

# Executive Summary

## Overview

The purpose of the Routes 39 & 743 corridor study is to address land use and transportation concerns presented to the Herbert, Rowland & Grubic, Inc. Project Team by the key stakeholder Steering Committee, Tri-County Regional Planning Commission, the public, and representatives of municipalities within the study area. The corridor study is driven by the need to accommodate the growth of the surrounding communities while maintaining safe and efficient mobility for all modes of transportation. The transportation and land use recommendations have been developed to accommodate the growth with consideration to the values and concerns provided by public and regional stakeholders. It is paramount that the local, county and state governmental organizations collaborate to adopt policies to properly plan for the future infrastructure needs and growth.

The public concerns primarily consisted of capacity and safety concerns, expressing a chief need for additional through lanes along portions of Route 39 to accommodate traffic volumes and alleviate congestion. Safety concerns were also noted, most scenarios involved poor or limited sight distance, problematic vertical and horizontal curves, poor access management, and lack of facilities to accommodate bicyclists and pedestrians. Additionally, areas of substantial congestion along the primary routes tend to divert traffic to the secondary routes. Typically, secondary routes within the study area are not intended for higher traffic volumes and travel speeds. The public has identified excessive speeding along Route 743, on secondary collector roadways, and in residential areas. With all public input surveyed, it is clear that there are significant safety, capacity, and connectivity issues throughout the corridor that need addressed while concurrently adopting future land use and transportation connectivity and improvement recommendations.

## Study Purpose and Limitations

- This 20-year plan focuses on the geometric intersection configurations while noting that actual future traffic patterns may deviate from the projections.
- This study was prepared with the fundamental goal of identifying anticipated future development and quantifying potential roadway widening that may be required to mitigate future traffic congestion. Potential mitigating strategies identified herein will be used for future consideration to preserve rights-of-way, identify locations for new or relocated utilities, and for long-range budgeting and funding procurement.
- The scope of the study was focused on identifying potential “Supply Side” infrastructure strategies, specifically “potential roadway infrastructure mitigations” as a planning tool to alleviate future traffic congestion associated with future potential development growth in the study area.
- Infrastructure Supply Side strategies are just one tool in planning for mitigating traffic congestion and should be considered in conjunction with “Demand Side” strategies, such as transit improvements, off-site parking/shuttle services, ride-share services, etc.

- Many of these “potential roadway infrastructure mitigations” generate concerns over right-of-way and potential environmental impacts. Each municipality should manage growth and evaluate alternative methods of accommodating the travel demand (i.e., manage development and/or applying “demand side” strategies).
- While this study is solely focused on “Supply Side” strategies, the Route 39/743 Transportation and Land Use Study is one of several planning tools available for the local municipalities and planning agencies to utilize in the future transportation project development process (Refer to Figure 1.1 below from PennDOT Design Manual 1).
  - In order for potential mitigation strategies identified in this report to be implemented, several additional planning and programming steps are necessary, especially for the larger, more impactful measures.
  - Planning partners including PennDOT and Tri-County Regional Planning Commission also identify potential transportation problems and evaluate alternative and mitigating measures. While the potential mitigating measure identified within this report would be considered, the exact improvements identified are unlikely to be realized verbatim.
  - During any project development process, the project planners will identify additional potential alternatives and determine appropriate improvements with respect to the transportation needs, environmental responsibility, property impacts, funding limitations, et cetera.

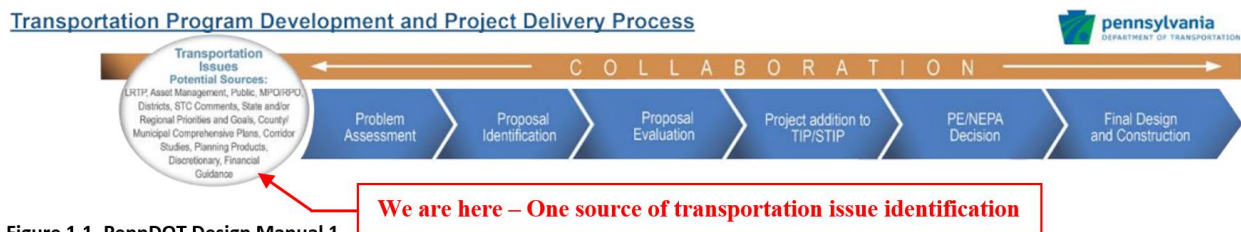


Figure 1.1, PennDOT Design Manual 1

## Project Objectives and Goals

Three primary study objectives were identified at the onset of the study:

- **Objective 1:** Identify capacity and/or safety needs and potential mitigating measures along the Route 39 and 743 corridors.
- **Objective 2:** Evaluate surrounding land uses and zoning and prepare recommendations to ensure future development does not compromise the integrity of the transportation network.
- **Objective 3:** Evaluate the surrounding secondary roadway network to determine opportunities for improvement to provide a cohesive roadway network, safely and efficiently supporting land uses within the corridor. Identify if an improved secondary roadway system would alleviate congestion and other concerns along the Route 39 and Route 743 corridors.

Through the community outreach and visioning process, the following goals were identified for the Route 39/743 Transportation and Land Use Study:

- Reduce congestion and delay
- Improve safety and efficiency
- Provide for multimodal activity, especially bicycles and pedestrians
- Improve access management by limiting unsignalized access points
- Improve secondary roadway system
- Improve interconnectivity
- Preserve the functionality and character of the Linglestown Village
- Effectively accommodate traffic between I-81 and Hershey
- Ongoing business activity
- Establish a consistent community theme
- Sustainable transportation recommendations to support growth
- Strategic implementation plan
- Ongoing collaboration between regional stakeholders

Route 39 and 743 Corridor study identifies land use and zoning recommendations, as well as roadway and multi-modal mobility improvements that can help mitigate congestion and various safety concerns. When coordinated with complementary land use and development decisions, transportation investments can improve the primary and secondary roadway networks and enhance mobility choices, and in turn, will promote increased economic prosperity and enhanced community life along Route 39 and 743 corridors.

### Corridor Overview

- ▶ The Route 39 corridor study area extends from Front Street in Susquehanna Township to the northern Derry Township line and through large portions of Lower Paxton, West Hanover, and South Hanover Townships. The Route 743 corridor study area extends within East Hanover Township from Derry Township to Route 443.
- ▶ Route 39 and Route 743 are classified as Minor Arterials per PennDOT's Federal functional class map; however, there are variable width lane configurations throughout the corridor.
  - Three (3) to five (5)-lane configuration from Front Street to Patton Road
  - Three (3) lanes from Patton Road to Linglestown Village
  - Two (2) lanes within Linglestown Village to the I-81 interchange area
  - Five (5) lanes through I-81 interchange area
  - Two (2) lanes from Jonestown Road to the Derry Township municipal boundary line, with some locations with a center turn lane

Due to the changing roadway and land use patterns along the Route 39 and Route 743 corridors, the roadways were segmented into eight "Character Areas" (See Map 1) and are generally summarized as follows:

<b>Table ES-1: Route 39 and 743 Corridors Character Area</b>			
<b>Character Area</b>	<b>Roadway Length</b>	<b>Location of Roadway</b>	<b>Municipality</b>
1	1.64	Front Street to Crooked Hill Road	Susquehanna Township
2	3.48	Crooked Hill Road to Colonial Club Drive	Susquehanna Township Lower Paxton Township
3	1.47	Colonial Club Drive to Wenrich Street	Lower Paxton Township
4	2	Wenrich Street to Houcks Contractor Driveway	Lower Paxton Township West Hanover Township
5	2.64	Houcks Contractor Driveway to Allentown Boulevard	West Hanover Township
6	4.02	Allentown Boulevard to Derry Township Line	West Hanover Township South Hanover Township
7	3.38	Swatara Creek / Derry Township Line to north of Colt Drive	East Hanover Township
8	2.69	North of Colt Drive to Mountain Road (Route 443)	East Hanover Township
<b>Total</b>	<b>21.33</b>		

- Character Areas 1 and 2 (western portion of the Route 39 corridor) are largely developed in Residential and Commercial Land Uses with pockets of infill development patterns. There are some development and redevelopment opportunities within these Character Areas.
- Character Areas 3 and 4 along the Route 39 corridor runs through the Village of Linglestown that provides the most pedestrian oriented portion of the corridor. This portion also has the lowest traffic volumes and travel speeds along Route 39.
- Character Area 5 along the Route 39 corridor has an interchange area with Interstate 81 and intersects Route 22 with typical highway commercial uses located within close proximity of them.
- Character Area 6 (Route 39, south of Route 22) services various small commercial and residential land uses.
- Character Area 7 (Route 743, south of Route 22) is largely undeveloped and contains mostly natural and agricultural landscapes. This area has higher travel speeds.
- Character Area 8 along Route 743 provides access to I-81, Route 22, and Hollywood Casino.

### Public Outreach

Public outreach included a multi-pronged approach, including interviews with municipal officials and stakeholders, a series of stakeholder meetings, public meetings, key focus group discussions, and questionnaires. Additional input was obtained via the Project StoryMap website

and project information on municipal websites. In addition to the ongoing interviews and discussions, the following key meetings were held to obtain public input and concerns within the study area corridor:

- Lower Paxton Township Town Hall Meeting – June 12, 2017
- Stray Winds Area Neighbors Meeting #1 – October 24, 2017
- Steering Committee Meeting #1 – December 11, 2017
- Dauphin County Commissioners Meeting #1 – May 9, 2018
- Focus Group Meeting – May 14, 2018
- Steering Committee Meeting #2 – May 30, 2018
- Public Meeting #1 – June 05, 2018
- HATS Bicycle & Pedestrian Meeting – June 26, 2018
- Hollywood Casino / Penn National Meeting – October 23, 2018
- Steering Committee Meeting #3 – October 30, 2018
- Public Meeting #2 – December 3, 2018
- Dauphin County Staff Meeting – January 29, 2019
- Stray Winds Area Neighbors Meeting #2 – March 4, 2019
- Dauphin County Commissioners Meeting #2 – July 24, 2019
- Tri-County Regional Planning Commissioners Meeting – July 25, 2019
- Route 39 Public Officials Meeting – September 18, 2019
- Capital Region Economic Development Corporation – November 11, 2019
- East Hanover Township Board Meeting – December 17, 2019
- Dauphin County Commissioners Meeting #3 – April 15, 2020
- Dauphin County and Tri-County Staff Meeting – February 22, 2021
- Dauphin County Commissioners Meeting #4 – October 13, 2021

On October 8, 2021, a draft of the final report was distributed to Tri-County Planning Commission, Dauphin County, and the five municipalities (Susquehanna, Lower Paxton, West Hanover, South Hanover and East Hanover Townships) for staff and elected official review. Comments received were then incorporated into the final draft report, which was submitted for public comment from January 12, 2022 through February 28, 2022.

### Potential Mitigation

To mitigate the projected traffic deficiencies and improve multimodal connectivity, potential roadway improvements and future land use planning should be considered to maintain acceptable traffic flow. However, due to evolving transportation issues and trends and their unknown effect on long range regional transportation planning, several items should be further considered prior to implementing the potential mitigation. These include:

- “Demand-side” strategies
- Long-term effects of COVID-19
- Mobile navigation applications
- Autonomous vehicles

- I-81 to PA Turnpike connection (East of Hershey)
- Environmental impacts
- Private property impacts
- Transit enhancements
- Significant variations from future land use assumptions

Land use projections and considerations are summarized in Table ES-2. Potential Improvements for Mitigation are identified in Table ES-3. Some of the more significant measures are summarized as follows:

- Character Area 1
  - “Supply Side” infrastructure strategies
    - Widen Route 39 (Route 322 to Crooked Hill Road) to provide 2 through lanes in each direction. Consider narrower travel lanes (10’ lanes).
    - Install a median that will preclude left turns except for signalized intersections; emphasize access management.
    - Provide bike lanes on both sides of the road and sidewalk along at least one side of the road.
  - Land Use Strategies
    - Character area is mostly developed; modest additional development can be mitigated.
    - Facilitate additional low to medium density residential development, discourage non-residential development.
      - Maintain low and medium density residential developments aligned with the existing neighborhoods. Encourage low-density neighborhoods that consist of single-family homes or a mix of single-family with attached residential such as townhomes or row homes.
      - Design neighborhoods with an interconnected street and pedestrian network and limit the use of cul-de-sac streets.
- Character Area 2
  - “Supply Side” infrastructure strategies
    - Widen Route 39 (Crooked Hill Road to Patton) to provide 2 through lanes in each direction and a center left turn lane.
    - Provide bike lanes on both sides of the road and sidewalk along at least one side of the road.
    - Consider extension of Continental Drive to connect neighborhoods north of Route 39.
    - Emphasize access management for new or redeveloped sites.
  - Land Use Strategies
    - Character Area is largely developed or under development. Modest additional commercial and residential development can be mitigated.
    - The town center area will help to promote a compact, walkable, mixed use, and transit-friendly development.
    - Provide pedestrian walkways through parking lots and between uses.

- Character Area 3
  - “Supply Side” infrastructure strategies
    - This area is a highlight of the corridor, with a successful intermingling of pedestrian, bicycle, and vehicular traffic.
    - Consider on-road markings for bicycle traffic.
  - Land Use Strategies
    - Encourage small business and supporting residential along the Route 39 frontage.
    - Significant development surrounding the corridor should be discouraged.
    - Connect all non-residential parking lots to reduce the amount of traffic along SR 0039.
    - To create more open space within new Village development a minimum of 20% needs to be set aside for open space with half of the total located within the middle of the development on a common green or landscaped median.
    - Village Center neighborhoods should have smaller lot sizes with buildings close to each other to promote walkability.
  
- Character Area 4
  - “Supply Side” infrastructure strategies
    - Discourage traffic-intensive development in this area as significant development would overburden the Linglestown Village area.
    - Provide a shared use path along one side of the road for pedestrian and bicycle use in this area.
  - Land Use Strategies
    - Intensive development of this character area should be discouraged.
    - Consider zoning changes for decreased development intensity.
  
- Character Area 5
  - “Supply Side” infrastructure strategies
    - Widen to provide a consistent center turn lane for the entire corridor.
    - Provide bike lanes in both directions of Route 39.
    - Provide continuous sidewalk on both sides of Route 39 within I-81 interchange area.
  - Land Use Strategies
    - Continued development within the interchange area can be supported - industrial uses and interchange service facilities.
    - Consolidate driveways to reduce the traffic conflicts off SR 0039; encourage abutting commercial property interconnections between parking areas.
  
- Character Area 6
  - “Supply Side” infrastructure strategies
    - Widen to provide a consistent center turn lane for the entire corridor.
    - Provide bike lanes along both sides of Route 39 north of Shetland Drive
    - Provide a continuous shared use path south of Shetland Drive
    - Consider a new roadway link from Red Top Road to Hayshed Road



- Land Use Strategies
  - Low to Medium Density Neighborhoods: Promote walkable low density neighborhoods that consist of single-family homes or a mix of single-family with attached residential such as townhomes.
  - Design neighborhoods with an interconnected street and pedestrian network and limit the use of cul-de-sac streets.
  - Consider location of industrial development in proximity to residential and environmental impacts to community
  
- Character Area 7
  - “Supply Side” infrastructure strategies
    - Intersections generally do not meet traffic signal warrants. Consider roundabouts at several locations to improve access from the side streets and calm traffic.
    - Manage vehicular speeds and truck traffic.
    - Consider a bypass from I-81 to Hershey and/or Pennsylvania Turnpike
  - Land Use Strategies
    - Character Area is largely undeveloped, with minimal development/market pressures anticipated within the 20-year projection.
    - Provide design flexibility to allow agriculture, conservation, and homes to be placed on a tract where they best meet community preservation goals.
    - Reduce road design standards that permit wide streets to save on road maintenance, promote rural lifestyle and improve stormwater management.
    - Internal trails and collector trails should be promoted through this character area to keep the rural lifestyle of the area.
  
- Character Area 8
  - “Supply Side” infrastructure strategies
    - Consider roundabouts at key intersections.
    - Provide pedestrian and bicycle connectivity.
    - Consider a bypass from I-81 to Hershey and/or Pennsylvania Turnpike
  - Land Use Strategies
    - Development opportunities without significant corridor impacts due to the proximity to the I-81 Interchange; encourage non-residential development.
    - Provide pedestrian and vehicular access to abutting residential properties to offer relief from having to access commercial properties only through Route 743



Table ES-2: Land Use Summary

Character Area	Municipalities	Percent Developed	20-Year Projections		Land Use Considerations
			Additional Housing Units	Non-Residential Development (SF)	
1	Susquehanna	93%	195	30,000	Mostly developed; with recommended zoning and transportation improvements, traffic impact from additional development can be mitigated. Suggested zoning changes to facilitate additional residential development and discourage non-residential development.
2	Susquehanna & Lower Paxton	92%	2,593	738,130	Mostly developed; with recommended zoning and transportation improvements, traffic impact from additional development can be mitigated. Suggested zoning changes to facilitate modest additional residential and commercial development.
3	Lower Paxton	88%	208	0	Mostly developed; modest opportunities for additional residential development. Significant development should be discouraged.
4	Lower Paxton & West Hanover	66%	353	0	Intensive development of this corridor should be discouraged due to traffic impacts within the Linglestown Village. Consider zoning changes for decreased development intensity.
5	West Hanover	54%	500	1,466,200	Development opportunities without significant corridor impact due to proximity to I-81 interchange. Suggested zoning changes to facilitate additional non-residential development.
6	West Hanover and South Hanover	65%	1,148	76,000	With recommended zoning and transportation improvements, traffic impact from additional development can be mitigated. Minor zoning changes recommended for consideration.
7	East Hanover	30%	3	0	Largely undeveloped; minimal development/market pressures anticipated within the 20-year projections. Minor zoning changes recommended for consideration.
8	East Hanover	73%	0	2,000,000	Development opportunities without significant corridor impact due to proximity to I-81 interchange. Suggested zoning changes to facilitate additional non-residential development.

**Table ES-3: Potential Transportation Improvements for Mitigation (Character Area 1)**

Location	Municipality	Improvement Type	Description	Cost Estimate	Prioritization
SR 0039 & Sixth Street	Susquehanna	Capacity	Install a traffic signal and restripe SR 0039 to provide a westbound left turn lane	\$250k - \$300k	Mid
SR 0039 & Industrial Road / Rt 322 EB Ramp	Susquehanna	Capacity	Add a northbound right turn lane on Industrial Road (currently under construction) Add a southbound right turn from the 322 eastbound ramp	\$200k - \$250k	Mid
SR 0039 - Route 322 to Fargreen Road	Susquehanna	Capacity/Safety	Implementation of frontage access roads to divert traffic from SR 0039	Redevelopment effort	Long
SR 0039 & Fargreen Road	Susquehanna	Capacity	Widen to add a second through lane in each direction	\$2M - \$2.5M	Long
SR 0039 & Deer Path Road	Susquehanna	Capacity	Widen to add a second through lane in each direction	\$1.5M - \$2M	Long
SR 0039 & Crooked Hill Road	Susquehanna	Capacity	Widen to add a second westbound through lane	\$750k - \$1M	Long
Front Street - SR 0039 to Parkway Road	Susquehanna	Pedestrian	Install sidewalk with grass buffer to the east to allow for pedestrian access to residence, hotel, and riverfront businesses	\$350k - \$450k	Short
SR 0039 - Front Street to Sixth Street	Susquehanna	Pedestrian	Install shared use path to provide connectivity to other pedestrian-friendly facilities	Currently under construction	Short
Sixth Street - Division St to SR 0039	Susquehanna	Bicycle	Install on-road markings/sharrows and signage for shared lane bicycle travel	\$25k - \$50k	Short
Industrial Road - SR 0039 to Wildwood Park	Susquehanna	Bicycle	Install shared use path from SR 0039 to Wildwood Park Provide crossing at Wildwood Park	Currently under construction	Short
SR 0039 - Industrial Road to Crooked Hill Road	Susquehanna	Bicycle	Install designated 5' bicycle lanes on both sides of the SR 0039	\$25k - \$50k	Short
SR 0039 - Rt 322 to Crooked Hill Road	Susquehanna	Pedestrian	Install sidewalk on the north side of SR 0039 to provide connectivity to residential neighborhoods, businesses, and Thomas W. Holtzman Elementary School	\$750k - \$1M	Mid
Crooked Hill Road	Susquehanna	Bicycle/Pedestrian	Install shoulder improvements to allow for a 5' minimum travel area for bicyclists where sight distance is limited Consider adjusting speed limit to allow for on-road sharrows in Susquehanna Provide connectivity to SR 0039, Paxton Church Road and Elmerton Avenue	\$50,000 - \$100,000 per curve	Long
SR 0039 & Front Street	Susquehanna	Access Management	Restrict northern driveway entrance to the Exxon/Uni-Mart along Front Street Restrict western driveway entrance along SR 0039	Property owner cost	Short
Industrial Road	Susquehanna	Safety	Improved highway lighting	\$10-\$20k	Mid
SR 0039 - US 22/322 Westbound to Eastbound Ramps	Susquehanna	Safety	Improved highway lighting	\$10-\$20k	Mid
SR 0039 - Crooked Hill to Blue Mountain Commons	Susquehanna	Access Management	Align driveways on the north and south sides of SR0039 to reduce potential conflicts	Ongoing thru redevelopment efforts	Long
SR 0039 - Route 322 to Crooked Hill Road	Susquehanna	Safety	Provide center boulevard median	Incorporated with other widening projects	Long

**Table ES-3: Potential Transportation Improvements for Mitigation (Character Area 2)**

Location	Municipality	Improvement Type	Description	Cost Estimate	Prioritization
SR 0039 & Progress Avenue	Susquehanna	Capacity	Construct a southbound right turn lane; Adjust right turn lanes to include continuous bike lanes through intersection; widen to extend westbound through lane from Sturbridge	\$1M - \$1.5M	Mid
SR 0039 & Progress Avenue	Susquehanna	Capacity	Construct improvements recommended by Susquehanna Union Green: add a second northbound left turn lane and a northbound right turn lane; install median along N Progress Avenue; extend dual eastbound through lanes to Sturbridge Drive	Developer costs; under construction	Short
SR 0039 & Sturbridge Drive	Susquehanna	Capacity	Plan for future access to the north side of the intersection Widen to provide dual thru lanes in each direction; maintain 250' eastbound right turn lane	\$1.5 - \$2M	Long
SR 0039 & Oakhurst Boulevard	Susquehanna	Capacity	Widen to add a second through lane in each direction	\$3M - \$3.5M	Long
SR 0039 & Crums Mill Road	Lower Paxton	Capacity	Install improvements recommended by Blue Ridge Village: construct 4th leg and signalize; construct northbound left turn lane and westbound right turn lane	Improvements recently constructed	Short
SR 0039 & Crums Mill Road	Lower Paxton	Capacity	Widen to add a second through lane in each direction	\$2M - \$2.5M	Long
SR 0039 & Versailles Road / Dover Road	Lower Paxton	Capacity	Widen to add a second through lane in each direction	\$1M - \$1.5M	Long
SR 0039 & Forest Hills Drive / Ringneck Drive	Lower Paxton	Capacity	Widen to add a second through lane in each direction	\$1.5 - \$2M	Long
SR 0039 & Colonial Road	Lower Paxton	Capacity	Construct a 275' northbound right turn lane Construct an additional eastbound and westbound through lane	\$3M - \$3.5M	Long
SR 0039 & Woodview / Patton Road	Lower Paxton	Capacity	Widen to provide a second westbound through lane	\$600k - \$800k	Long

SR 0039 - Entire Character Area 2	Lower Paxton	Bicycle	Install designated 5' bicycle lanes on both side of the Linglestown Road (SR 0039)	\$75k - \$100k	Long
SR 0039 - Crooked Hill Road to Patton Road	Lower Paxton	Pedestrian	Install sidewalk on both sides of the roadway to provide connectivity to other pedestrian-friendly facilities	\$4M - \$5M	Mid
Paxton Church Road - Crooked Hill Road to Crums Mill Road	Susquehanna	Bicycle	Install shoulder improvements to allow for a 5' minimum travel area for bicyclists; Provide connectivity to existing shared use paths installed for residential connectivity Provide necessary signage	\$3M - \$4M	Long
Progress Avenue - SR 0039 to I-81	Susquehanna	Bicycle	Install 5' designated bicycle lanes in the northbound and southbound directions	\$100k - \$125k	Mid
Progress Ave - SR 0039 to Paxton Church Road	Susquehanna	Pedestrian	Provide sidewalk on the east side of Progress Avenue	Partial developer funded; remaining \$500k - \$750k	Mid
Progress Ave - Paxton Church Road to Elmerton Avenue	Susquehanna	Pedestrian	Provide sidewalk on both sides of Progress Avenue	\$2.5M - \$3.5M	Long
Crums Mill Road - SR 0039 to Paxton Church Road	Lower Paxton	Bicycle	Construct shoulders to facilitate bicycles	\$1M - \$1.5M	Mid
Crums Mill Road - SR 0039 to Paxton Church Road	Lower Paxton	Pedestrian	Install sidewalk on east side of roadway for connectivity to residential developments and shared use paths at Stray Winds	\$750k - \$1M	Mid
Colonial Road - SR 0039 to Crums Mill	Lower Paxton	Bicycle	Install 5' designated bicycle lanes in the northbound and southbound directions	\$100k - \$125k	Mid
Colonial Road - just north of SR 0039	Lower Paxton	Pedestrian	Install missing gap of sidewalk on east side of roadway	\$100k - \$200k	Short
Colonial Road to Continental Drive	Lower Paxton	Bicycle	Provide on-road markings to allow bicyclists adequate connectivity to Linglestown Road (SR0039) from Continental Drive	\$10k - \$20k	Short
Colonial Road - SR 0039 to McIntosh Road	Lower Paxton	Pedestrian	Install sidewalk on west side of roadway for connectivity to residential developments and shared use paths at Stray Winds	\$750k - \$1M	Mid
McIntosh Road - near Colonial Road	Lower Paxton	Bicycle	Provide connectivity from recommended designated bicycle facilities along Colonial Road to the residential shared use paths	\$125k - \$175k	Short

**Table ES-3: Potential Transportation Improvements for Mitigation (Character Area 2)**

Location	Municipality	Improvement Type	Description	Cost Estimate	Prioritization
Patton Road - just north of SR 0039	Lower Paxton	Pedestrian	Install missing gap of sidewalk on both sides of roadway	\$500k - \$600k	Mid
SR 0039 at Fairway Lane	Lower Paxton	Bicycle	Widen right turn lane to provide bike lane between turn lane and through lane	\$75k - \$100k	Mid
SR 0039 - Patton Road to Blue Mountain Parkway	Lower Paxton	Pedestrian	Install sidewalk on portions of the north or south sides of SR 0039 to provide connectivity to Linglestown Village, residential developments, businesses, attractions/amenities	\$1M - \$1.5M	Mid

Progress Avenue & Paxton Church Road	Susquehanna	Safety	Improve vertical geometry at intersection and approaches to gain more sight distance for turning vehicles	\$2M - \$2.5M	Long
Crums Mill Road & McIntosh Road	Lower Paxton	Safety	Improve sight distance by clearing and grubbing; maintain regularly as needed	\$10k - \$25k	Short
Colonial Road SR 0039	Lower Paxton	Access Management	Modify driveway locations of 3B Ice Cream and Arooga's to reduce conflict points	\$200 - \$300k; or through redevelopment efforts	Mid
Continental Drive	Susquehanna	Safety	Install traffic calming measures to limit cut-through traffic and speeding	\$25k - \$200k	Short
Colonial Road to Continental Drive	Lower Paxton	Safety	Install traffic calming measures to reduce speeding	\$25k - \$200k	Short
Colonial Road & Sheetz driveway	Lower Paxton	Safety	Improve sight distance by clearing vegetation	\$10k - \$25k	Short
Colonial Road & Crestview Road	Lower Paxton	Safety	Improve sight distance by clearing vegetation and grading to the north on either side of the roadway Further improve sight distance with utility pole relocations	\$75k - \$100k	Mid
McIntosh Road	Lower Paxton	Safety	Install traffic calming measures to reduce speeding	\$25k - \$200k	Short
McIntosh Road & Colonial Road	Lower Paxton	Safety	Improve sight distance by clearing vegetation and grading to the north on either side of the roadway; Further improve sight distance by re-profiling Colonial Road to the north	\$1M - \$1.5M	Long

Continental Drive	Susquehanna / Lower Paxton	Other	Consider benefits of connectivity following additional residential development (Progress Avenue to Forest Hills Drive and Patton Road to Parkway West)	\$10M - \$12M	Long
Crums Mill Road	Lower Paxton	Other	Provide horizontal and vertical geometry improvements, shoulder improvements to improve sight distance around curves	Varies based on specific improvement locations	Long
Colonial Club Drive	Lower Paxton	Other	Provide horizontal and vertical geometry improvements, shoulder improvements to improve sight distance around curves	Varies based on specific improvement locations	Long
Doehne Road	Susquehanna/Lower Paxton	Other	Consider pavement improvements	\$200k - \$250k	Mid/Long

**Table ES-3: Potential Transportation Improvements for Mitigation (Character Area 3)**

Location	Municipality	Improvement Type	Description	Cost Estimate	Prioritization
SR 0039 & N Mountain Road	Lower Paxton	Capacity	Limit future land uses to limit traffic increases and preserve the functionality of the roundabouts	Policy	Long
SR 0039 - Linglestown Village	Lower Paxton	Bicycle	Implement on-road markings / sharrows and signing to direct bicyclists through the village and roundabouts	\$10k - \$15k	Short
Blue Mountain Parkway	Lower Paxton	Bicycle	Provide on-road markings to allow bicyclist adequate connectivity to/from Linglestown Road (SR0039) and off-road shared use path	\$5k - \$10k	Short
Blue Mountain Parkway - SR 0039 to St Thomas Blvd	Lower Paxton	Pedestrian	Install sidewalk along one side to connect residential development to SR 0039	\$300k - \$500k	Mid
N Mountain Road	Lower Paxton	Bicycle/Other	Install 5' designated bicycle lanes in the northbound and southbound direction from Linglestown Road (SR 0039) to north of I-81 ramps	\$75k - \$100k	Mid
Mountain Road - SR 0039 to I-81	Lower Paxton	Pedestrian	Install sidewalk along both sides of roadway	\$1.5M - \$2.5M	Long
Blue Ridge Ave - Mountain Road to Piketown Road	Lower Paxton	Pedestrian	Install sidewalk along one side of roadway	\$1.5M - 2M	Long
Blue Ridge Ave - Mountain Road to Piketown Road	Lower Paxton	Bicycle	Install on-road pavement markings / sharrows	\$20k - \$30k	Short
N Mountain Road & Blue Ridge Avenue	Lower Paxton	Safety	Improve sight distance by clearing vegetation and grading to the north and south; further improve sight distance with re-profiling of N Mountain Road to the south	\$600k - \$800k	Long
Wenrich Street	Lower Paxton	Other	Provide horizontal and vertical geometry improvements	Varies based on specific improvement locations	Long

**Table ES-3: Potential Transportation Improvements for Mitigation (Character Area 4)**

Location	Municipality	Improvement Type	Description	Cost Estimate	Prioritization
SR 0039 - Balthaser St to Wenrich St	Lower Paxton	Pedestrian	Install sidewalk on one side of SR 0039	\$500k - \$750k	Mid
SR 0039 - Balthaser St to Wenrich St	Lower Paxton	Bicycle	Install on-road markings/sharrows and signage for shared lane bicycle travel	\$5k - \$10k	Short
SR 0039 - Wenrich St to Piketown Road	Lower Paxton	Bicycle / Pedestrian	Install Shared Use Path along one side of roadway	\$1.5 - \$2M	Mid
Piketown Road - Central Dauphin High School to Blue Ridge Ave	Lower Paxton	Pedestrian	Install sidewalk on east side of roadway for connectivity to residential developments, Central Dauphin High School and shared use paths along SR 0039	\$500k - \$750k	Mid
Piketown Road	West Hanover	Bicycle	Provide on-road markings and signage to allow bicyclists adequate connectivity from Blue Ridge Avenue and Jonestown Road; widen shoulders where sight distance is limited	\$20 - \$30k	Short
SR 0039 - Walnut Ave to Royal Terrace	West Hanover	Pedestrian	Install sidewalk on south side of SR 0039 for connectivity to residential developments from Central Dauphin High School and shared use paths	\$400k - \$600k	Mid
SR 0039 - Walnut Ave to Manor Drive	West Hanover	Bicycle	Install shoulder improvements to allow for a 5' bike lane	\$750k - \$1M	Long
SR 0039 - Manor Drive to Quality Circle	West Hanover	Bicycle	Install shoulder improvements to allow for a 5' bike lane	\$1.5 - \$2M	Long
Blue Ridge Avenue & Wenrich Street	Lower Paxton	Safety	Improve sight distance by clearing vegetation and grading to the west	\$50k - \$75k	Mid

**Table ES-3: Potential Transportation Improvements for Mitigation (Character Area 5)**

Location	Municipality	Improvement Type	Description	Cost Estimate	Prioritization
SR 0039 - Jonestown Road to Allentown Boulevard	West Hanover	Safety/ Capacity	Construct a center left turn lane	\$800k - \$1M	Long
SR 0039 - Entire Character Area 5	West Hanover	Bicycle	Install designated 5' bicycle lanes on both sides of the Linglestown Road (SR 0039)	\$200k - \$250k	Long
SR 0039 - Jonestown Road to Manor Drive (SE)	West Hanover	Pedestrian	Install sidewalk (where missing) on both sides of Linglestown Road/Hershey Road (SR 0039) to provide connectivity	\$2.5M - \$3.5M	Long
Jonestown Road - Allentown Blvd to Sand Beach Road	East / West Hanover	Bicycle	Install on-road pavement markings / sharrows to allow connectivity from Allentown Boulevard and Blue Ridge Avenue to SR 0039, Horseshoe Trail, Sand Beach Road and Lebanon County	\$50k - \$75k	Short
Allentown Boulevard - Jonestown Road to Sand Beach Road	East / West Hanover	Bicycle	Install 5' designated bicycle lanes in both directions	\$120k - \$150k	Mid
SR 0039 - north of Allentown Boulevard	West Hanover	Safety	Improve roadway lighting along the residential neighborhood frontage along Hershey Road	\$75k - \$100k	Mid
SR 0039 - N Fairville Ave to Jonestown Road	West Hanover	Safety	Access Management	Redevelopment effort	Mid
Mill Road & Allentown Boulevard	East Hanover	Safety	Improve sight distance by grading and clearing vegetation	\$75k - \$100k	Mid



**Table ES-3: Potential Transportation Improvements for Mitigation (Character Area 6)**

Location	Municipality	Improvement Type	Description	Cost Estimate	Prioritization
SR 0039 & Manor Drive (SE)	West Hanover	Capacity	Install improvements as required by the Fowler Development, including signalization, left turn lanes along SR 0039 and a northbound right turn lane along SR 0039	Developer costs	Long
SR 0039 - Manor Drive (SE) to Shetland Drive	West / South Hanover	Capacity/Safety	Provide center left turn lane	\$5M - \$6M	Mid
SR 0039 & Devonshire Heights Road	West Hanover	Capacity	Install a traffic signal when warranted	\$100k - \$150k	Mid
SR 0039 & Red Top Road	West Hanover	Capacity	Install a traffic signal when warranted (unless Hayshed is extended)	\$300 - \$350k	Mid
SR 0039 & Grandview Drive	South Hanover	Capacity	Install a southbound right turn lane (250' length) Install an eastbound right turn lane (150' length, 50' bay taper)	\$500k - \$750k	Mid
SR 0039 & East Canal Street	South Hanover	Capacity	Install a traffic signal when warranted	\$300 - \$350k	Mid
E Canal Street	South Hanover	Capacity	Bridge Improvement; Overall Condition rating poor	To be determined	Long
SR 0039 - Allentown Blvd to Shetland Drive	West / South Hanover	Bicycle/Pedestrian	Widen to provide five foot bike lane along both sides of SR 0039	\$3M - \$4M	Long
Manor Drive - Allentown Blvd to SR 0039 (SE)	West Hanover	Pedestrian	Install sidewalk on one side of the roadway to provide connectivity from Allentown Boulevard to Hershey Road (SR 0039)	\$750k - \$1M	Long
Red Top Road	West / South Hanover	Bicycle	Widen shoulders for bicyclists where sight distance is limited	\$50,000 - \$100,000 per curve	Long
SR 0039 - Hanshue Road to Hanover Street	South Hanover	Pedestrian	Install off-road shared-use paths on the west side of Route 39 from Hanshue Road to Grandview Drive and on the east side of Route 39 from Patriot Way to Hanover Street to provide connectivity along the route within the township	West side: \$750k - \$1M East side: \$400k - \$600k	Long
Grandview Drive	South Hanover	Bicycle	Provide on-road markings to allow bicyclists adequate connectivity from SR 0039 to Hoernerstown Road, Swatara Creek Trail, and Hummelstown	\$75k - \$100k	Short
Grandview Drive	South Hanover	Pedestrian	Install sidewalk on north/east side of roadway for connectivity to residential developments Evaluate the opportunity to install a walking trail/sidewalk along Grandview Drive to tie into Hummelstown	\$500k - \$750k	Mid
SR 0039 - Swatara Creek Bridge	South Hanover/ Derry	Bicycle/Safety	Widen and raise SR 0039 Bridge over Swatara Creek to prevent flooding; provide 5' bike lane for connectivity with Derry Township	To be determined	Long
Oak Grove Road/ S Hoernerstown Road	West / South Hanover	Safety	Install traffic calming measures	\$25k - \$200k	Short
SR 0039 & Devonshire Heights Road	West Hanover	Safety	Improve sight distance with clearing and grubbing and potential sight line obstruction improvement; re-profile SR 0039 in both directions to further improve sight distance	\$1M - \$1.5M	Long
Red Top Road	West / South Hanover	Safety	Improve roadway geometry	Varies based on specific improvement locations	Long
SR 0039 & Orchard Road	West Hanover	Safety	Improve sight distance looking north by realigning roadway or removing structure and regrading. Intersection radius improvements for better truck access	\$350k - \$500k	Long
Grandview Dr & Union Deposit Rd	South Hanover	Safety	Improve sight distance with grading and clearing vegetation	\$10k - \$25k	Short
Grandview Dr & Union Deposit Rd	South Hanover	Safety	Consider removal of the wall to increase roadway width	\$300k - \$500k	Mid
SR 0039 & North Hanover Street	South Hanover	Safety	Remove channelization and add a southbound right turn lane to slow traffic from Route 39 onto North Hanover Street	\$250k - \$350k	Short
Orchard Road	West / South Hanover	Connectivity	Study benefits of an additional access to businesses and residence along Orchard Hill Road Consider extending Orchard Road to Sand Beach Road or connecting Orchard Road to Shetland Drive	Extending to Sand Beach Road: \$3.5M - \$4M Connecting to Shetland Drive: \$2.5M - \$3M	Long
Hayshed Road	South Hanover	Connectivity	Extend Hayshed Road from SR 0039 to Red Top Road to provide better connectivity to surrounding residential areas	\$3M - \$4M	Long

**Table ES-3: Potential Transportation Improvements for Mitigation (Character Area 7)**

Location	Municipality	Improvement Type	Description	Cost Estimate	Prioritization
SR 0743 and Colt Drive	East Hanover	Safety/Capacity	Install Roundabout for side-street capacity and speed control	\$1.5M - \$2M	Long
SR 0743 and Dairy Lane	East Hanover	Safety/Capacity	Install Roundabout for side-street capacity and speed control	\$1.5M - \$2M	Long
SR 0743 and Earlys Mill Road	East Hanover	Safety/Capacity	Install Roundabout for side-street capacity and speed control	\$1.5M - \$2M	Long
SR 0743 and East Canal Road	East Hanover	Safety/Capacity	Install Roundabout for side-street capacity and speed control	\$1.5M - \$2M	Long
Sand Beach Road (Meadow Lane to Derry Twp line)	East / South Hanover	Bicycle	Install on-road bicycle facilities including signage and pavement markings *	\$3,500 *	Short
Sand Beach Road	East /South Hanover	Bicycle	Install shoulder improvements where sight distance is limited to allow for a 5' minimum travel area for bicyclists; Provide connectivity to existing shared use paths installed for residential connectivity Provide necessary signage	Varies based on specific improvement locations	Long
E Canal Road	East Hanover	Bicycle	Install on-road bicycle facilities including signage and pavement markings *	\$3,500 *	Mid
Pine Road	East Hanover	Bicycle	Install on-road bicycle facilities including signage and pavement markings *	\$2,500 *	Mid
Devonshire Heights Road	East / South Hanover	Bicycle	Install on-road bicycle facilities including signage and pavement markings *	\$2,000 *	Long
Earlys Mill Road	East Hanover	Bicycle	Install on-road bicycle facilities including signage and pavement markings *	\$5,200 *	Long
Trail Road	East Hanover	Bicycle	Install on-road bicycle facilities including signage and pavement markings *	\$3,000 *	Mid
S Meadow Lane / Pheasant Road (Sand Beach Rd to Earlys Mill Rd)	East Hanover	Bicycle/Pedestrian	Install shared use path *	\$141,267 *	Long
Pheasant Road / S Meadow Lane (Sand Beach Road to Bow Creek)	East Hanover	Bicycle	Install on-road bicycle facilities including signage and pavement markings *	\$2,000 *	Mid/Long
Jonestown Road (between N Hill Drive and Bow Creek Road)	East Hanover	Pedestrian	Install off-road pedestrian walkway/path *	\$438,950 *	Long
Jonestwon Road (Crawford Rd to Bow Creek Trail)	East Hanover	Bicycle/Pedestrian	Install shared use path *	\$379,120 *	Long
Manad Golf Course Trail	East Hanover	Bicycle/Pedestrian	Install shared use path *	\$126,668 *	Long
I-81 Trail	East Hanover	Bicycle/Pedestrian	Install shared use path *	\$1,121,250 *	Long
Bow Creek Trail	East Hanover	Bicycle/Pedestrian	Install shared use path *	\$2,933,000 *	Long
Community Park Loop Trail	East Hanover	Bicycle/Pedestrian	Install shared use path *	\$756,370 *	Long
Community Park / Sand Beach Trail	East Hanover	Bicycle/Pedestrian	Install shared use path *	\$414,860 *	Long
Union Canal Trail	East Hanover	Bicycle/Pedestrian	Install shared use path *	\$81,830 *	Long
West Hanover Connector Trail	East / West Hanover	Bicycle/Pedestrian	Install shared use path *	\$64,944 *	Long
SR 0743	East Hanover	Safety	Evaluate establishment of a Highway Safety Corridor, if warranted	\$10k - \$20k	Short
SR 0743	East Hanover	Safety	Evaluate traffic signing and calming enhancements - warning signs, conspicuity plaques, etc.	\$20-\$25k	Short
SR 0743 and Earlys Mill Road	East Hanover	Safety	Install overhead flashing yellow lights on SR 0743 approaches	\$75k - \$100k	Mid
Sand Beach Road	East Hanover	Safety	Evaluate traffic signing and calming enhancements - warning signs, conspicuity plaques, etc.	\$20-\$25k	Short
Sand Beach Road	East / South Hanover	Safety	Install traffic calming measures and consider re-grading and including shoulder improvements to improve sight distance around curves	Varies based on specific improvement locations	Mid/Long
Sand Beach Road & E Canal Road	South Hanover	Safety	Improve sight distance at stop sign, looking north (right); Clearing vegetation	\$45k - \$60k	Short
Sand Beach Road (between Crooked Hill Rd and Earlys Mill Rd)	East Hanover	Safety	Provide high-friction pavement and improved signing / striping for horizontal curves	\$60k - \$80k	Mid

**Table ES-3: Potential Transportation Improvements for Mitigation (Character Area 7)**

Location	Municipality	Improvement Type	Description	Cost Estimate	Prioritization
Sand Beach Road - Near Winfindale	East Hanover	Safety	Provide high-friction pavement and improved signing / striping for horizontal curves	\$40k - \$50k	Mid
Sand Beach Road & Meadow Lane	East Hanover	Safety	Improve sight distance with grading and clearing vegetation to the north and roadway realignment or removal of structure	To Be Determined	Long
SR 0743 & E Canal Road	East Hanover	Safety	Improve sight distance by grading	\$10k - \$20k	Short
SR 0743 (between Shady Ln and Pine Rd)	East Hanover	Safety	Provide high-friction pavement and improved signing / striping for horizontal curves	\$40k - \$50k	Mid
SR 0743 & Earlys Mill	East Hanover	Safety	Improve sight distance by grading and clearing vegetation	\$600k - \$800k	Mid
SR 0743 & Dairy Lane	East Hanover	Safety	Improve sight distance by grading	\$10k - \$20k	Mid
SR 0743 & S Meadow Lane	East Hanover	Safety	Improve sight distance looking north; sight line obstruction by residential house and fence. Relocate roadway or remove structure	\$350k - \$450k	Long
SR 0743 & Colt Drive	East Hanover	Safety	Improve roadway geometry by re-profiling Sight distance may be improved with reprofiling; if necessary grade and clear vegetation	\$250k - \$400k	Long
Bow Creek Road (SR 0743) & Allentown Boulevard	East Hanover	Safety/Access Management	Relocate Sheetz access points further from signal, if feasible; improve intersection radii to accommodate turning trucks	\$75k - \$100k	Mid

**Table ES-3: Potential Transportation Improvements for Mitigation (Character Area 8)**

Location	Municipality	Improvement Type	Description	Cost Estimate	Prioritization
Bow Creek Road and Fox Run Road	East Hanover	Safety/Capacity	Install Roundabout for side-street capacity and speed control	\$1.5M - \$2M	Long
SR 0022 and Sandbeach Road	East Hanover	Safety/Capacity	Install Roundabout	\$2.5M - \$3M	Long
SR 0743/Bow Creek Rd (Jonestown Road to I-81)	East Hanover	Safety	Add a center left turn lane along Bow Creek Road	\$2M - \$3M; likely developer costs	Mid
SR 0743 and Route 22	East Hanover	Safety	Consider northbound/southbound left turn phasing	\$10k - \$15k	Short
SR 0743 and Farmer's Market	East Hanover	Safety	Add a southbound left turn lane along SR 743	\$450k - \$600k	Mid
Bow Creek Road (Jonestown Road to Bow Creek residential development)	East Hanover	Bicycle/Pedestrian	Install shared use path *	\$364,540 *	Mid
Bow Creek Road (Mountain Road to I-81)	East Hanover	Bicycle/Pedestrian	Install shared use path *	\$758,550 *	Long
Fox Run Road	East Hanover	Bicycle/Pedestrian	Install shared use path *	\$199,600 *	Long
Allentown Boulevard (Route 22)	East Hanover	Bicycle	Install designated buffered bicycle lanes *	\$205,277 *	Mid
Jonestown Road (Bow Creek Road to Lebanon County Line)	East Hanover	Pedestrian	Install sidewalk *	\$331,010 *	Mid
Jonestown Road (West Hanover Twp to Crawford Rd)	East Hanover	Bicycle	Install on-road bicycle facilities including signage and pavement markings *	\$2,500 *	Short
Shells Church Road/Sand Beach Road (Allentown Blvd to Dry Run Rd)	East Hanover	Pedestrian	Install sidewalk *	\$157,510 *	Mid
Dry Run Road / Station Road	East Hanover	Bicycle	Install on-road bicycle facilities including signage and pavement markings *	\$2,500 *	Long
Manada Gap Road	East Hanover	Bicycle	Install on-road bicycle facilities including signage and pavement markings *	\$2,000 *	Short
Cliff Road / Rabbit Lane	East Hanover	Pedestrian	Install off-road pedestrian walkway/path *	\$176,030 *	Mid
Manada Bottom Road	East Hanover	Bicycle	Install on-road bicycle facilities including signage and pavement markings *	\$4,500 *	Mid
Firehouse Road (I-81 to Jonestown Road)	East Hanover	Bicycle/Pedestrian	Install on-road bicycle facilities including signage and pavement markings, and off-road pedestrian walkway/path *	\$500 *	Mid
Firehouse Road (Mountain Rd to I-81)	East Hanover	Bicycle/Pedestrian	Install shared use path *	\$430,650 *	Long
Mountain Road (Route 443)	East Hanover	Bicycle	Install on-road bicycle facilities including signage and pavement markings *	\$5,500 *	Short
Mountain Road (Route 443) - Bow Creek Road to Firehouse Road	East Hanover	Pedestrian	Install off-road pedestrian walkway/path *	\$348,150 *	Mid

\* Per East Hanover Township Trail & Greenway Master Plan