improvements would further increase the visibility and conspicuity of many of the intersections along the corridor which – like the low-cost intersection treatments – may help to break-up the openness of the corridor and enhance driver attentiveness. Specific upgrades such as shoulder widening, turn lanes, and climbing lane improvements would also enhance corridor travel for truck operations and during activation of emergency detours for I-80.

### *Alternative with Maintenance, Signing, Study, or by Others*

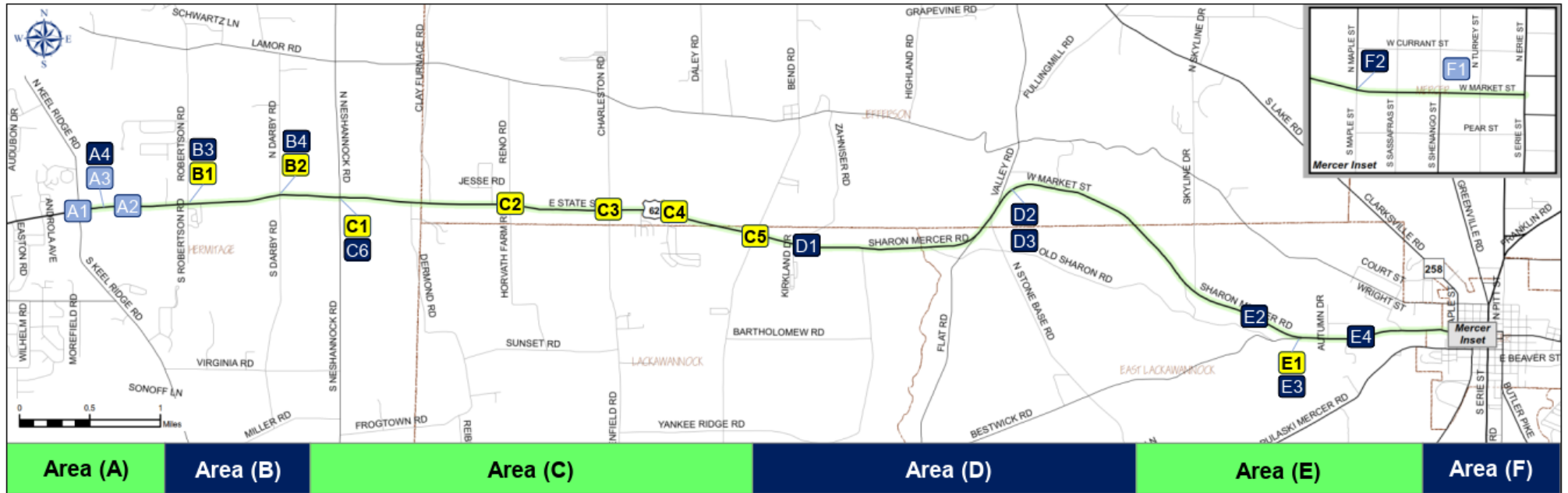
Additional improvements were noted at four other locations within the corridor ([Exhibit 29](#)). These include:

- (A1) the Keel Ridge Road Green Light-Go Project, which is an ongoing comprehensive traffic signal equipment upgrade being actively completed by others (including the City of Hermitage) as part of a separate program.
- (A2) the US 62 South (westbound) Red Signal Ahead Sign, which proposes to upgrade and replace the existing side-mounted signal ahead sign/beacons with an overhead, mast-arm mounted, signal-activated LED installation that will indicate when the Keel Ridge Road westbound approach is stopped.
- (A3) the US 62 South (westbound) Shoulder Maintenance Upgrades, which could potentially be addressed as a shorter-term maintenance activity in advance of more substantial widening.
- (F1) the US 62 / Mercer Borough Circulation Study, which would entail a more detailed follow-up study to assess traffic circulation patterns and potential access/turn restrictions, one-way/two-way conversions, school bus rerouting, or similar actions to enhance traffic operations within the borough and specifically with a focus on potential restrictions or improvements at the US 62 and Shenango Street intersection.

The collective sets of Detailed Alternatives were presented for public review and comment at the project's second public meeting, including survey efforts to explore their perceived relative benefits for overall travel along US 62 (previous [Exhibit 27](#) with comment details per [Appendix F3](#)). Based on feedback from that meeting and subsequent discussions with planning partners at PennDOT and MCRPC, the Detailed Alternatives were further refined and evaluated, and cost estimates created, to form the basis of the Consensus Set of Improvements and related Project Implementation Sheets summarized in the next section of this report.



Exhibit 29: US 62 Detailed Alternatives Map



**Legend:**

- # Potential Candidate for Low-Cost Intersection Treatment
- # Alternative w/ Infrastructure Improvement (see Detail)
- # Alternative w/ Maintenance, Signing, Study, or by Others

**Area Descriptions:**

- (A) Keel Ridge Road Area
- (B) Robertson Road to Darby Road
- (C) Neshannock Road to Bend Road
- (D) Zahniser Road to Valley Road
- (E) Skyline Dr to West of Mercer Borough
- (F) Mercer Borough

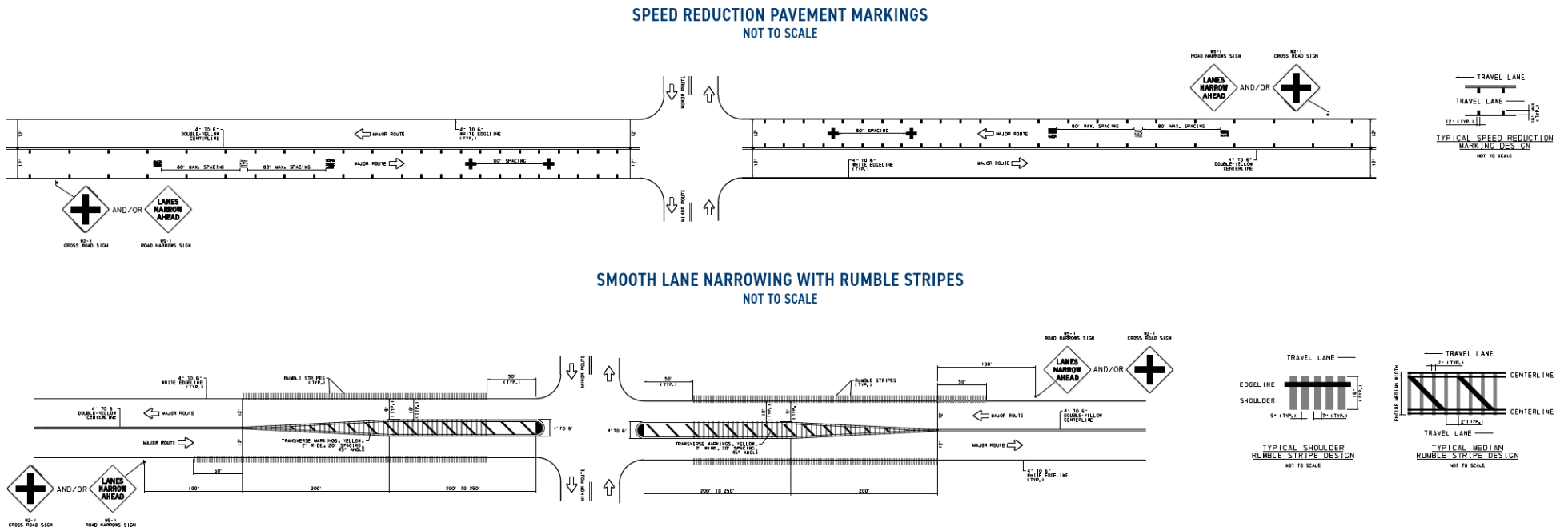
**Alternative / Description:**

- A1 Keel Ridge Rd Green Light-Go Project
- A2 US 62 South (WB) Red Signal Ahead Sign
- A3 US 62 South (WB) Shoulder Maintenance Upgrades
- A4 US 62 South (WB) Shoulder Widening w/ Barrier
- B1 Intersection Treatments (US 62 / Robertson Rd)
- B2 Intersection Treatments (US 62 / Darby Rd)
- B3 US 62 / Robertson Rd Turn Lanes
- B4 US 62 / Robertson Rd Turn Lanes plus Multi-Use Trail and Darby Rd Roundabout
- C1 Intersection Treatments (US 62 / Neshannock Rd)
- C2 Intersection Treatments (US 62 / Horvath Farm & Reno Rd)
- C3 Intersection Treatments (US 62 / Charleston & Greenfield Rd)
- C4 Intersection Treatments (US 62 / Forrest Brooke Trailer Park)
- C5 Intersection Treatments (US 62 / Bend Rd)
- C6 US 62 / Neshannock Rd Turn Lanes

**Alternative / Description:**

- D1 US 62 South (WB) Climbing Lane Adjustments to Zahniser Rd
- D2 US 62 / Valley Rd Turn Lanes
- D3 US 62 / Valley Rd Turn Lanes with Realignment
- E1 Intersection Treatments (US 62 / Bestwick Rd)
- E2 US 62 North (EB) Climbing Lane to West of Bestwick Rd
- E3 US 62 / Bestwick Rd Turn Lanes with Realignment
- E4 US 62 / Center Turn Lane between Autumn & Landis Dr
- F1 US 62 / Mercer Borough Circulation Study
- F2 US 62 / Maple St Traffic Signal with Turn Lanes

## Exhibit 30: Low-Cost Intersection Treatment Options



### US 62 POTENTIAL CANDIDATES FOR LOW-COST INTERSECTION TREATMENTS (TYPE TO BE DETERMINED)

- B1** Robertson Road
- B2** Darby Road
- C1** Neshannock Road
- C2** Horvath Farms Road / Reno Road
- C3** Charleston Road / Greenfield Road
- C4** Forrest Brooke Trailer Park
- C5** Bend Road
- E1** Bestwick Road



### OTHER POTENTIAL "LOW COST" INTERSECTION TREATMENTS

- Post-Mounted Reflective Delineators
- Increase in Sign Size
- Duplicate Signs
- Reflective Panels on Sign Posts
- Retroreflective Sheeting on Sign Perimeter
- Warning Beacon on Standard Sign
- Embedded LEDs within Sign
- Wider Longitudinal Pavement Markings
- Center Line Pavement Markings on Minor Road Approach
- Transverse Rumble Strips on Minor Road Approach
- High-Friction Surface Treatment
- Intersection Lighting

## Consensus Set of Safety Improvements

A final consensus set of safety improvements was compiled based on the Detailed Alternatives set above ([Exhibit 29](#)), feedback from the second public meeting ([Appendix F3](#)), and follow-up assessments to incorporate rough order-of-magnitude cost estimates and high-level planning considerations ([Exhibit 31](#)).

The final list of improvements consists primarily of location-specific enhancements in response to location-specific needs. Except for a few site-specific variations (e.g. turn lanes at Valley Road either with or without intersection realignment) most options are not mutually exclusive and/or may be framed as short-, medium-, or long-term ideas to reconsider as future needs or opportunities evolve. In this manner, the information below outlines a corridor master plan where the implementation or timeframe of any given element may be based less on “priority” within the corridor, and more on relative opportunity, cost, complexity, impact potential, or funding availability. Funding will be an exceptionally critical constraint, as the outcomes of this planning study must be weighed alongside broader transportation needs and priorities elsewhere throughout the study area municipalities, the remainder of Mercer County, and PennDOT District 1-0’s six-county jurisdiction.

### Improvements Compilation and Planning Considerations

Additional details to help support future project planning and decision-making relative to current or future implementation opportunities along the US 62 corridor are summarized in [Exhibit 31](#). Relevant assumptions include the following:

#### *Timeframe*

Implementation timeframes were assumed as short-term (ST), medium-term (MT), or long-term (LT) with respect to a general opinion of the level of funding that would be required and the anticipated levels-of-effort that it may take to plan, program, design, permit, and construct each project. While specific timeframes are not proposed, the project team’s perspective viewed short-term as approximately 1-3 years, medium-term as 4-6 years, and long-term as greater than 6 years.

#### *Estimated Cost*

Rough order-of-magnitude cost estimates were compiled for each project using high-level assumptions for major construction item quantities, unit costs, and reasonable allowances, contingencies, and escalation factors that affect the overall implementation cost for each improvement.<sup>17</sup> Specific allowances and contingencies encompassed percentage-based assumptions to account for: erosion & sediment control, drainage & stormwater management, maintenance & protection of traffic, construction mobilization, incidental construction items, additional signing, construction cost escalation, construction contingency, construction oversight, right-of-way, utilities, and engineering/design services. Cost estimate details are compiled in [Appendix G](#).

#### *Maintenance Elements*

Beyond the estimated cost to implement each project, future costs will be incurred by PennDOT or municipal forces to complete periodic maintenance and upkeep. Given the unknown status of future project commitments, specific maintenance cost assumptions were not detailed at this time; however, anticipated maintenance elements were highlighted by category to be considered during future planning/programming discussions. Assumed categories generally recognized that future maintenance may be required to maintain barrier and guiderail (BG), drainage and stormwater facilities (DS), power and lighting components (PL), roadway and shoulder paving (PV), signing and markings (SM), and traffic signal operations (TS).

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<sup>17</sup> References for cost and allowance assumptions include PennDOT’s *Engineering and Construction Management System* (ECMS) “Item Price History” data and the PennDOT *Cost Estimating Guide* (Publication 352).

Exhibit 31: Improvements Compilation and Planning Considerations

Alternative / Description	Timeframe	Est Cost (\$ 000's)	Maintenance Elements <sup>(b)</sup>	Design & Permitting	Public Buy-In	ROW Impact	Utility Impact	Safety Influence	Operations Influence
<b>US 62 Corridor Management (Multiple Locations)</b>									
<b>Corridor-Wide:</b> Maintenance Review Package	ST-MT	Varies	(BG) (DS) (PV) (SM)	Simple	Med	Low	Low	Low	Low
<b>B1, B2, C1, C2, C3, C4, C5, E1:</b> Intersection Treatment Candidates	ST-MT	Varies <sup>(a)</sup>	(PL) (PV) (SM)	Simple	Med	Low	Low	High	Med
<b>Area (A) – Keel Ridge Road</b>									
<b>A2:</b> US 62 South (WB) Red Signal Ahead Sign	ST-MT	\$140	(PL) (SM) (TS)	Simple	Med-High	Low	Low	High	Low
<b>A4:</b> US 62 South (WB) Shoulder Widening w/ Barrier	MT	\$450	(BG) (DS) (PV)	Simple-Mod	High	Low	Low	Med	Low
<b>Area (B) – Robertson Road to Darby Road</b>									
<b>B3:</b> US 62 / Robertson Rd Turn Lanes	MT	\$790	(PV) (SM)	Simple	High	Low-Med	Med	Med	High
<b>B4:</b> Alternative B3 plus Multi-Use Trail and Darby Rd Roundabout	LT	\$6,900	(DS) (PV) (SM)	Complex	Low	High	High	High	High
<b>Area (C) – Neshannock Rd to Bend Road</b>									
<b>C6:</b> US 62 / Neshannock Rd Turn Lanes (w/ optional TWLTL extension)	MT	\$730-\$1,100 <sup>(c)</sup>	(PV) (SM)	Simple	High	Med	Med	Med	Med
<b>Area (D) – Zahniser Road to Valley Road</b>									
<b>D1:</b> US 62 South (WB) Climbing Lane Adjustments to Zahniser Rd	ST	\$70	(SM)	Simple	High	Low	Low	Low	Med
<b>D2:</b> US 62 / Valley Rd Turn Lanes (with optional realignment)	MT-LT	\$1,200-\$2,600 <sup>(c)</sup>	(BG) (DS) (PV) (SM)	Simple-Mod	Med-High	Low-Med	Low	Low	High
<b>Area (E) – Skyline Drive to West of Mercer Borough</b>									
<b>E2:</b> US 62 North (EB) Climbing Lane to West of Bestwick Rd	LT	\$3,100	(BG) (DS) (PV) (SM)	Complex	Med-High	High	Med-High	High	High
<b>E3:</b> US 62 / Bestwick Rd Turn Lanes with Realignment	MT-LT	\$1,200	(BG) (DS) (PV) (SM)	Mod	Med	Med	Low-Med	Low	Med
<b>E4:</b> US 62 / Center Turn Lane between Autumn & Landis Dr	LT	\$2,500	(BG) (DS) (PV) (SM)	Simple	Med	Med	Med	High	High
<b>Area (F) – Mercer Borough</b>									
<b>F2:</b> US 62 / Mercer Borough Circulation Study <sup>(d)</sup>	ST-MT	\$25	n/a	Simple	TBD (Med)	TBD (Low)	n/a	TBD (High)	TBD (Med)
<b>F1:</b> US 62 / Maple St Traffic Signal with Turn Lanes	MT	\$1,700	(PL) (PV) (SM) (TS)	Mod	Med	Low-Med	Med	Med	High

**Table Notes:**

- (a)** Costs vary per treatment per location, ranging from nominal costs for minor signing/markings upgrades, up to \$50,000 for broader applications such as Smooth Lane Narrowing with Rumble Stripes.
- (b)** Future maintenance elements may include: (BG) barrier and guiderail; (DS) drainage & stormwater; (PL) power & lighting; (PV) pavement; (SM) signing & markings; or (TS) traffic signal operations.
- (c)** Cost range indicates turn lane estimates (1) without and (2) with the optional elements (i.e. TWLTL extension at Neshannock Road, or realignment at Valley Road).
- (d)** Relative outcomes of the study are to-be-determined (TBD) pending future recommendations; low-med-high estimates shown here reflect potential outcomes if US 62 / Shenango Street is improved.
- (e)** Color shading implies **BLUE** as least challenging or most relative benefit; **YELLOW** as medium; and **ORANGE** as most challenging or least relative benefit.

### *Design & Permitting*

Assumptions for anticipated design and permitting efforts that may be required for each project were noted as Simple, Moderate, or Complex. While no specific criteria were reviewed, these ratings generally attempted to account for the individual project scope/scale, need for engineering services, possible location-specific impacts (e.g. slopes, streams, wetlands), and their influence on lead times that may be required to realistically plan for, design, and implement a project.

### *Public Buy-In*

Assumptions for public buy-in were qualitatively based on a review of survey responses from the second public meeting relative to the perceived benefit level of each improvement. Specifically, the assumptions for Low, Medium, or High buy-in were associated with the general range of Least to Most Benefit from the results of Question 6 on the open-house comment summary (previous [Exhibit 27](#)). While this input reflects only a limited sample and individual public opinions will certainly vary, it is intended to provide a high-level snapshot of the likelihood of public support or opposition for each project, which may also help to plan future public outreach and coordination efforts as the project planning and development process continues.

### *Right-of-Way and Utility Impacts*

Separate assumptions for right-of-way (ROW) and utility impacts were qualitatively based on brief reviews of available aerial imagery and historic construction plans throughout the corridor. Ratings were assumed as Low, Medium, or High based on the relative degree to which each project's implementation might affect adjacent properties (e.g. widening and shoulders) or observable utilities (e.g. utility poles alongside the roadway).

### *Safety Influence*

Safety Influence was rated as Low, Medium, or High based on the relative degree that each project might reduce or mitigate crash activity within the corridor. These ratings were based on a combination of two key considerations including (1) the existing number of crashes within the improvement area and (2) an assumed crash reduction percentage for the primary type of improvement being made.<sup>18</sup> All ratings here are relative to other improvements within the plan, but do not reflect safety enhancements beyond the existing crash counts (e.g., the positive benefit of turn-lane additions or sight-distance mitigation where existing crash counts may be low, but perceived concerns or "near-misses" may be high).

### *Operations Influence*

Operations Influence was rated as Low, Medium, or High based on the qualitative extent to which each project might affect travel along the corridor. As noted previously, traffic operations analyses did not identify congestion or delay as significant recurring issues for the corridor with most locations operating at LOS C or better (previous [Exhibit 18](#) and [Exhibit 19](#)). As such, "Build" analyses with improvements in-place were not conducted; rather, the operations influence was estimated based on how the nature of the improvement itself. Examples could include Low ratings for simple maintenance actions; Medium for signing, marking, or low-volume intersection improvements; or High for notable lane or traffic control revisions...particularly those that would enhance broader corridor travel for trucks or during I-80 emergency detour implementations.

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<sup>18</sup> Crash reductions were estimated from available/comparable insights based on FHWA's *Crash Modification Clearinghouse* (<http://www.cmfclearinghouse.org/index.cfm>) with typical reductions of 10-45% by improvement type. Efforts in this study, however, are not intended to reflect a fully-detailed, quantitative crash benefit assessment given the number of CMF assumptions and approximations that were necessary (i.e., several improvement scenarios do not explicitly mesh with the currently-available CMF resources).



## Project Implementation Sheets

Summary elements for the consensus set of safety improvements have been included on the project implementation sheets at the end of this section. These sheets are not intended to replace PennDOT project screening forms or related PennDOT Connects documentation, which will require additional detailed information if/when future project planning/programming decisions are pursued. Rather, the implementation sheets here outline minimal project summary information for ease of reference, as applicable, to include:

- Opinion of Probable Cost – assumed for further planning or engineering purposes per previous descriptions, [Exhibit 31](#), and [Appendix G](#).
- Timeframe – assumed as short, medium, or long-term per previous descriptions and [Exhibit 31](#).
- Responsible Party – potential candidate for project champion or lead agency; does not imply existing formal commitments or binding agreements.
- Project Partners – potential cooperating agencies or bodies needed for project approval and implementation; does not imply existing formal commitments or binding agreements.
- Funding Sources – potential source(s) of funding to explore/consider for project implementation.
- Project Details – basic background information including the project location, description, purpose (i.e. the reason for a project), need (i.e., the data or conditions behind the purpose), other alternatives studied, and notable potential challenges that may be encountered.

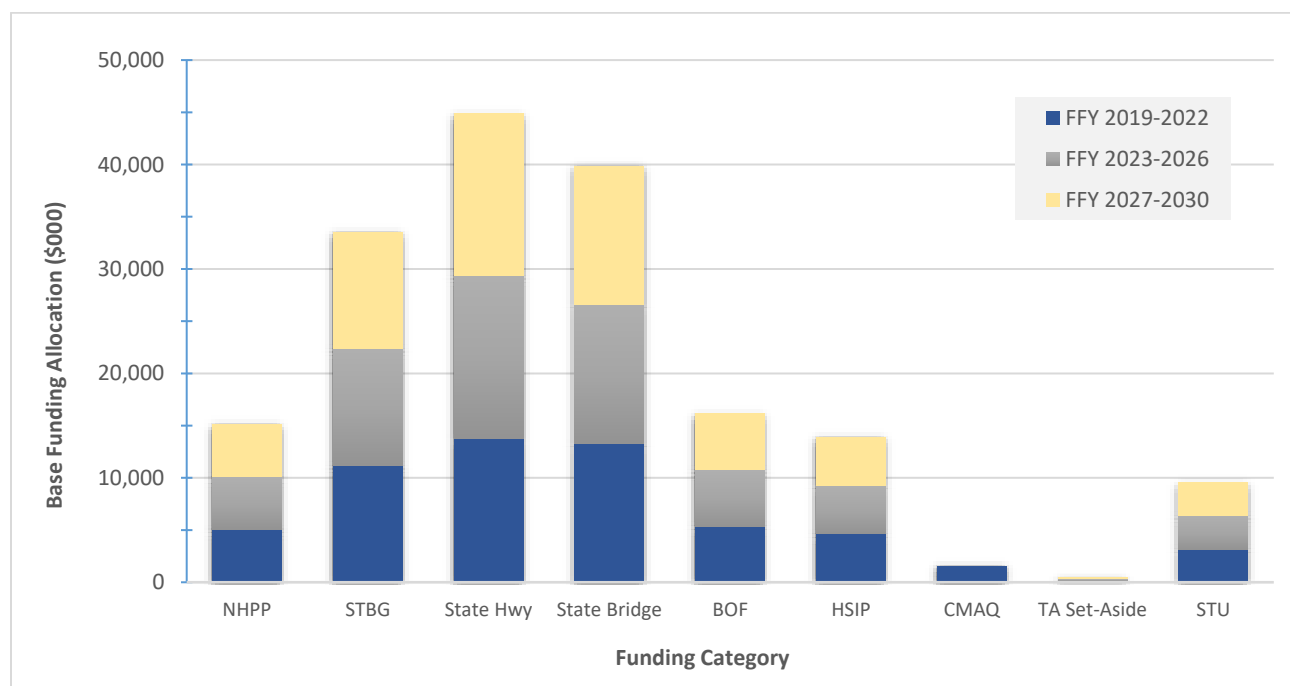
## Funding Categories

Relative to funding sources, options identified here primarily focus on standard funding categories that are typically allocated by way of the region's formal development of the Transportation Improvement Program (TIP). Such categories and anticipated 12-year funding levels for Mercer County ([Exhibit 32](#)) include the following:

- *National Highway Performance Program (NHPP)*: this category of federal funds can be obligated for rehabilitation, replacement, or new construction projects on any eligible NHS facility, which includes only those facilities as defined in 23 U.S.C. 103, Highway: Federal-Aid System, except as specified in the statute.
- *Surface Transportation Block Grant Program (STBG)*: this category of federal funds can be used on projects that preserve and improve the conditions and performance on any Federal-Aid highway, bridge and tunnel projects on any public road, pedestrian and bicycle infrastructure, and transit capital projects. The program includes formula-based funding and sub-categories for areas under 200,000 population (STN) and rural areas under 5,000 population (STR).
- *State Highway Capital Construction (State Hwy)*: this category (Appropriation 581) allocates state funding, minus a discretionary set-aside, based upon each region's share of highway needs with factors accounting for vehicle miles traveled, lane miles, and roadway pavement conditions.
- *State Bridge Formula Funding (State Bridge)*: this category allocates funding to planning regions based on deck area of structurally deficient bridges and deck area of all bridges, including state-owned (Appropriation 185) and locally-owned (Appropriation 183) bridge components.
- *Bridge Off-System (BOF)*: this category of federal funds is allocated on a formula-basis to planning regions for use on minor collector and local functional class bridges only.

- **Highway Safety Improvement Program (HSIP):** this is a core Federal-Aid program for the purpose of achieving a significant reduction in fatalities and serious injuries on all public roads, including local public roads. The HSIP is highly data-driven and, as such, applicable projects must be identified on the basis of crash experience, crash potential, crash rate, or other data-supported means. Eligible projects must also be listed on the Strategic Highway Safety Program (SHSP).
- **Congestion Mitigation and Air Quality (CMAQ):** this category of funds may be used for transportation projects and programs that help meet the requirements of the Clean Air Act. While historically available for use in the SVATS-MPO region, recent changes to air quality “orphan maintenance” status are such that the MPO will no longer receive future CMAQ funding.
- **Transportation Alternatives Set-Aside from STBG (TA Set-Aside):** a replacement to the former Transportation Alternatives Program (TAP) and including a sub-category for urban areas (TAU), this source of federal funding applies to programs and projects such as pedestrian and bicycle facilities, enhancements to public transportation access, community improvements, environmental mitigation, recreational trails, safe routes to school, sidewalks and streetscape elements, and historic preservation activities.
- **STBG Program - Urban (STU):** this category of federal funds is similar to STBG but dedicated for use in regions with a population of at least 200,000.

Exhibit 32: Mercer County 12-Year Highway/Bridge Base Funding Allocations



Reference: Pennsylvania's Statewide Transportation Improvement Program, FFY 2019-2022 (PennDOT, 2018)

### Other Funding Options

A variety of other funding options or mechanisms could be explored via cooperation between PennDOT, agencies, municipalities, developers, or advocacy groups to pursue mutually beneficial projects. Such options, however, will not typically apply to all project opportunities and may be contingent on discretionary decisions, statewide priorities, highly competitive grant programs, or maintenance plans. Examples<sup>19, 20</sup> include:

- **Transportation Infrastructure Investment Fund (TIIF):** an annual reserve for transportation improvements associated with economic development opportunities. Funding utilization will be at the discretion of the Secretary of Transportation in consultation with the Governor.
- **Discretionary Funding (Spike):** a percentage of STBG and available state highway and bridge funds that are held in reserve for distribution to offset the impact of high cost projects or programs (“spikes”) which are beyond a region’s allocation, or other statewide priorities.
- **Maintenance Funds:** state formula funding allocated to individual counties (582 Program) or made available by Act 89 (409 Program) to be used for maintenance contracts such as mill and overlay paving projects with minimal other improvements included.
- **Pennsylvania Infrastructure Bank (PIB):** a revolving low-interest loan fund administered by PennDOT for highway, bridge, transit, aviation, and rail freight projects. A wide variety of applicants are eligible, while local transportation uses may include road construction and resurfacing, bridge rehabilitation and replacement, traffic signals and upgrades, drainage structures, stormwater management, and municipal roadway/bridge maintenance equipment.
- **Multimodal Transportation Funding (MTF):** funding created by Act 89 to provide financial assistance to municipalities, council of governments, businesses, economic development organizations, public transportation agencies, rail/freight, and ports in order to improve transportation assets to enhance communities, pedestrian safety, and transit revitalization.
- **Automated Red-Light Enforcement Grants (ARLE):** a competitive state-funded grant program for relatively low-cost transportation safety projects including traffic signals, roadways at signalized intersections, school zones, guiderails, and roadside safety. Applicants may include local authorities, MPOs, county planning organizations, and commonwealth agencies.
- **Green Light Go Grants (GLG):** a competitive state-funded grant program for the operation and maintenance of traffic signals along critical and designated corridors or state and local highways.
- **Municipal and County Liquid Fuels Funding:** supports a range of projects for municipalities’ and counties’ construction, reconstruction, maintenance and repair of public roads or streets.
- **Reserve Line Items:** While not a separate funding source per se, the line-item approach provides a means within the TIP development process to reserve funds from/related to other applicable federal/state sources listed above. Line items can then be “drawn down” to fund certain types of individual projects that will be identified at a future date. Possibilities may include, but not be limited to, Betterments Programs, Bridge Preservation, or Low-Cost Safety Initiatives.

<sup>19</sup> **Reference:** PennDOT Publication 740 (2019), <http://www.dot.state.pa.us/public/pubsforms/Publications/PUB%20740.pdf>

<sup>20</sup> **Reference:** *Pennsylvania’s Statewide Transportation Improvement Program, FFY 2019-2022* (PennDOT, 2018)

### Grouped Projects

While most implementation sheets refer to a single project or location, two groups of improvement packages have been combined to include the following:

- *US 62 Corridor Management: Maintenance Review Package* – this compilation is not intended as a single overall effort or a replacement for existing corridor maintenance activities. Rather, it compiles a list of potential maintenance sites or proposed actions that may be explored individually or incorporated over time during the normal course of other maintenance activities along the US 62 corridor. Key examples include:
  - Evidence of sign issues, erosion control needs, or guide rail needs that were briefly observed during the physical conditions inventory but may require further investigation to determine if or how they should be addressed.
  - Shoulder clean-out and basic maintenance along the US 62 South (westbound) approach to Keel Ridge Road.
  - Removal of existing passing zones west of Winner Road based on distance constraints (i.e. removal of WB Passing “A-B” and EB Passing “C-B” per previous [Exhibit 17](#)).
- *US 62 Corridor Management: Intersection Treatments Package* – this compilation is not intended as a single overall effort, location, or type of improvement. Rather, it presents a list of multiple low-cost intersection improvement options and candidate locations that may be explored and implemented over time based on site-specific needs, state/county/municipal preferences, and future funding or implementation opportunities. Treatment options range from simple supplemental signing and pavement markings, to full intersection treatments, to the addition of lighted elements or radar speed display signs with dynamic feedback messaging.

### Other Project Considerations

In addition to details in the project implementation sheets, other project opportunities that should be noted relative to future operations or potential interests along the US 62 corridor may include the following:

#### *Keel Ridge Road Green Light-Go Project*

The Keel Ridge Road Green Light-Go Project is a separate, active effort currently being studied/designed in cooperation with PennDOT District 1-0 and the City of Hermitage. As part of PennDOT’s Green Light-Go program, this intersection is being upgraded to fully replace all existing traffic signals, poles, signage, and related equipment, which in turn will yield benefits that address many of public comments received during this study (e.g., improved signal visibility).

### Additional Shoulder Widening

While no plans are currently proposed (beyond what may be included within the implementation sheet details), there may be benefits to considering future locations or opportunities for additional shoulder widening to further enhance corridor safety and operations. The additional shoulder area could provide multiple benefits to include:

- Additional vehicle recovery area in the event of lane departure maneuvering (e.g. unexpected deer, debris on roadway, or during loss of traction).
- Additional buffer away from roadside obstructions, to enhance sight-distance on curves, or to provide additional cushion for trucks and oversize vehicles.
- Additional vehicle refuge area in the event of disabled vehicles or emergencies, or to provide pull-off areas for use by law enforcement activities. For these purposes, an alternative to wider shoulder could include the creation of dedicated pull-off areas at strategic locations, although the planning, ROW, and maintenance aspects of this option would require further consideration and potential coordination with local municipal forces.

*Where shoulder width is limited, another mitigation strategy is to provide regularly spaced pull-off areas (Figure 40). Pull-off areas provide several advantages. First, they provide room to store disabled vehicles, which is particularly important for maintaining operations on high-volume highways. A disabled vehicle can be parked or quickly removed from a travel lane to a pull-off area, allowing traffic to flow in all available traffic lanes as quickly as possible. Second, pull-off areas provide an area for law enforcement to detain vehicles in areas with narrow shoulders. This increases safety for law enforcement personnel, the stopped driver, and passing drivers. Operations are likely to be improved as well because drivers are more likely to maintain normal speeds and stay within their lane if law enforcement activities are being conducted a sufficient distance from the travel lanes in a pull-off area.*

*If possible, pull-off areas should be located where lane departure crashes are less likely, such as tangent sections or on the inside of horizontal curves.*

*FHWA, Mitigation Strategies for Design Exceptions, 2007 (Archived).*

[https://safety.fhwa.dot.gov/geometric/pubs/mitigationstrategies/chapter4/4\\_lane3showidth.cfm#FIGURE\\_40](https://safety.fhwa.dot.gov/geometric/pubs/mitigationstrategies/chapter4/4_lane3showidth.cfm#FIGURE_40)

To maximize benefits, any future/additional shoulder improvements should be thoughtfully and strategically planned to meet corridor-specific needs within corridor-specific constraints. While the above benefits may be substantial, site-specific shoulder widening or new shoulder installations would have to be analyzed separately from this study to further consider their potential influence or impact on travel speeds/speeding (i.e. due to wider, more open road sections); right-of-way, utility, or environmental impacts; installation costs and construction/traffic control needs; and/or future roadway maintenance costs.

### Summary and Next Steps

The collective findings of this plan encompass concepts only and are not immediately linked with current or anticipated design or construction funding that would be required to implement any future improvements. However, this document and the action plan itself reflect critical first steps toward identifying specific needs and ideas that local, county, and state agencies may reference as they continue to plan for, prioritize, and implement transportation improvements throughout the broader region. Logical next steps could consider incorporating project concepts (where appropriate and based on funding) into planned or future maintenance or betterment activities, Mercer County's Long-Range Transportation Plan (LRTP), or the four-year Transportation Improvement Program (TIP); at this time, however, no projects identified herein are committed or funded.



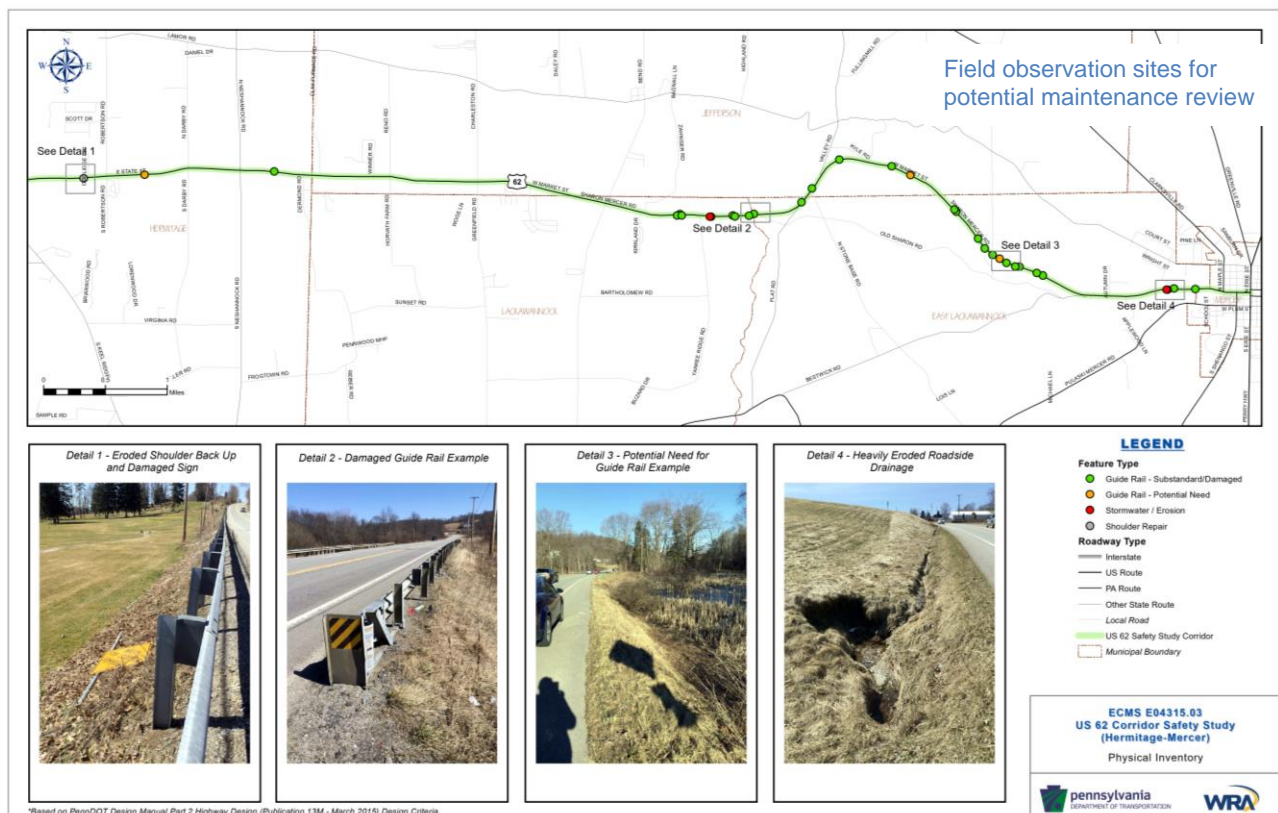
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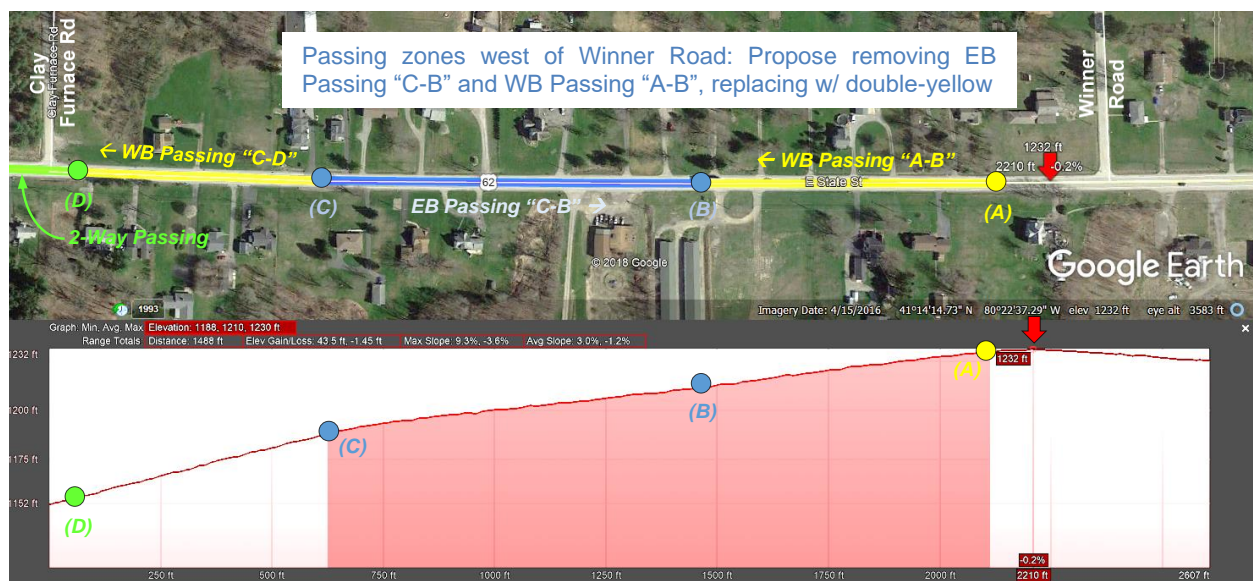
## US 62 CORRIDOR MANAGEMENT: Maintenance Review Package

<b>Opinion of Probable Cost</b>	Varies (contingent on location & treatment)
<b>Timeframe</b>	Short to Mid-term
<b>Responsible Party</b>	PennDOT
<b>Project Partners</b>	PennDOT, MCRPC, Study Area Municipalities (varies by location)
<b>Funding Sources</b>	NHPP, STBG, State Hwy, HSIP, Maintenance Funds, Liquid Fuels, Reserve Line Items (if applicable)

### Project Details

<i>Project Location</i>	Miscellaneous locations along US 62 from Keel Ridge Road to US 19
<i>Project Description</i>	Review, assess, and (where applicable) complete miscellaneous maintenance repairs including vegetation clearing, drainage improvements, erosion repair, guiderail updates, or signing and pavement marking updates
<i>Project Purpose</i>	To maintain existing roadway, drainage, and traffic control features to extend their operational life and ensure safe/positive guidance for travelers
<i>Project Need</i>	Field observations noted areas on US 62 with vegetation obstructions, damaged guiderail, outdated guiderail end treatments, faded or fallen signage, and (west of Winner Road) sub-standard passing zone lengths
<i>Other Alternative(s) Studied</i>	n/a
<i>Potential Challenges</i>	None







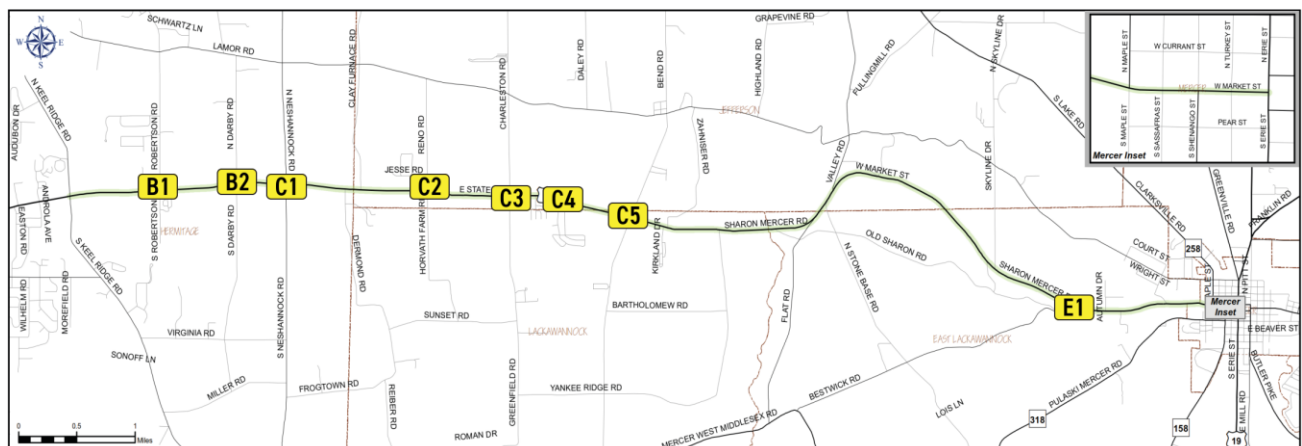
## US 62 CORRIDOR MANAGEMENT:

### Intersection Treatments Package

<b>Opinion of Probable Cost</b>	Varies (contingent on location and treatment), approximately \$500 to \$50,000 per site
<b>Timeframe</b>	Short to Mid-term
<b>Responsible Party</b>	PennDOT, Study Area Municipalities (varies by location)
<b>Project Partners</b>	PennDOT, MCRPC, Study Area Municipalities (varies by location)
<b>Funding Sources</b>	NHPP, STBG, State Hwy, HSIP, PIB Loan, ARLE Grant, Liquid Fuels, Reserve Line Items (if applicable)

## Project Details

<i>Project Location</i>	Varies (see map/list below)
<i>Project Description</i>	Installation of low-cost intersection treatments that may include sign treatments, sign lighting/beacons, enhanced delineation, whole intersection treatments, (e.g. Speed Reduction Pavement Markings, Smooth Lane Narrowing), or feedback treatments (e.g. Dynamic Speed Feedback Displays).
<i>Project Purpose</i>	To improve safety by enhancing intersection and traffic control conspicuity, encouraging motorist attentiveness and compliance with traffic control devices, and reducing speeds or calming traffic, particularly at intersection approaches.
<i>Project Need</i>	Several intersections along US 62 are low-volume, unsignalized, rural connections that may be missed or ignored by motorists which, coupled with distracted driving and speed-related factors cited in at least 37% of all crashes, contribute to crash trends and safety along the corridor.
<i>Other Alternative(s) Studied</i>	Varies by location to include turn lanes, intersection realignments, traffic signals, and roundabouts
<i>Potential Challenges</i>	None



### Candidate Locations:

<b>B1</b>	Robertson Rd	<b>C3</b>	Charleston Rd / Greenfield Rd
<b>B2</b>	Darby Rd	<b>C4</b>	Forrest Brooke Trailer Park
<b>C1</b>	Neshannock Rd (SR 3037)	<b>C5</b>	Bend Rd
<b>C2</b>	Horvath Farms Rd / Reno Rd	<b>E1</b>	Bestwick Rd (SR 3026)

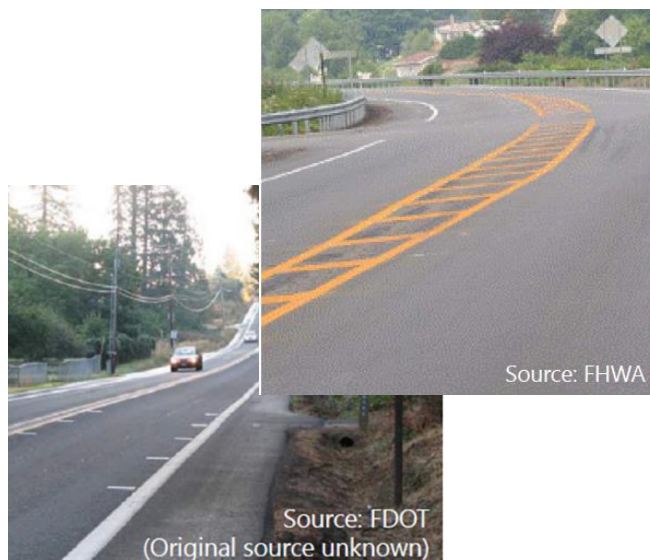
### Other Locations:

Potential Dynamic Speed Feedback Display(s) on select US 62 segments, e.g. west of Bend Rd (C4-C5)

UIIG *	TREATMENT OPTIONS
	<b>Sign Treatments</b>
19	Reflective Panels on Sign Posts
15, 16	Increase in Sign Size and/or Duplicate Signs
20	Retroreflective Sheeting on Sign Perimeter
	<b>Sign Lighting / Beacons</b>
17, 35	Warning Beacon on Standard Sign
18	Embedded LEDs within Sign or on Sign Perimeter
7	Stop Beacon
	<b>Enhanced Delineation</b>
14	Post-Mounted Reflective Delineators
22	Wider Longitudinal Pavement Markings
24	Center Line Pavement Markings on Minor Road
27	Install Pavement Word and/or Symbol Markings
	<b>Whole Intersection Treatments</b>
36	Speed Reduction Pavement Markings
49	Smooth Lane Narrowing w/ or w/o Rumble Stripes
70	Intersection Lighting
69	High-Friction Surface Treatment
4	Intersection Control Beacon
	<b>Feedback Treatments</b>
68	Transverse Rumble Strips on Minor Road
37	Dynamic Speed Feedback Displays
74	Conduct Targeted Speed Enforcement



\* UIIG = <https://toolkits.ite.org/uiig/treatmentlist.asp>

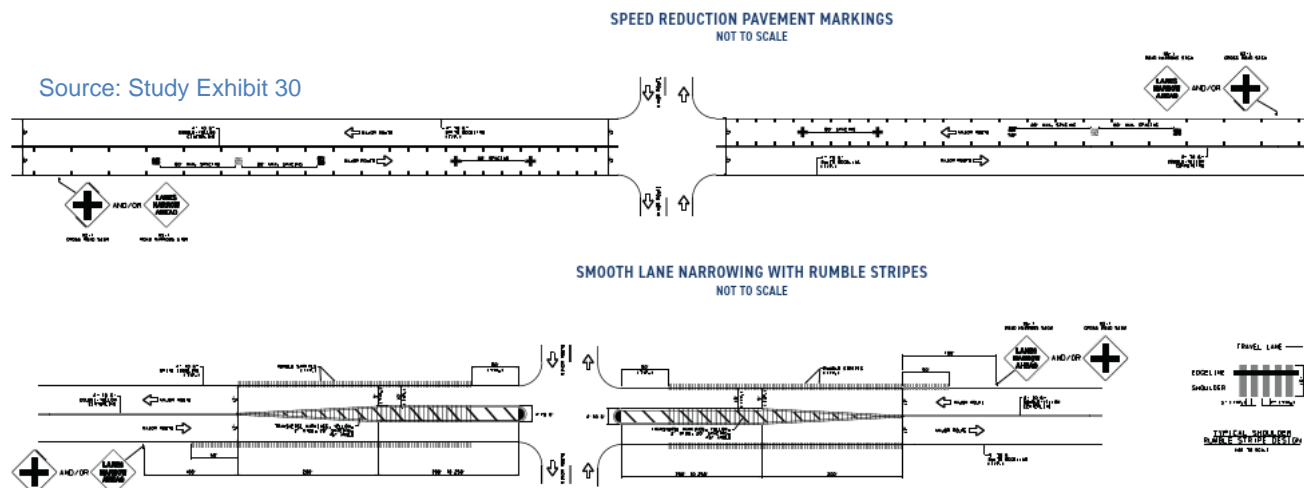


Examples of Dynamic Speed Feedback Displays  
(Source: FHWA-HRT-14-020, January 2015)



Example Sign Treatments (Source: UIIG)

Source: Study Exhibit 30





## ALTERNATIVE A2: US 62 South (WB) Red Signal Ahead Sign to Keel Ridge Road

<b>Opinion of Probable Cost</b>	\$140,000
<b>Timeframe</b>	Short to Mid-term
<b>Responsible Party</b>	PennDOT, City of Hermitage
<b>Project Partners</b>	PennDOT, MCRPC, City of Hermitage
<b>Funding Sources</b>	NHPP, STBG, State Hwy, HSIP, PIB Loan, ARLE Grant, GLG Grant, Reserve Line Items (if applicable)

### Project Details

<i>Project Location</i>	US 62 South (WB) approach to Keel Ridge Road (SR 3011)
<i>Project Description</i>	Installation of overhead, mast-arm mounted "(RED) SIGNAL AHEAD" advance warning sign for the US 62 / Keel Ridge Road signalized intersection
<i>Project Purpose</i>	To enhance advance warning for US 62 South (WB) motorists, including active notification of when the upcoming traffic signal phase is red/stopped; replaces the existing ground-mounted static signage.
<i>Project Need</i>	Crest curve and afternoon/evening sun glare can limit sight visibility to the downstream traffic signal and related traffic queued on US 62 South (WB).
<i>Other Alternative(s) Studied</i>	None
<i>Potential Challenges</i>	Trenching along cut slope/shoulder to install conduit/wiring. Directional boring under US 62 and Keel Ridge Road to connect to the controller cabinet.









## ALTERNATIVE A4: US 62 South (WB) Shoulder Widening with Barrier to Keel Ridge Road

Opinion of Probable Cost	\$450,000
Timeframe	Mid-term
Responsible Party	PennDOT
Project Partners	PennDOT, MCRPC, City of Hermitage
Funding Sources	NHPP, STBG, State Hwy, STU, Reserve Line Items (if applicable)

### Project Details

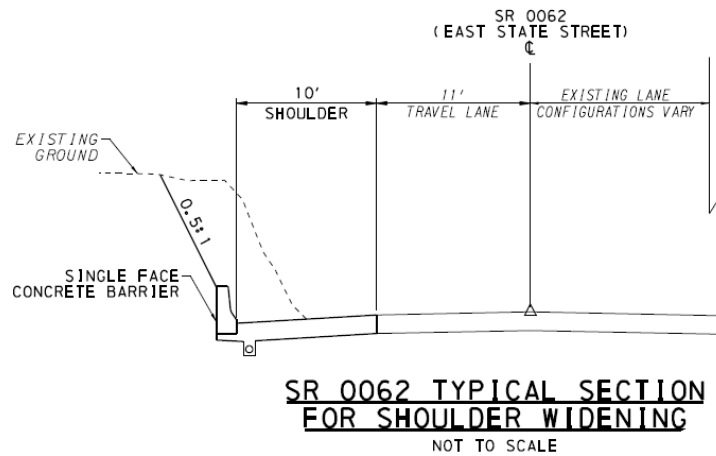
Project Location	US 62 South (WB) approach to Keel Ridge Road (SR 3011)
Project Description	Widen US 62 South (WB) shoulder, add barrier along shoulder, and update drainage features.
Project Purpose	To enhance shoulder width and recovery area while retaining the adjacent cut slope and improving drainage.
Project Need	Debris currently erodes onto the shoulder from the adjacent cut slope, causing drainage inlets to clog and water to flow into the travel lane which, during winter months, results in icy conditions along US 62.
Other Alternative(s) Studied	Clean/maintain existing shoulder and drainage features (short-term)
Potential Challenges	Rock outcrops along the cut slope may make excavation challenging.







Looking east along the  
US 62 South (WB) shoulder



Looking west along the  
US 62 South (WB) shoulder

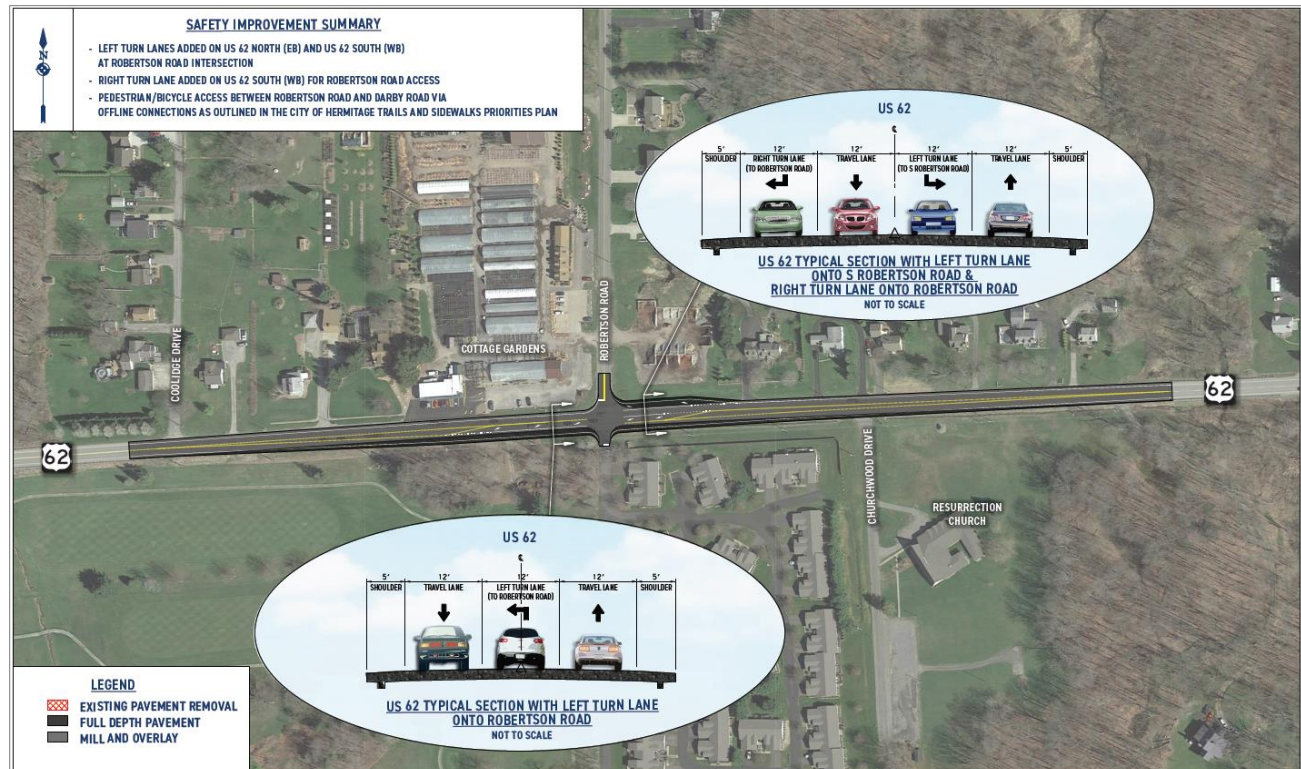


## ALTERNATIVE B3: US 62 / Robertson Road Turn Lanes

Opinion of Probable Cost	\$790,000
Timeframe	Mid-term
Responsible Party	PennDOT
Project Partners	PennDOT, MCRPC, City of Hermitage
Funding Sources	NHPP, STBG, State Hwy, HSIP, Reserve Line Items (if applicable)

### Project Details

Project Location	Intersection of US 62 & Robertson Road
Project Description	Widening of US 62 at Robertson Road to install dedicated turn lanes
Project Purpose	To provide a dedicated left-turn lane on US 62 North (EB) and dedicated left-turn/right-turn lanes along US 62 South (WB) for access to Robertson Road
Project Need	Turn lane warrant criteria are satisfied at this intersection; vehicles currently do not have a dedicated space to safely slow and wait for gaps to access Robertson Road, which accommodates local residential and business traffic.
Other Alternative(s) Studied	Signalization (not warranted), low-cost intersection treatments (short-term)
Potential Challenges	None





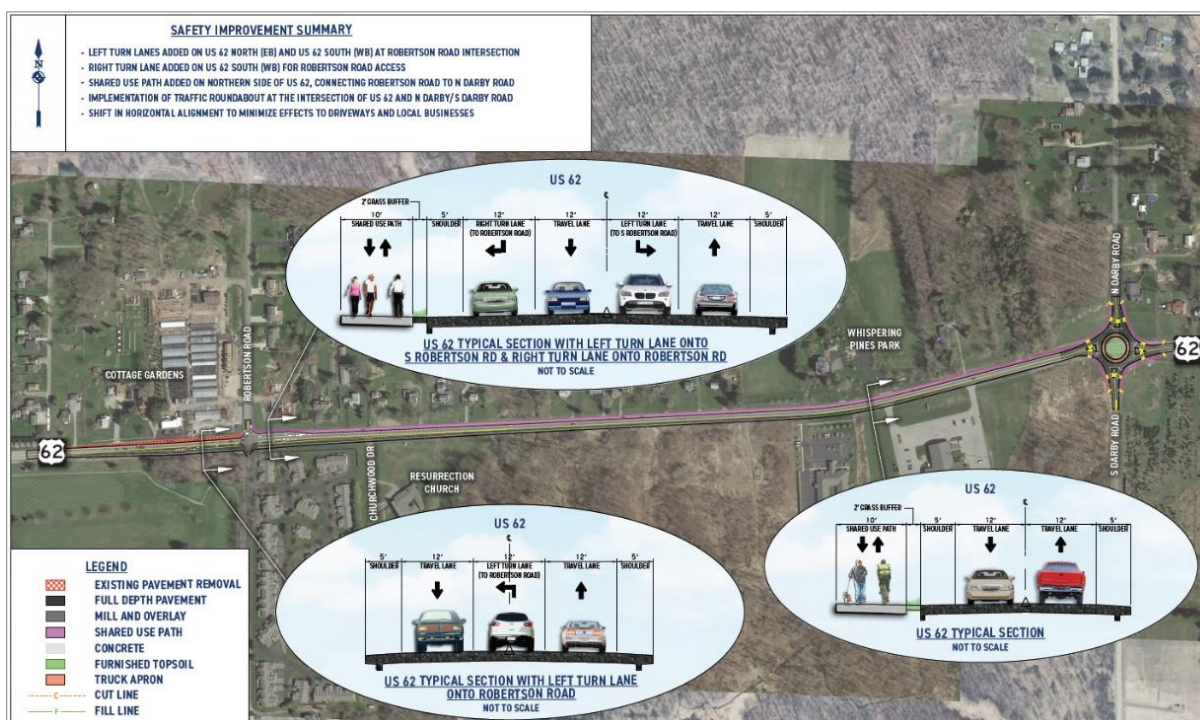


## ALTERNATIVE B4: US 62 Multi-Use Trail to Darby Road Roundabout

<b>Opinion of Probable Cost</b>	\$6,900,000
<b>Timeframe</b>	Long-term
<b>Responsible Party</b>	PennDOT, MCRPC, City of Hermitage
<b>Project Partners</b>	PennDOT, City of Hermitage, adjacent property owners
<b>Funding Sources</b>	NHPP, STBG, State Hwy, HSIP, TA Set-Aside, MTF, PIB Loan, Reserve Line Items (if applicable), Municipal Funding Support

### Project Details

<i>Project Location</i>	US 62 between Robertson Road and Darby Road
<i>Project Description</i>	Widening of US 62 at Robertson Road to install dedicated turn lanes (Alt B3), plus multi-use trail installation from Robertson Road to Darby Road, plus roundabout installation at Darby Road.
<i>Project Purpose</i>	To provide dedicated left/right-turn lanes on US 62 for access to Robertson Road (Alt B3), a pedestrian/bicycle connection from Robertson Road to Darby Road, and a gateway/traffic calming reconfiguration of US 62 at Darby Road.
<i>Project Need</i>	Turn lane warrant criteria are satisfied at Robertson Road, and vehicles currently do not have a dedicated space to safely slow and wait for gaps (Alt B3). Public comments have expressed interest in linking residential areas from Robertson Road to nearby Whispering Pines Park and the Hermitage Athletic Complex; however, no bike/ped connections currently exist, and travel speeds or aggressive driving behaviors along US 62 still reflect the more open/rural character of the corridor, despite entering the City of Hermitage.
<i>Other Alternative(s) Studied</i>	Cross-reference to the <i>City of Hermitage Trails and Sidewalks Priorities Plan</i> (2017 by others), low-cost intersection treatments (short-term)
<i>Potential Challenges</i>	Narrow typical section along US 62 near culvert; public opposition to roundabout installations; limited ROW and impacts to residential properties







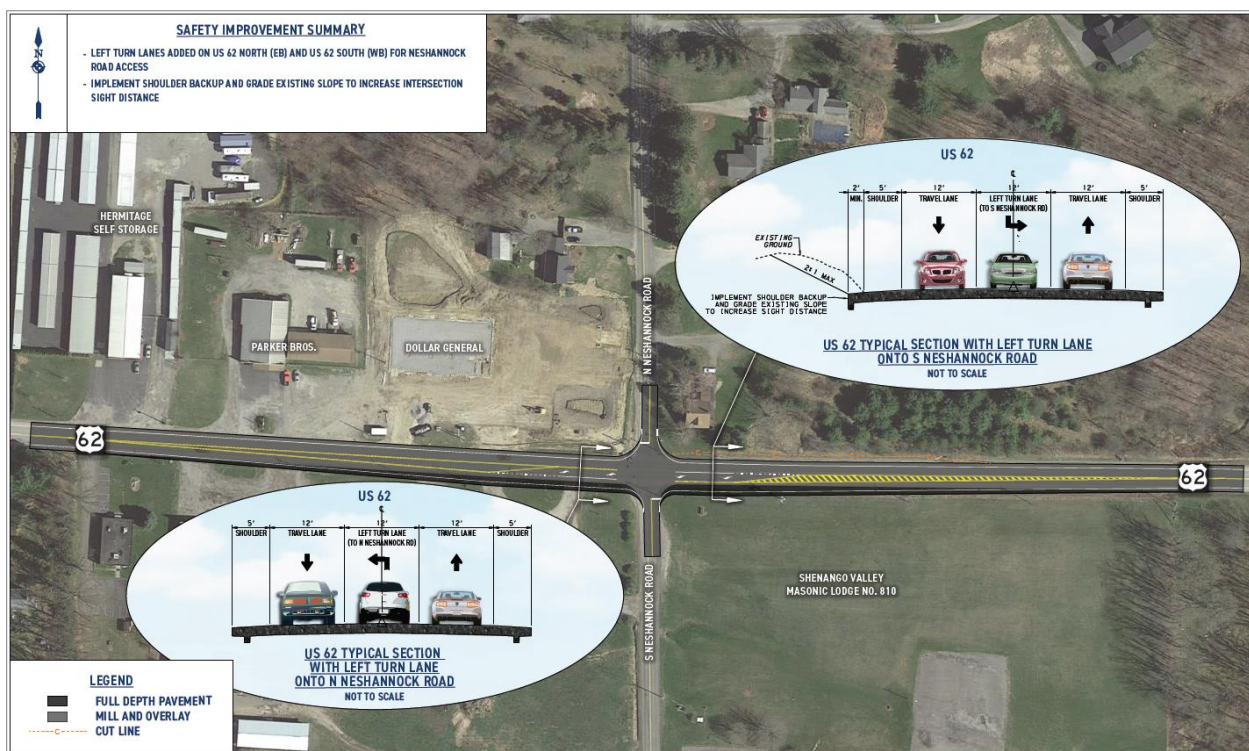
## ALTERNATIVE C6: US 62 / Neshannock Road Turn Lanes

<b>Opinion of Probable Cost</b>	\$730,000 to \$1,100,000 (a)
<b>Timeframe</b>	Mid-term
<b>Responsible Party</b>	PennDOT
<b>Project Partners</b>	PennDOT, MCRPC, City of Hermitage
<b>Funding Sources</b>	NHPP, STBG, State Hwy, HSIP, Reserve Line Items (if applicable)

(a) See Option 1 / Option 2 variations on next page

### Project Details

<i>Project Location</i>	Intersection of US 62 & Neshannock Road (SR 3037)
<i>Project Description</i>	Widening of US 62 at Neshannock Road to install dedicated turn lanes
<i>Project Purpose</i>	To enhance intersection conspicuity and safety by providing dedicated left-turn lanes in both directions on US 62 for access to Neshannock Road, while also removing a portion of the cut slope on the northeast quadrant to improve intersection sight distance.
<i>Project Need</i>	Intersection sight-distance at Neshannock Road does not fully meet design requirements, and public comments expressed difficulties turning due to perceived travel speeds along US 62. This location was also highlighted by HSM methodologies as a potential area of interest to explore safety improvements.
<i>Other Alternative(s) Studied</i>	Low-cost Intersection treatments (short-term)
<i>Potential Challenges</i>	Accommodating multiple driveway connections along US 62, west of the intersection, and accounting for Amish buggy traffic that (based on anecdotal comments) crosses US 62 via Neshannock Road.







**Option 1:** Widen for 75' left-turn lanes and 540' taper to tie into existing

**Option 2:** Widen for 75' left-turn lane, plus 540' center turn lane in front of businesses, plus 540' taper to tie into existing.





## ALTERNATIVE D1: US 62 South (WB) Climbing Lane Adjustments to Zahniser Road

Opinion of Probable Cost	\$70,000
Timeframe	Short Term
Responsible Party	PennDOT
Project Partners	PennDOT, MCRPC
Funding Sources	STBG, State Hwy, HSIP, Maintenance Funds, Reserve Line Items (if applicable)

### Project Details

Project Location	US 62 South (WB), east of Zahniser Rd, at the top of the existing climbing lane
Project Description	Modify/relocate the end of the US 62 South (WB) climbing lane merge point
Project Purpose	To modify the climbing lane merge length to meet current standards, while also relocating the merge point to end prior to the horizontal curve approaching Zahniser Road and nearby driveways
Project Need	Intersection sight distance at Zahniser Road does not fully meet design requirements, while public comments and field observations noted that travel speeds and aggressive last-minute merging at the end of the US 62 South (WB) climbing lane complicate access for Zahniser Road, while also potentially affecting nearby driveways and school bus stops in the area.
Other Alternative(s) Studied	None
Potential Challenges	None







US 62 North (EB), looking east toward the end of the current climbing lane merge that coincides with the WB horizontal curve



US 62 South (WB) looking west toward the end of the existing climbing lane, prior to the WB horizontal curve



**ALTERNATIVE D2-D3:****US 62 / Valley  
Road Turn Lanes  
(With or Without  
Intersection  
Realignment)**

<b>Opinion of Probable Cost</b>	\$1,200,000 to \$2,600,000 <sup>(b)</sup>
<b>Timeframe</b>	Mid-term
<b>Responsible Party</b>	PennDOT
<b>Project Partners</b>	PennDOT, MCRPC
<b>Funding Sources</b>	STBG, State Hwy, HSIP, Reserve Line Items (if applicable)

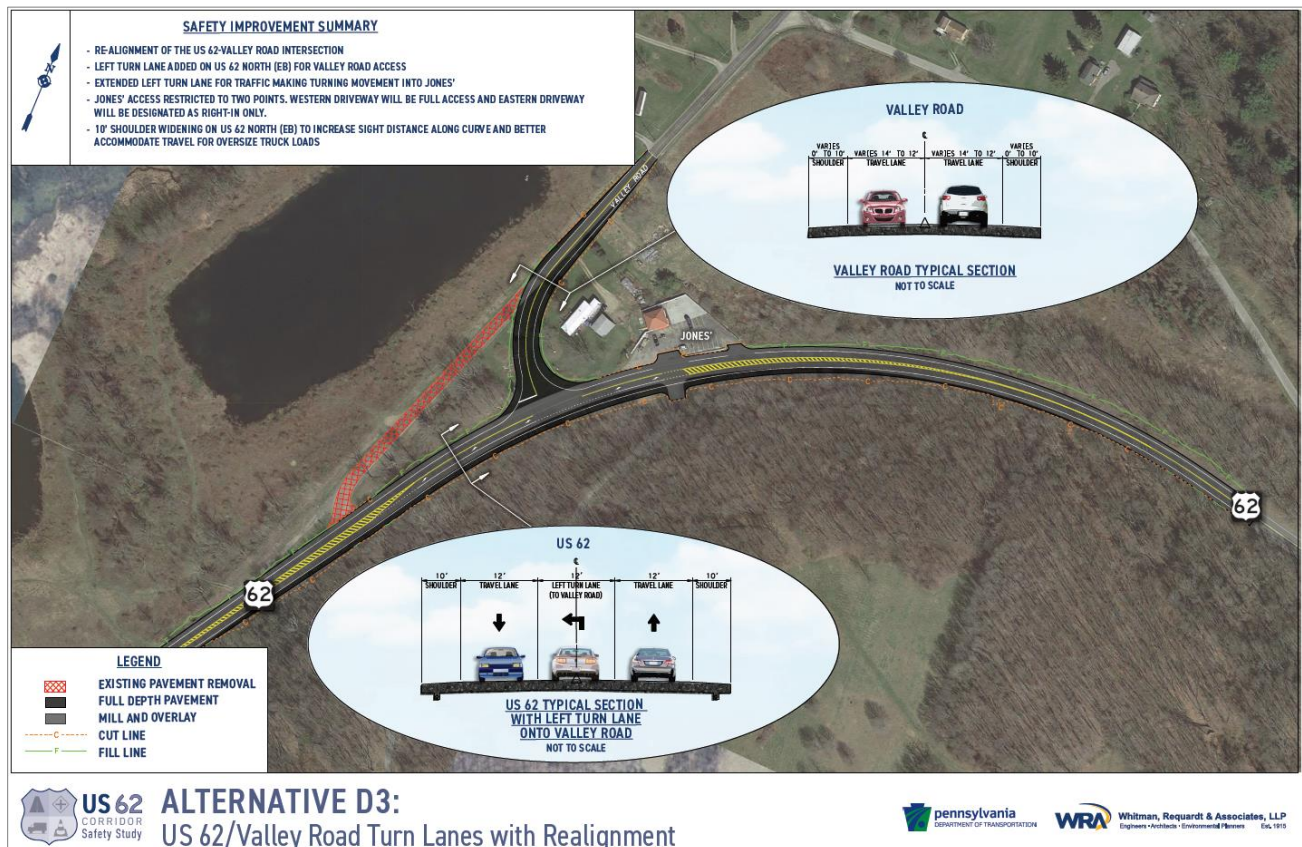
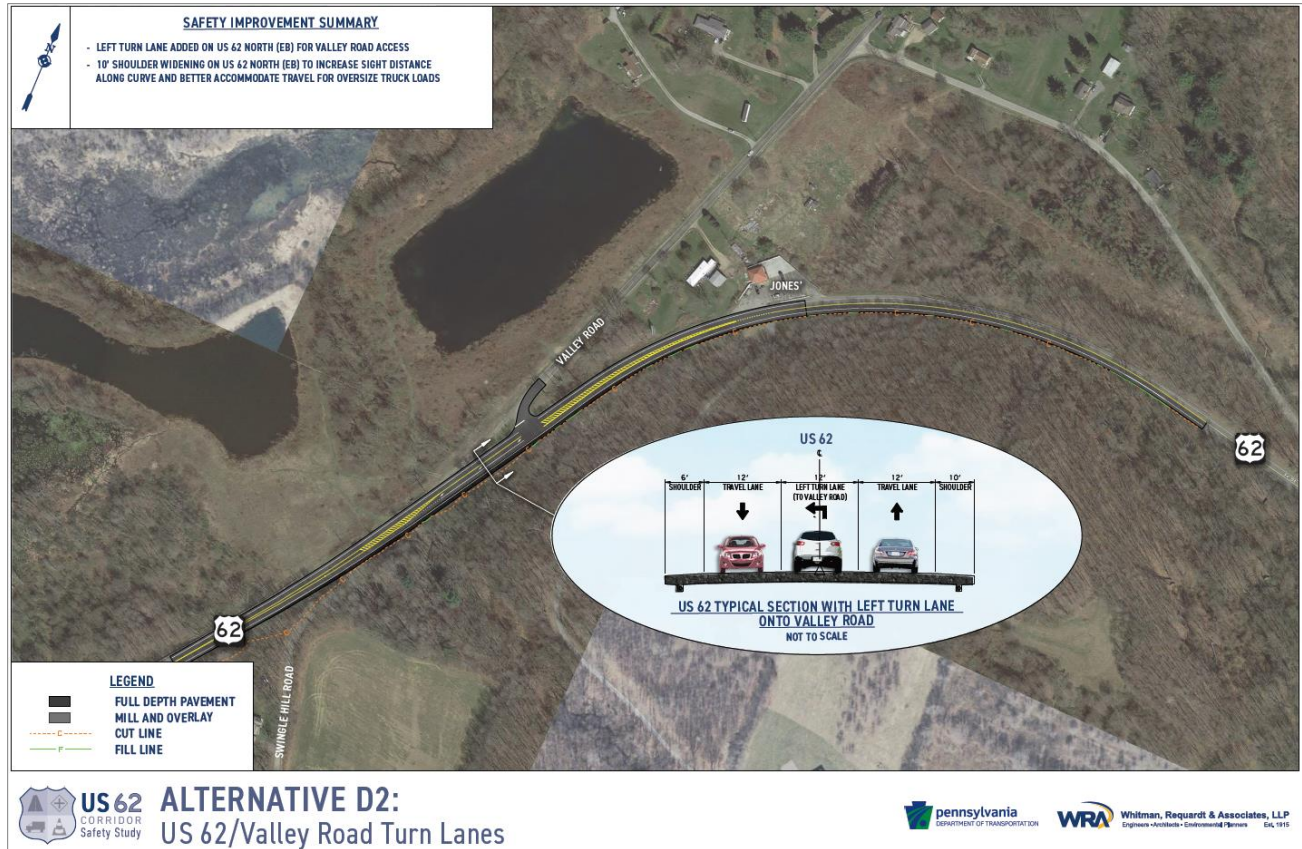
(b) See options with and without intersection realignment on next page

<b>Project Details</b>	
<i>Project Location</i>	US 62 at/near Valley Road (SR 3039)
<i>Project Description</i>	Widen US 62 from west of the Valley Road intersection to approximately Kyle Road (T 580) to install turn lanes and wider shoulder to enhance access and sight-distance through the horizontal curve section
<i>Project Purpose</i>	To provide a left-turn lane on US 62 North (EB) to enhance safety and operations for accessing Valley Road, to minimize queuing at Valley Road with respect to the crest vertical just to the west, and to widen shoulders on the horizontal curve to improve sight-distance and travel for oversize vehicles.
<i>Project Need</i>	Turn lane warrant criteria are satisfied at the Valley Road intersection where periodic queuing extends to the west to a point where the back-of-queue may be hidden by an adjacent crest vertical curve for motorists approaching along US 62 North (EB). Additionally, sight-distance and narrow shoulders along the horizontal curve east of Valley Road to Kyle Road can introduce difficulties for US 62 traffic, notably if/when wide-loads navigate the long curve and encroach on the opposing travel lane.
<i>Other Alternative(s) Studied</i>	Signalization (not warranted); turn-lane options with and without intersection realignment (see next page)
<i>Potential Challenges</i>	Cut slope along US 62; ROW acquisition where Valley Road is realigned.



Left-turn queue on US 62 North (EB) at Valley Road





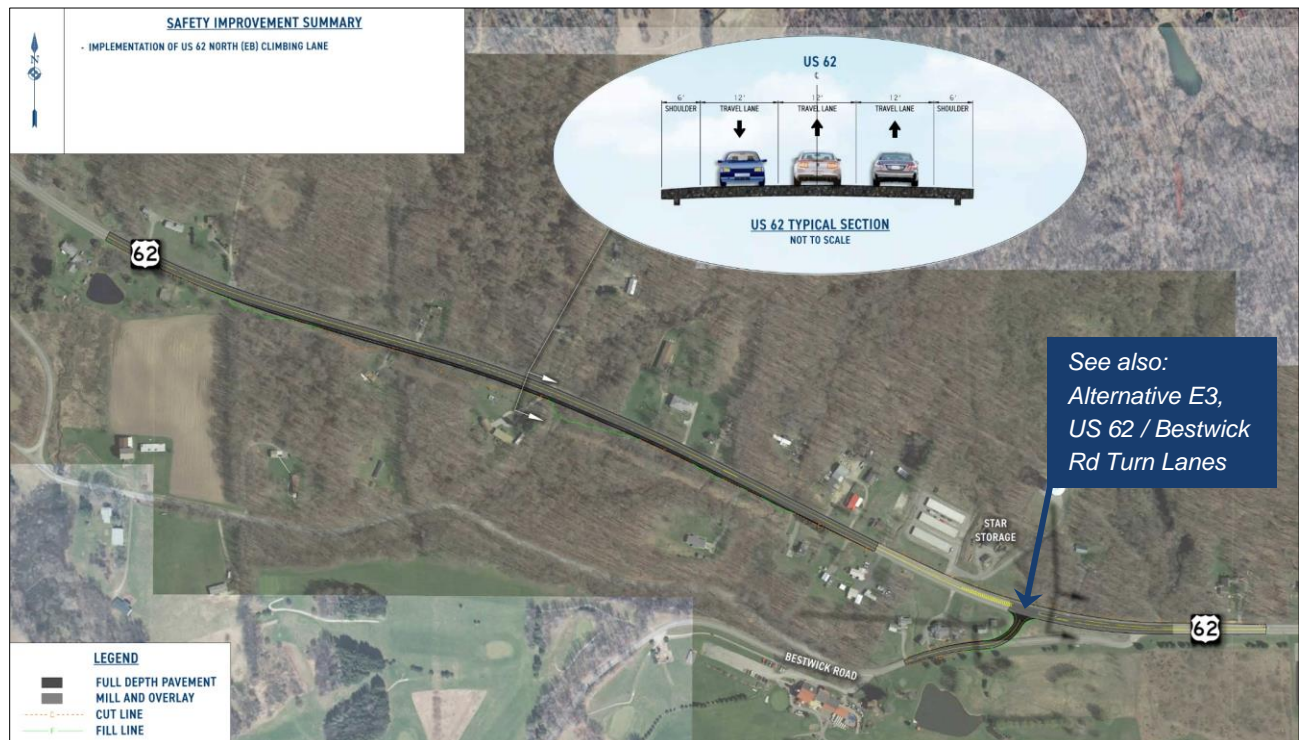


## ALTERNATIVE E2: US 62 North (EB) Climbing Lane to West of Bestwick Road

Opinion of Probable Cost	\$3,100,000
Timeframe	Long-term
Responsible Party	PennDOT
Project Partners	PennDOT, MCRPC
Funding Sources	STBG, State Hwy, HSIP, Reserve Line Items (if applicable)

### Project Details

Project Location	US 62 North (EB) along 9% grade from approximately Skyline Drive to Bestwick Road
Project Description	Widen US 62 to install an additional climbing/passing lane
Project Purpose	To provide an additional climbing/passing lane along US 62 North (EB) to enhance upgrade travel, operations, safety, and winter weather recovery area
Project Need	US 62 serves as the Blue Detour Route for emergency closures of I-80, and truck climbing lane warrants along this segment would be satisfied during periods of increased truck traffic when the detour is active. This segment was also highlighted by HSM methodologies as a potential area of interest to explore safety improvements, while specific crash trends and anecdotal comments note that winter conditions in this area contribute to safety and operational concerns, particularly with no current means to pass slow-moving or stranded/disabled vehicles, or to accommodate incident response.
Other Alternative(s) Studied	None
Potential Challenges	Cut/fill slopes; ROW acquisition; potentially complicated construction and/or notable work zone impacts during construction due to narrow section.







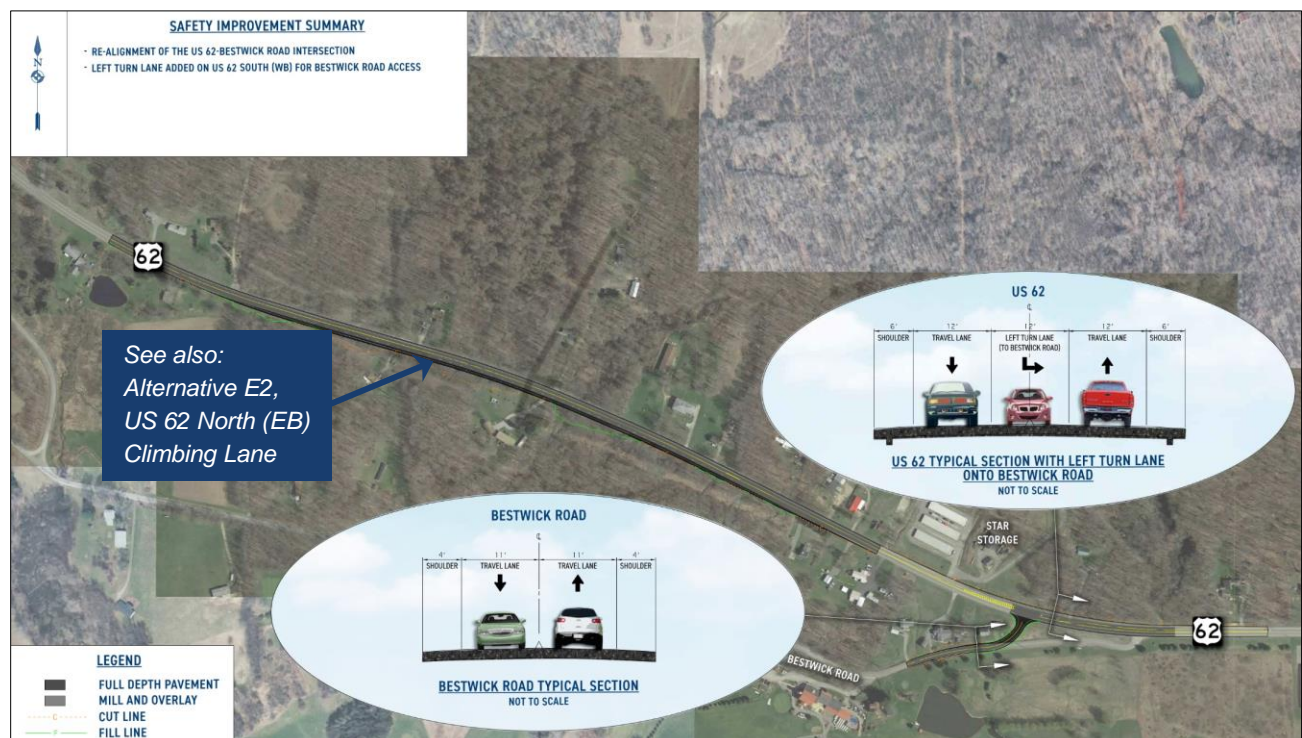


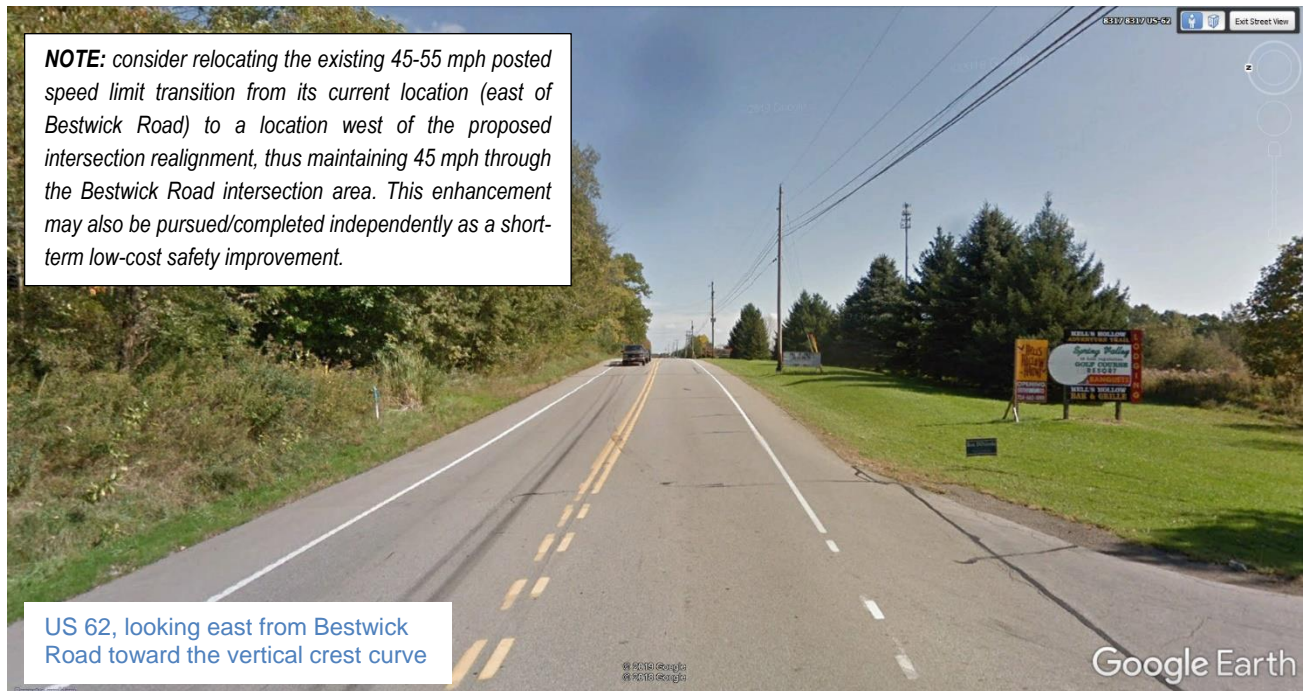
## ALTERNATIVE E3: US 62 / Bestwick Road Turn Lanes with Realignment

Opinion of Probable Cost	\$1,200,000
Timeframe	Mid to Long-term
Responsible Party	PennDOT
Project Partners	PennDOT, MCRPC
Funding Sources	STBG, State Hwy, HSIP, Reserve Line Items (if applicable)

### Project Details

Project Location	US 62 & Bestwick Road (SR 3026) intersection
Project Description	Realignment of the Bestwick Road intersection and widening along US 62 to accommodate the addition of a dedicated left-turn lane on US 62 South (WB); coupled with review and potential modification of the existing 45-55 mph speed limit boundary to shift the transition point to the west of the intersection.
Project Purpose	To realign/relocate the Bestwick Road intersection to maximize sight-distance and enhance safety through the intersection area
Project Need	Existing sight distance at Bestwick Road does not fully meet design requirements due to a vertical crest curve on US 62 to the east of the current intersection location
Other Alternative(s) Studied	Low-cost intersection treatments (short-term); lowering the US 62 profile to improve sight-distance
Potential Challenges	ROW acquisition





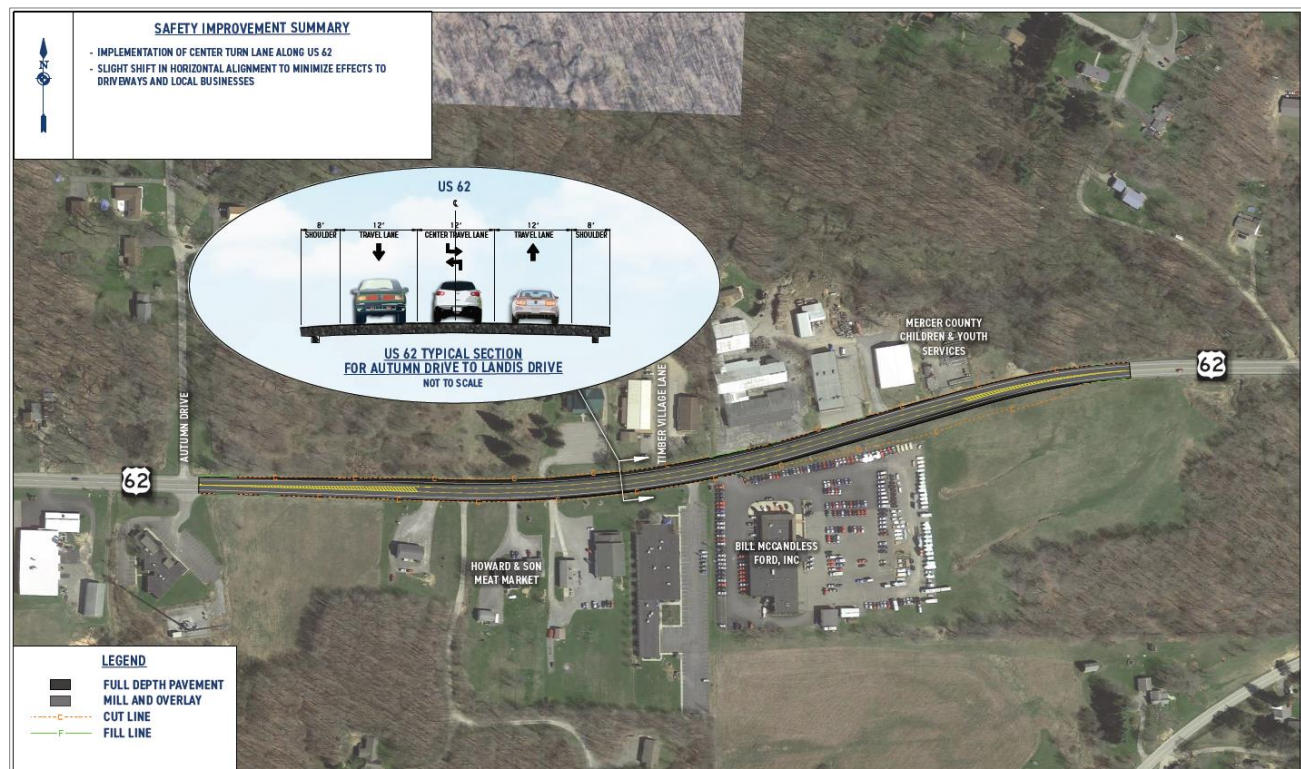


## ALTERNATIVE E4: US 62 / Center Turn Lane between Autumn & Landis Drives

Opinion of Probable Cost	\$2,500,000
Timeframe	Long-term
Responsible Party	PennDOT
Project Partners	PennDOT, MCRPC
Funding Sources	STBG, State Hwy, HSIP, Reserve Line Items (if applicable)

### Project Details

<i>Project Location</i>	US 62 between approximately Autumn Drive and Landis Drive
<i>Project Description</i>	Widening of US 62 to install a two-way left-turn lane (TWLTL)
<i>Project Purpose</i>	To provide a center turn lane along US 62 for enhanced safety and access through a commercial / business area with numerous driveways
<i>Project Need</i>	Numerous driveway connections and ingress/egress turns occur in this area for businesses near (and including) McCandless Ford. Steady traffic flows along US 62 can minimize gaps in traffic, while vehicles waiting to make left-turns do not have a dedicated area. Closely-spaced or open-cut driveways and periodic sun glare add to turning difficulties in this segment, and truck access (e.g. car carriers) may also be present.
<i>Other Alternative(s) Studied</i>	None
<i>Potential Challenges</i>	ROW acquisition and cut slope along McCandless Ford property



US 62, looking west near McCandless Ford Dealership



US 62, looking east near McCandless Ford Dealership



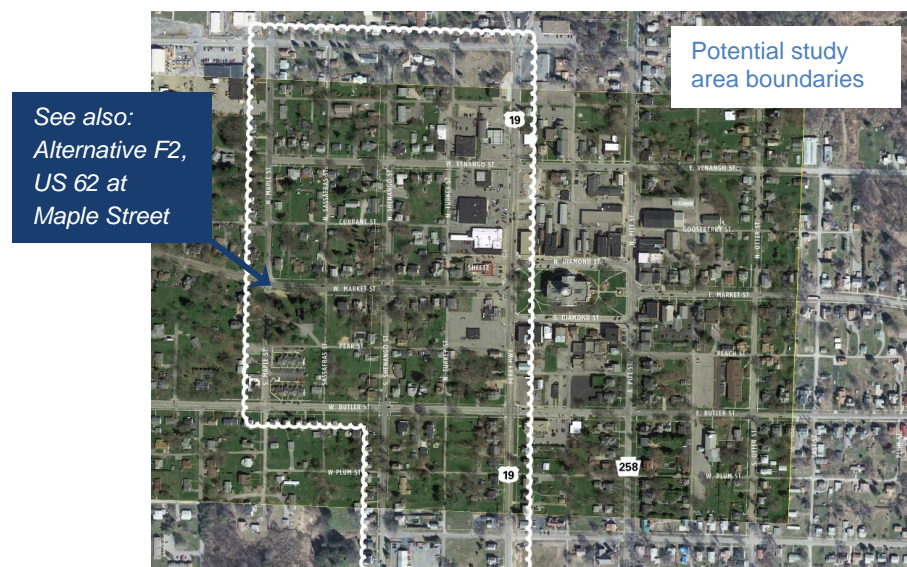


## ALTERNATIVE F1: Mercer Borough Circulation Study

<b>Opinion of Probable Cost</b>	\$25,000
<b>Timeframe</b>	Short-term
<b>Responsible Party</b>	PennDOT, Mercer Borough
<b>Project Partners</b>	PennDOT, MCRPC, Mercer Borough
<b>Funding Sources</b>	TA Set-Aside, PIB Loan, ARLE Grant, Liquid Fuels, Reserve Line Items (if applicable)

### Project Details

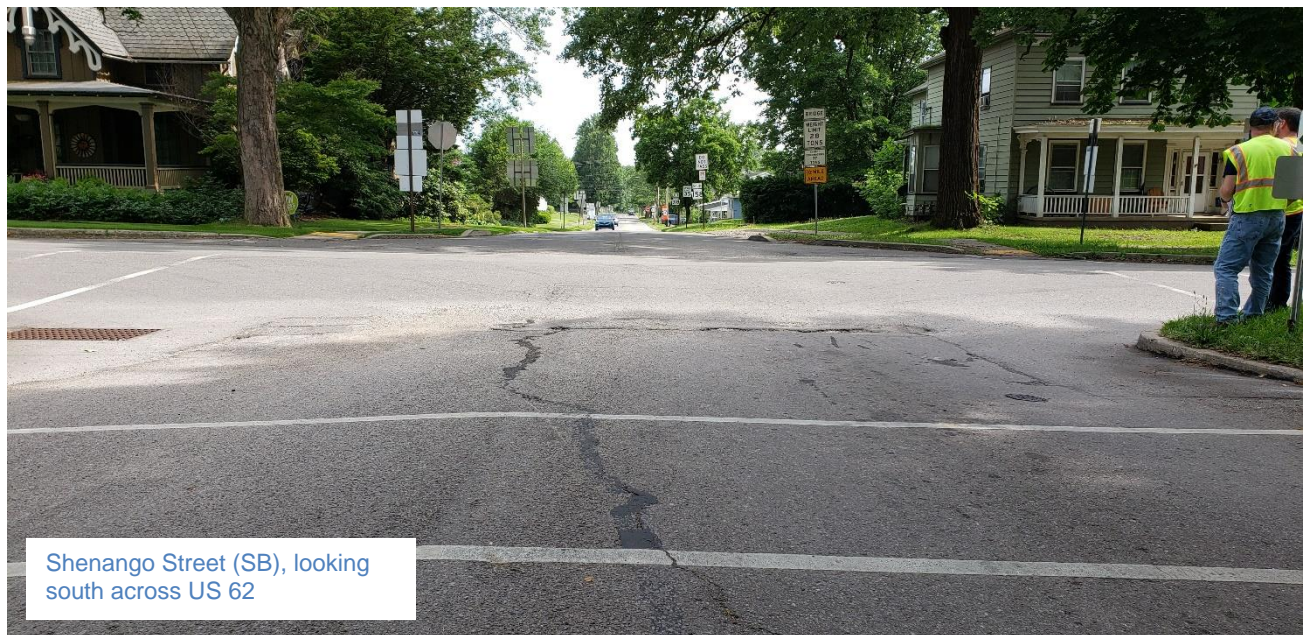
<i>Project Location</i>	Mercer Borough (areas west of US 19)
<i>Project Description</i>	A study of municipal traffic circulation patterns and potential options for modifying intersection access or one-way/two-way street operations, with special emphasis on improving safety and operations for US 62 and related travel/access via Shenango Street or Turkey Street.
<i>Project Purpose</i>	To explore additional options for mitigating congestion and enhancing safety along US 62 based on potential changes in traffic control at Maple Street (e.g. signal warrant confirmations), and potential turn restrictions or one-way conversions at Shenango Street and/or Turkey Street, while also assessing any local traffic diversions or additional improvements required to accommodate such changes.
<i>Project Need</i>	Public comments note that traffic operations, access, and safety concerns occur in the vicinity of US 62, Shenango Street, and Turkey Street, including school bus patterns and access difficulties crossing US 62 via Shenango Street and Maple Street. Additional data is required to assess local diversion or recirculation impacts of any proposed changes. The intersection of US 62 at Shenango Street was also highlighted by HSM methodologies as a potential area of interest to explore safety improvements.
<i>Other Alternative(s) Studied</i>	4-way stop control at US 62 / Shenango Street; signalization at US 62 / Shenango Street; splitter island and cross-traffic or right-in/right-out restrictions at US 62 / Shenango Street (additional area-wide study required); related options at US 62 / Maple Street (see <a href="#">Alternative F2</a> )
<i>Potential Challenges</i>	Localized access needs; school Bus routing; residential vs. commercial needs







US 62 South (WB), looking west  
toward Maple Street



Shenango Street (SB), looking  
south across US 62

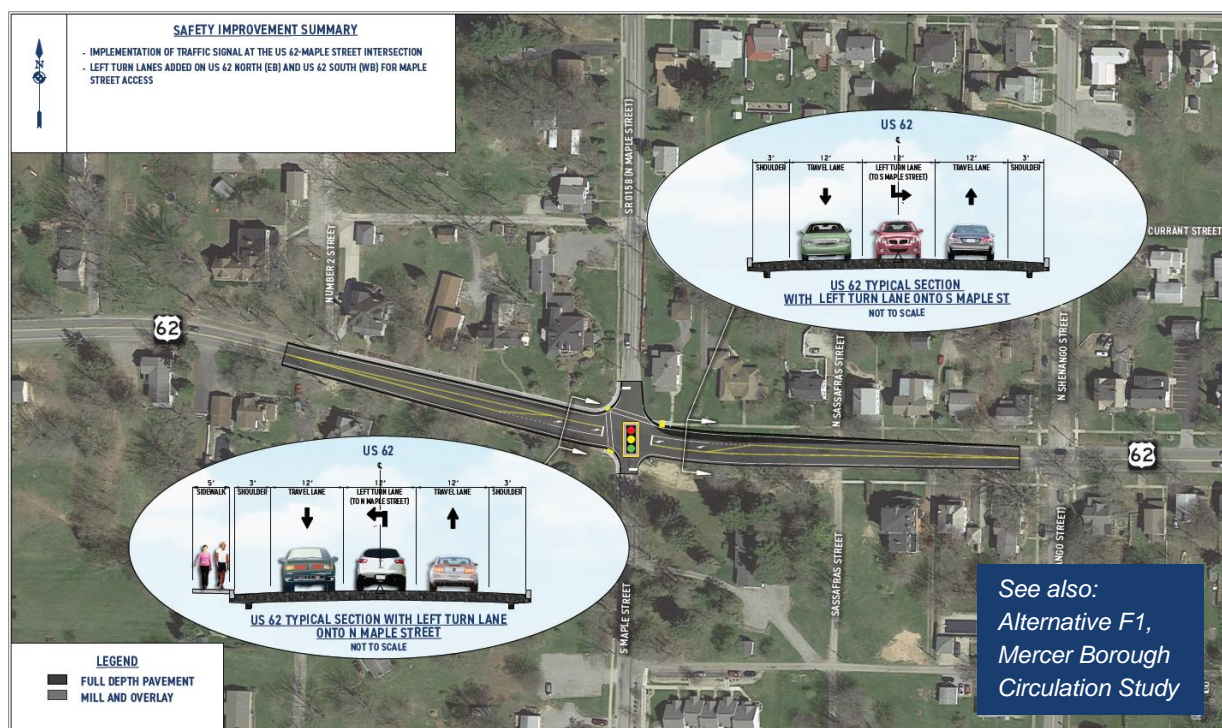


**ALTERNATIVE F2:****US 62 / Maple  
Street Traffic  
Signal with Turn  
Lanes**

<b>Opinion of Probable Cost</b>	\$1,700,000
<b>Timeframe</b>	Short term
<b>Responsible Party</b>	PennDOT, Mercer Borough
<b>Project Partners</b>	PennDOT, MCRPC, Mercer Borough
<b>Funding Sources</b>	STBG, State Hwy, HSIP, TA Set-Aside, STU, Liquid Fuels, PIB Loan, ARLE Grant, Reserve Line Items (if applicable)

**Project Details**

<i>Project Location</i>	US 62 & Maple Street (PA 258) Intersection
<i>Project Description</i>	Add a traffic signal and widen US 62 to add left-turn lanes in each direction at the Maple Street (PA 258) intersection
<i>Project Purpose</i>	To improve intersection operations and safety based on a review/confirmation of traffic signal warrants, finalization of traffic signal operations and required intersection lane configurations, and widening along US 62 to install dedicated turn lanes and a new traffic signal at the Maple Street intersection
<i>Project Need</i>	Limited traffic signal warrant criteria are marginally satisfied at this intersection (Warrant PA-1 / ADT Warrant). Public comments note congestion and safety concerns during peak periods, including access for school bus circulation. Potential changes at Shenango Street could increase traffic at Maple Street, contingent on the outcome of study efforts from Alternative F1.
<i>Other Alternative(s) Studied</i>	4-way stop control, roundabout construction; related options for Mercer Borough Circulation Study (see <a href="#">Alternative F1</a> )
<i>Potential Challenges</i>	ROW acquisition







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