Acknowledgments

The preparation of the Lovettsville Transportation Master Plan was a collaborative effort involving residents, Town staff, and Town officials.

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- David Steadman, Vice Mayor
- Christopher Hornbaker
- Renee Edmonston
- Buchanan Smith
- David Earl
- Joy Pritz

**Planning Commission**
- Greg Ratner, Chair
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Executive Summary

The Town of Lovettsville Comprehensive Plan sets policy guidance on land and infrastructure development. The Transportation Master Plan (TMP) is a volume of that document, forming the policy foundation for local standards, regulations, capital improvements, and development proposals.

Input from Lovettsville residents led the TMP process, which spanned 12 months. Residents and stakeholders provided ideas, concerns, and visions for the Town’s transportation system through various means. Engagement involved a project kickoff meeting, an online survey, and phone interviews. Altogether, over 160 residents contributed to the development of the plan. Working with the Planning Commission, the project team used the community input to develop the six goals, 22 objectives, and 20 projects that underpin the plan.

The plan includes a list of improvement projects, goals, and vision for the Town’s transportation networks. The Figure 1 and Table 1 show the 20 transportation projects.

The Planning Commission vetted the plan and presented it at a public hearing on March 17th, 2021.

VISION STATEMENT:
Our transportation system should allow safe and convenient walking, biking, and travel by other means throughout the Town.

THE PLAN CONSISTS OF THE FOLLOWING CHAPTERS:

1. Introduction: Describes the planning process, explains how the plan functions, and states the transportation vision and goals.

2. Regional Context and Demographic Trends: Introduces the Town, explains how it fits into the surrounding region and discusses population trends related to transportation planning.

3. Public Engagement: Discusses the community input methods and results.

4. Increase Mobility Choices: Describes the first goal, its objectives, relevant existing conditions, and summarizes recommendations that support the goal.

5. Increase Safety: Describes the second goal, its objectives, related data, and studies, and summarizes recommendations that support the goal.

6. Preserve Infrastructure: Describes the third goal, its objectives, relevant existing conditions, and summarizes recommendations that support the goal.

7. Expand the Transportation Network Sustainably: Describes the fourth goal, its objectives, relevant existing conditions, and summarizes recommendations that support the goal.

8. Provide Parking Options: Describes the fifth goal, its objectives, relevant existing conditions, and summarizes recommendations that support the goal.

9. Continued Cooperation: Describes the sixth goal, its objectives, discusses regional partners, and lists projects in the region that may affect the Town.

10. Project List and Implementation: Includes the project list, project map, and a summary of potential funding sources.
Figure 1  Projects map
Table 1  Projects list

<table>
<thead>
<tr>
<th>MAP ID</th>
<th>TITLE</th>
<th>DESCRIPTION</th>
<th>FROM</th>
<th>TO</th>
<th>PRIORITY</th>
<th>COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>East Broad Way Phase 2</td>
<td>This project has been funded and is under design. The Town will complete the design, acquire easements, and construct improvements to East Broad Way, between Park Place and Church Street. Improvements will include sidewalks, curb, gutter, street lights, storm drainage, parking spaces, and landscaping. This project will also involve the relocation of utility poles.</td>
<td>North Light Street</td>
<td>Church Street</td>
<td>Underway</td>
<td>$2,709,282</td>
</tr>
<tr>
<td>2</td>
<td>South Church and East Pennsylvania Streetscape Improvements</td>
<td>This project has been funded and is under design. Improvements to South Church Street include curb and gutter, stormwater, sidewalks, and street lights. The storm lines will be sized branching off to East Pennsylvania Avenue to handle storm needs for an improved Town Office and/or a downtown parking lot.</td>
<td>Oktoberfest Way</td>
<td>East Broad Way (Route 673)</td>
<td>Underway</td>
<td>$1,176,000</td>
</tr>
<tr>
<td>3</td>
<td>South Loudoun Streetscape Improvements</td>
<td>Design and construct improvements to South Loudoun Street between the Elementary School and East Broad Way. Improvements will include construction of sidewalks, improved storm drainage, and minor roadway improvements. Improvements should include traffic calming measures.</td>
<td>Lovettsville Elementary School South Entrance</td>
<td>East Broad Way (Route 673)</td>
<td>Top Priority</td>
<td>$3,150,000</td>
</tr>
<tr>
<td>11</td>
<td>Town Square and West Broad Way Intersection</td>
<td>Study, design, and construct improvements to alleviate concerns about southbound vehicle conflicts. Improve pedestrian safety and accommodations across all legs of the intersection.</td>
<td>N Berlin Turnpike at West Broad Way</td>
<td>N/A</td>
<td>Top Priority</td>
<td>$300,000</td>
</tr>
<tr>
<td>12</td>
<td>Berlin Turnpike and South Loudoun Intersection</td>
<td>Explore alternatives for the intersection of Berlin Turnpike and South Loudoun Street. A roundabout and a realignment to &quot;T&quot; up the intersection should be studied. Install a crosswalk (requires formal mid-block crossing study) from the shared-use path on Berlin Turnpike to the eastern side of South Loudoun Street. Include gateway placemaking elements. This project includes planning, design, and construction.</td>
<td>Berlin Turnpike (Route 287) at S Loudoun Street</td>
<td>N/A</td>
<td>Top Priority</td>
<td>Alternative 1: $6,070,00 Alternative 2: $2,720,000</td>
</tr>
<tr>
<td>13</td>
<td>South Loudoun School Sidewalk</td>
<td>Construct a sidewalk on South Loudoun Street to connect the shared-use path on Berlin Turnpike to the south entrance of Lovettsville Elementary School. This should be completed after the redesign of the Berlin Turnpike and South Loudoun Street intersection, or as part of that project. The alignment will depend on the intersection redesign and could traverse the parcel to west of the school. This project includes planning, design, and construction.</td>
<td>Berlin Turnpike (Route 287)</td>
<td>Lovettsville Elementary School</td>
<td>High Priority</td>
<td>$680,000</td>
</tr>
<tr>
<td>MAP ID</td>
<td>TITLE</td>
<td>DESCRIPTION</td>
<td>FROM</td>
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<td>5</td>
<td>Town Square Sidewalk Extension</td>
<td>Add an approximately 180' long, 8-10' wide sidewalk link on the northeast side of the Town Square and widen the existing eastern sidewalk to 8-10'. This project includes planning, design, and construction.</td>
<td>Town Square North Intersection</td>
<td>Town Square East Intersection</td>
<td>High Priority</td>
<td>$140,000</td>
</tr>
<tr>
<td>7</td>
<td>Old Town One-Way Conversion</td>
<td>Evaluate one-way conversions on Old Town streets. One-way streets would consist of a single travel-lane with space for pedestrians and/or cyclists. One-way conversions will be consistent with streetscape improvements on South Church Street, East Pennsylvania Avenue, South Loudoun Street, and South Locust Street. The Town should pursue a traffic study to determine feasibility and design.</td>
<td>TBD</td>
<td>TBD</td>
<td>High Priority</td>
<td>$15,000</td>
</tr>
<tr>
<td>4</td>
<td>Locust Streetscape Improvements</td>
<td>Plan, design and construct improvements to Locust Street between the South Loudoun Street and East Broad Way. Improvements will include construction of sidewalks, improved storm drainage, and minor roadway improvements.</td>
<td>South Loudoun Street</td>
<td>East Broad Way (Route 673)</td>
<td>Medium Priority</td>
<td>$1,330,000</td>
</tr>
<tr>
<td>6</td>
<td>Crosswalk Studies</td>
<td>Acquire funding and conduct studies to assess the necessity of crosswalks at the identified locations. Construct crossings where warranted, including necessary ADA ramps and other traffic control devices. Some of the recommended projects might address the needs at some of the study locations.</td>
<td>TBD</td>
<td>TBD</td>
<td>Medium Priority</td>
<td>$40,000</td>
</tr>
<tr>
<td>8</td>
<td>Berlin Turnpike Shared-Use Path Extension</td>
<td>Extend the shared-use path on Berlin Turnpike (Route 287) to connect the existing shared-use path to the Town Square. A 250-foot long, 8-10' wide trail segment would complete the pedestrian connections in this portion of the network. This project would require acquiring right-of-way. This project includes planning, design, and construction.</td>
<td>Hammond Drive</td>
<td>Town Square</td>
<td>Medium Priority</td>
<td>$130,000</td>
</tr>
<tr>
<td>9</td>
<td>Berlin Turnpike North Shared-Use Path</td>
<td>Design and construct an 8-10' wide shared-use path between the Town Square and Tilgham Place along North Berlin Turnpike (Route 287) to complete the connection to the Town Square. The path will have a paved surface and will add curbs and gutters along Berlin Turnpike. This project includes planning, design, and construction.</td>
<td>West Broad Way (Route 673)</td>
<td>Tilgham Place</td>
<td>Medium Priority</td>
<td>$1,960,000</td>
</tr>
<tr>
<td>19</td>
<td>West Broad Way Sidewalk</td>
<td>Install a 540' long, 5' wide sidewalk along the northern side of West Broad Way to the existing curb cut at the intersection with Berlin Turnpike. This project includes planning, design, and construction.</td>
<td>Existing sidewalk</td>
<td>Berlin Turnpike (Route 287)</td>
<td>Medium Priority</td>
<td>$110,000</td>
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### Lovettsville Transportation Master Plan

#### Executive Summary

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<th>COST</th>
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<tbody>
<tr>
<td>20</td>
<td>East Broad Way Sidewalk</td>
<td>Install a 160' long, 5' wide sidewalk from the sidewalk that will be installed per the East Broad Way and South Church Street streetscape improvement project to the existing curb cut on Town Square. This project includes planning, design, and construction.</td>
<td>South Church Street</td>
<td>Town Square</td>
<td>Medium Priority</td>
<td>$230,000</td>
</tr>
<tr>
<td>10</td>
<td>East Shared-Use Path Extension</td>
<td>Extend the shared-use path east of the elementary school to Frye Court to connect the residents along Frye Court to the Lovettsville Elementary School shared-use path. This project includes planning, design, and construction.</td>
<td>Frye Court</td>
<td>Lovettsville Community Park Trail</td>
<td>Low Priority</td>
<td>$160,000</td>
</tr>
<tr>
<td>14</td>
<td>Cooper Run Speed Study</td>
<td>Conduct a long-term speed study on Cooper Run to verify residents' concerns of speeding.</td>
<td>West Broad Way (Route 673)</td>
<td>Tilgham Place</td>
<td>Low Priority</td>
<td>$3,500</td>
</tr>
<tr>
<td>15</td>
<td>Berlin Turnpike Shared-Use Path Lighting</td>
<td>Install pedestrian-scaled streetlights along the shared-use path on South Berlin Turnpike. This project includes planning, design, and construction.</td>
<td>South Loudoun Street</td>
<td>Hammond Drive</td>
<td>Low Priority</td>
<td>$200,000</td>
</tr>
<tr>
<td>16</td>
<td>School Path Pedestrian Lighting</td>
<td>Install pedestrian-scaled streetlights along the shared-use path east of Lovettsville Elementary School. This project includes planning, design, and construction.</td>
<td>East Broad Way (Route 673)</td>
<td>Lovettsville Elementary School</td>
<td>Low Priority</td>
<td>$160,000</td>
</tr>
<tr>
<td>17</td>
<td>Frye Court Pedestrian Lighting</td>
<td>Add pedestrian lighting along Frye Court. This should be completed after or concurrently with the extension of the school shared-use path to Frye Court. This project includes planning, design, and construction.</td>
<td>Frye Court</td>
<td>East Broad Way (Route 673)</td>
<td>Low Priority</td>
<td>$80,000</td>
</tr>
<tr>
<td>18</td>
<td>South Church Sidewalk Widening</td>
<td>Widen the existing sidewalk to 10' to accommodate bikes along with pedestrians.</td>
<td>Berlin Turnpike (Route 287)</td>
<td>Oktoberfest Way</td>
<td>Low Priority</td>
<td>$60,000</td>
</tr>
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Chapter I: Introduction

The Transportation Master Plan functions as the transportation chapter for the Town of Lovettsville’s Comprehensive Plan, pursuant to the Code of Virginia, §15.2-2223. As the Town’s transportation policy document, the Transportation Master Plan is a guide to assist local officials with amendments to local codes, programs, initiatives, and budgets. This document designates a system of transportation infrastructure needs and planning-level recommendations that support Lovettsville’s policies and goals.

The Transportation Master Plan includes a map that shows road and transportation improvements intended to resolve current and future transportation needs and to help the Town prepare projects for the Six-Year Improvement Program. The Town consulted with the Virginia Department of Transportation (VDOT) and the planning process and recommendations are consistent with the Commonwealth Transportation Board’s Statewide Transportation Plan and statewide documents and programs.

Planning Process

The Lovettsville Transportation Master Planning process spanned 12 months and involved residents, Town staff, elected and appointed officials, and the Town’s transportation consultants, EPR. The process began with reviewing the local Comprehensive Plan’s transportation chapter and previous plans and studies in the Town. The process formally commenced with a kickoff meeting with consultants and the Town Planning Commission on March 11th, 2020. The Planning Commissioners provided the consultants with information on existing conditions, issues, and visions for transportation in the Town. The meeting informed the study, helping to identify existing conditions and determine public engagement strategies.

Over the summer and the beginning of fall of 2020, the Town’s consultants examined existing conditions and conducted public outreach. The review of existing conditions entailed field visits, a speed study, and secondary traffic data analysis. The outreach included an online survey and phone interviews with residents.

Plan Function

The Town’s Comprehensive Plan calls for adoption of a Transportation Master Plan (TMP) to provide a framework for developing and maintaining the Town’s transportation system. With its adoption, the TMP supersedes the original transportation policies of the Comprehensive Plan. Project profiles, included in the appendix, detail the recommendations, and include information needed to acquire funding and guidance on the next steps toward implementation.

The TMP communicates the Town’s transportation priorities to its residents, nearby governments, and potential developers. The project list also serves as a pipeline of transportation projects to include in the Town’s Capital Improvements Plan (CIP).
Vision Statement:
Our transportation system should allow safe and convenient walking, biking, and travel by other means throughout the Town.

Vision & Goals
Through this plan, the Town of Lovettsville envisions a transportation system that should allow safe and convenient walking, biking, and travel by other means throughout the Town. The plan is structured around six goals that serve as the Town’s transportation policies. A set of objectives supports each goal and further elaborates the policies. The project recommendations support those objectives.

The goals and objectives will guide the Town to achieving the vision for its transportation system as the Town grows and changes over time.

The goals and objectives arose from a combination of the transportation policies in the Comprehensive Plan, public input, and discussions with the Planning Commission. The Comprehensive Plan included 34 policy statements in the transportation chapter. The Master Plan’s goals and objectives condense the 34 policies into a more comprehensible structure, updating them with information from the community and the Planning Commission. Each goal has a chapter in the plan that states its objectives and discusses the existing conditions related to that goal and the proposed recommendations that will support the realization of the goal.
GOALS

1. **INCREASE MOBILITY CHOICES**
   Make Lovettsville a more pedestrian-oriented and bicycle-friendly community by adding sidewalks, shared-use trails, and bike lanes to the transportation network.

2. **INCREASE SAFETY**
   Work with VDOT and others to improve safety for all users of Town streets, sidewalks, and shared-use paths.

3. **PRESERVE INFRASTRUCTURE**
   Plan and implement improvements to existing substandard streets to improve drainage, replace or upgrade public utilities, and enhance traffic flow and access to adjacent properties.

4. **EXPAND THE TRANSPORTATION NETWORK SUSTAINABLY**
   Work with developers to see that new developments enhance the connectivity of the existing network and that negative impacts to the network are mitigated.

5. **PROVIDE PARKING OPTIONS**
   Provide adequate parking options throughout the Town.

6. **CONTINUE COOPERATION**
   Work with county and state governments to improve and maintain the transportation network.
Chapter II: Regional Context and Demographic Trends

Regional Context

Lovettsville is close enough to larger urban centers and Towns (Leesburg and Purcellville, Virginia; Brunswick and Frederick, Maryland; and Charles Town, West Virginia) so that residents have access to more expansive retail, cultural, and employment opportunities. The MARC train station in Brunswick, Maryland, located about three miles from Lovettsville on the Brunswick Line, provides commuter rail transportation to Montgomery County and Washington, DC for residents of the Lovettsville area. Figure 3 shows the wider region around Lovettsville.

Primary vehicular access to Lovettsville is by Berlin Turnpike (Route 287), which connects the Town with the City of Brunswick, Maryland to the north, and Virginia Route 9 and the Town of Purcellville to the south. Secondary access to the Town from the east is via Lovettsville Road (Virginia Secondary Route 672), which connects to U.S. Route 15 near Point of Rocks, Maryland, and Mill Town Road (Virginia Secondary Routes 673 and 681), which links Lovettsville to Waterford.

To the west, Irish Corner Road and Mountain Road (Virginia Secondary Routes 673 and 690) link Lovettsville to Virginia Route 9 near the Town of Hillsboro.

Commuting

Most Lovettsville residents commute to work outside of the Town limits, as seen in Figure 2. Lovettsville residents commute to jobs in Washington, DC, Leesburg, and other employment centers in Northern Virginia, as Figure 4 shows. The MARC commuter train provides access to major employment centers within about an hour’s trip to Frederick County and Montgomery County in Maryland and the District of Columbia. Major employment centers in Northern Virginia, including those in eastern Loudoun, Fairfax,
and Arlington Counties, and the cities of Alexandria, Fairfax, and Falls Church can be reached by automobile via Virginia Routes 9 and 7, and by using the Dulles Greenway and Dulles Toll Road. Figure 5 shows the travel times for residents, revealing that over half of commuters travel more than 45 minutes to work.

Due to the lack of transit service for the Town and the distance to employment centers, most residents commute by car, as seen in Figure 6. The Town has seen a significant increase in the share of teleworkers, more than doubling from 6% in 2000 to 13% in 2019. Telework is a viable travel demand management strategy, which seeks to minimize the demand for vehicle-based trips in a transportation system. One recommendation of a Town-wide market study undertaken in 2016 was for the Town to explore the establishment of a co-working space on the Engle Tract to provide professional offices for telecommuters, small businesses, or individual consultants. A co-working space could satisfy the demand for home-based work that was rising before the pandemic and could decrease the number of vehicles needed per household in the Town.

The COVID-19 pandemic has spurred a discussion on the future of commuting. Social distancing measures and stay-at-home orders forced millions of Americans to work from home. Some companies have changed their policies to allow employees to work from home after the pandemic is over. Commenters speculate that many companies might follow suit and that work-from-home will become much more common after the pandemic than it was before. The obsolescence of commuting to work could drastically reduce the number of vehicles needed per household. Consequently, demand for alternative transportation infrastructure, i.e., bike and pedestrian facilities, would increase, as people would shift from car-based trips to alternative modes. It is impossible to accurately predict how commuting will look after the pandemic, but the Town’s investments in bike and pedestrian projects would increase the Town’s resiliency to future changes in commuting patterns.
Transit
Brunswick, Maryland, two miles north of Lovettsville, is the terminal for weekday MARC commuter trains to and from Washington, D.C. In addition to providing daily commuter trains Monday through Friday, there are additional trains for special events. A Virginia Regional Transit (VRT) bus connection that operated during the work week between Purcellville and Brunswick, Maryland was discontinued in 2010. The Lovettsville Town Council passed a resolution in 2016 requesting that a commuter bus route be re-established connecting Purcellville to the MARC station in Brunswick, Maryland through Lovettsville.

A commuter bus or shuttle route to from the Town to the MARC station in Brunswick would improve commuting options for residents of Lovettsville and the surrounding area. Provision of the service could reduce the number of vehicles needed per household for Town residents, a shift that the projects and objectives under Goal I would facilitate. Lovettsville is in the Rural Policy Area according to Loudoun County 2019 Countywide Transportation Plan. Since the County supports the provision of local and on-demand transit services in this area by VRT, the service could be provided by re-establishing the VRT service referenced above. Alternatively, a different private shuttle operator could provide the service. A site on or near the Town Square could serve as a stop for the service.

Constructing a park and ride lot in the Town is another opportunity to expand commuting options for Town residents. Loudoun County supports the use of park and ride lots in the Rural Policy Area as a method to reduce demand on the County road network. The Town could poll residents to gauge the amount of public support for a park and ride in or just outside of Town. If there is adequate public support, the Town could work with the County and VDOT to construct a park and ride lot. Potential sites include the Lovettsville Protective Game Association, the current fire station, or on the Engle or Lennar tracts.
Demographic Changes

Growth
Lovettsville has experienced significant population growth over the past two decades. The greatest increase occurred between 2000 and 2010, when the population nearly doubled, as seen in Table 2. Figure 7 shows that the population growth has leveled out but continues to rise each year. Dwelling units have kept pace with the population growth. There are several large developable parcels in the Town, leaving room for more growth in the coming years. See Chapter VII for further discussion of future development.

Table 2 Change in population and dwelling units (ACS 2019 5-Year Estimates & Town of Lovettsville)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>DWELLING UNITS</th>
<th>% CHANGE</th>
<th>POPULATION</th>
<th>% CHANGE</th>
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<tbody>
<tr>
<td>1950</td>
<td>n/a</td>
<td>-</td>
<td>341</td>
<td>-</td>
</tr>
<tr>
<td>1960</td>
<td>n/a</td>
<td>-</td>
<td>217</td>
<td>-36%</td>
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<tr>
<td>1970</td>
<td>70</td>
<td>-</td>
<td>185</td>
<td>-15%</td>
</tr>
<tr>
<td>1980</td>
<td>212</td>
<td>203%</td>
<td>613</td>
<td>231%</td>
</tr>
<tr>
<td>1990</td>
<td>301</td>
<td>42%</td>
<td>749</td>
<td>22%</td>
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<tr>
<td>2000</td>
<td>325</td>
<td>8%</td>
<td>853</td>
<td>14%</td>
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<tr>
<td>2010</td>
<td>599</td>
<td>84%</td>
<td>1,637</td>
<td>92%</td>
</tr>
<tr>
<td>2015</td>
<td>696</td>
<td>16%</td>
<td>1,931</td>
<td>18%</td>
</tr>
<tr>
<td>2017</td>
<td>713</td>
<td>2%</td>
<td>2,274</td>
<td>18%</td>
</tr>
<tr>
<td>2018</td>
<td>756</td>
<td>6%</td>
<td>2,465</td>
<td>8%</td>
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<td>2019</td>
<td>810</td>
<td>7%</td>
<td>2,665</td>
<td>8%</td>
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<tr>
<td>2020</td>
<td>832</td>
<td>3%</td>
<td>2,820</td>
<td>6%</td>
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Figure 7 Change in population and dwelling units (ACS 2019 5-Year Estimates & Town of Lovettsville)

Age
Age is an important consideration for transportation planning, as different age groups have different mobility needs and abilities. Children and elderly adults have less access to cars than people 16 or older, making them reliant on others or alternative transportation modes. Bike and pedestrian infrastructure, such as sidewalks, bike lanes, and shared-use paths, are crucial for these age cohorts. Table 3 shows relevant age statistics for Town residents. The table reveals a substantial population of children who are not old enough to drive. It is important to invest in transportation improvements that give residents who cannot drive the ability to travel throughout the Town safely and conveniently.

Table 3 Age characteristics (ACS 2019 5-Year Estimates)

<table>
<thead>
<tr>
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<th>2010</th>
<th>2019</th>
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<tbody>
<tr>
<td>Median Age</td>
<td>33.5</td>
<td>32.2</td>
</tr>
<tr>
<td>% Under 16</td>
<td>30%</td>
<td>34%</td>
</tr>
<tr>
<td>% 65 and Older</td>
<td>7%</td>
<td>6%</td>
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</table>

Disability
Another group with special mobility needs is people with disabilities. Per the Census Bureau, 4% of the Town’s residents have a disability as of 2019. The Town’s sidewalks and shared-use paths are essential facilities for its differently-abled residents. As with young and older residents, the Town should continue to invest in its pedestrian infrastructure to allow all residents to reach their destinations easily and safely.
Chapter III: Public Engagement

Engagement Opportunities
Public input was a key part of the Transportation Master Plan process. Lovettsville’s residents know their transportation system, so their concerns, desires, and visions were a key data source for the project team. After an initial public meeting attended by 7 people, the COVID-19 pandemic made in-person outreach methods impossible for the remainder of the planning process. The project team interacted with residents through an online survey and phone interviews. The team also gained community insights through the Town’s Planning Commission.

Planning Commission
The Town’s six Commissioners are appointed to provide official recommendations to the Town Council on planning and zoning matters. The consultants met with the Planning Commission five times in making the Transportation Master Plan process. At each meeting, the commissioners provided background information and voiced community concerns while also providing constructive criticism on the project recommendations.

While the Planning Commission synthesized some public comments and provided contextual information, the Master Plan would not have been possible without direct engagement with Lovettsville community members.

Online Survey
An online survey was indispensable to understanding the community’s needs and desires for their transportation system. The Town’s project consultants drafted survey questions with the Planning Commission over the summer and launched the survey in September 2020. Town staff advertised the survey on the town website, the town newsletter, and posts on local Facebook groups. The survey consisted of a questionnaire and an interactive mapping element. In total, 160 residents responded to the survey, creating 128 comment points on the interactive map. Respondents identified a range of problem spots and important destinations, and suggested specific improvements. The appendix documents the survey questions and responses.

Resident Interviews
Interviews with residents supplemented the extensive input received through the online survey. The Town’s newsletter extended an invitation to reach out to the project team to discuss the planning process over the phone. Three community members called the team to express their thoughts on various transportation issues in the Town. The interviewees echoed the input received through the online survey.

Figure 8  Select online survey mapping results
Key Takeaways

**Walkability**
Increased walkability arose as a major theme in the survey responses. Survey participants identified many locations that need sidewalks, crosswalks, and/or enhanced pedestrian safety features. The feedback on increasing the amount of pedestrian infrastructure informed the development of Projects 3, 4, 6, and 8. Respondents also expressed a desire for more bike accommodations, which underscores the importance of proposed shared-use paths, and Project 5.

**The Town Square**
Several respondents expressed frustration and confusion with the traffic movements through the town square, shown in Figure 9. The town square is the main intersection in Town. It breaks the traffic flow on Berlin Turnpike to serve the land uses at the Town Square. Respondents report experiencing congestion on each leg of the intersection and express frustration with the geometry particularly of the W. Broad Way/Berlin Turnpike intersection. Project 11 addressed the most commented on intersection on the town square.

Concerns at the intersection of Berlin Turnpike and West Broad Way included speeding vehicles and sightline issues. Respondents report that southbound vehicles on Berlin Turnpike often speed through the intersection. Another issue is that drivers turning left or right from West Broad Way cannot see southbound traffic on Berlin Turnpike due to the road’s curve. Project 11 recommends conducting a study at the intersection. The project presents a planning-level concept that would reduce the size of the intersection to slow incoming vehicles and allow vehicles turning from West Broad Way to pull farther into the intersection. The proposed alternative also includes pedestrian connections to existing sidewalks and improvements proposed in other projects.

**Intersection Safety**
The survey responses revealed concerns about the intersection of Berlin Turnpike and South Loudoun Street and the intersection of Berlin Turnpike and West Broad Way (see town square, above). Respondents expressed concerns about the geometry of the intersection of Berlin Turnpike and South Loudoun Street, as well as the lack of bike and pedestrian connectivity from the existing shared-use path to Lovettsville Elementary School. Projects 12 and 13 address those concerns, and it should be noted that they could be done separately or as one project.

**Figure 9** Town Square (Google Earth)

![Figure 9 Town Square (Google Earth)](image)
Chapter IV: Increase Mobility Choices

The Transportation Master Plan’s first goal is to make Lovettsville a more pedestrian-oriented and bicycle-friendly community by adding sidewalks, shared-use paths, and bike lanes to the transportation network. Lovettsville’s distance from employment and shopping centers creates a stable demand for car-based transportation, but the Town has many local businesses and uses that meet daily needs, such as restaurants, the library, a medical office, and a gym. Most of the local businesses are in the center of Town and in Old Town, Lovettsville’s historic center.

The Town’s small footprint and the proximity of its destinations create the conditions for walkability. However, the lack of sidewalks and bikeable shared-use paths in certain parts of Town render local businesses practically accessible only by car. For example, a resident on South Loudoun Street might want their trip to the gym to be part of their workout, but a lack of sidewalks makes driving their only safe option for travel. This goal seeks to improve the Town’s bike-ped network, so residents have more choice in how they get around Town. Three objectives support this goal, and several project recommendations advance those objectives.

**Objective 1.1**
Expand the sidewalk network and improve pedestrian safety measures.

**Objective 1.2**
Extend shared-use paths that connect neighborhoods with key destinations within Town.

**Objective 1.3**
Install a bike lane network where bike lanes can be safely accommodated.

**Objective 1.4**
Work with Loudoun County to develop mass transit infrastructure, such as a park and ride lot or a commuter bus/shuttle service.

**ORIGIN S OF GOAL 1 OBJECTIVES**
This box and similar boxes in the other goal chapters explain how the 2011 Comprehensive Plan policies and public input shaped the TMP Goals and Objectives.

- Policies 2, 13, 25 & 29 refer to improvements that support increased bike and pedestrian mobility.
- Policies 5, 8 & 18 refer to improvements to pedestrian facilities.
- Policy 27 calls for completing the share-use trail on the west side of N Berlin Tpke.
- Policy 9 calls for increasing safety for bicyclists in town.
- Numerous survey comments called for easier biking and walking in town.
Existing Conditions

Most of the original streets in Lovettsville have narrow rights-of-way that lack sidewalks for safe pedestrian mobility. Newer developments, constructed since the 1970s, include sidewalks on one or both sides of the street. The sidewalks throughout Town are five feet wide, except for those on the Town Square, which are six to ten feet wide. Project 5 would increase the eastern perimeter sidewalk from eight to ten feet and add a northern link of the same width. This improvement would create a shared-use path segment that would connect the existing and proposed Berlin Turnpike shared-use path segments.

Many of the Town’s roads have posted speed limits and vehicle volumes that are conducive for cycling without bike facilities. The shared-use paths on Berlin Turnpike, Keister Lane, and east of the elementary school provide additional safe cycling facilities. The paths are typically eight feet wide. The Town should consider ten-foot widths when building new shared-use path segments, as the extra room improves user comfort and is often preferred by federal funding programs. Figure 10 shows the existing sidewalks and shared-use paths, along with those proposed in Project 1 and Project 2. The map highlights the abundance of sidewalks in the Town’s central, northern, and western areas.

The East Broad Way Streetscape Project between Park Place and the Lovettsville Community Center and South Berlin Turnpike shared-use path, both completed in 2015, increased the ability of residents to safely and confidently walk or bike in Town. Both projects are considered the initial phases of larger projects to enhance the entire streetscape along East Broad Way and construct a shared-use path along the length of Berlin Turnpike in the Town of Lovettsville. See the profiles for Project 1 and Project 9 in the appendix for more information. Project 9 will finish the in-Town link of a regional bike lane connecting the Town to Brunswick, Maryland, for commuting and recreational trips, as identified in the Northern Virginia Regional Bikeway and Trail Network Study 2015 Update.

PAST STUDIES
- Town Square Master Plan
- Safe Routes to School Walkabout Report
- Town of Lovettsville Accessibility Study

Figure 10 Town sidewalks and shared-use-paths (Loudoun County)
**Summary of Recommendations**

Table 4 summarizes the projects that support Goal 1.

Table 4  Projects that support Goal 1

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>PROJECT IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 East Broad Way Phase 2</td>
<td>The streetscape improvements include constructing new sidewalks.</td>
</tr>
<tr>
<td>#2 South Church and East Pennsylvania Streetscape Improvements</td>
<td>The streetscape improvements include constructing new sidewalks.</td>
</tr>
<tr>
<td>#3 South Loudoun Streetscape Improvements</td>
<td>The proposed streetscape improvements include new sidewalks and a crosswalk.</td>
</tr>
<tr>
<td>#4 Locust Streetscape Improvements</td>
<td>The proposed streetscape improvements include new sidewalks.</td>
</tr>
<tr>
<td>#5 Town Square Sidewalk Extension</td>
<td>Expanding the existing sidewalk link to 8-10’ and installing the new 8-10’ segment will create a new shared-use path.</td>
</tr>
<tr>
<td>#6 Crosswalk Studies</td>
<td>Crosswalks will provide safe connections for residents walking in the Town.</td>
</tr>
<tr>
<td>#8 Berlin Turnpike Shared-Use Path Extension</td>
<td>The new segment will connect the existing southern segment to Town Square.</td>
</tr>
<tr>
<td>#9 Berlin Turnpike North Shared-Use Path</td>
<td>The new segment will provide residents in the northern half of Town with a safe bike and pedestrian facility that connects to Town Square.</td>
</tr>
<tr>
<td>#10 East Shared-Use Path Extension</td>
<td>The new segment will connect residents on the east side of town with the existing path.</td>
</tr>
<tr>
<td>#13 South Loudoun School Sidewalk</td>
<td>The new sidewalk will connect the shared-use path with the sidewalks in front of the school.</td>
</tr>
<tr>
<td>#18 South Church Sidewalk Widening</td>
<td>Widening the sidewalk to 8-10’ will create a bike connection from the existing path on Berlin Turnpike to Old Town.</td>
</tr>
<tr>
<td>#19 West Broad Way Sidewalk</td>
<td>The new segment will connect residents in the northwest portion of Town to Town Square.</td>
</tr>
<tr>
<td>#20 East Broad Way Sidewalk</td>
<td>The additional link will connect the new sidewalks on East Broad Way to Town Square.</td>
</tr>
</tbody>
</table>
Chapter V: Increase Safety

Goal two seeks to work with VDOT to improve safety for all users of Town streets. Safety for all modes is a primary concern for transportation planning and is a central element of this Master Plan. The Town’s transportation vision includes safe streets for residents of all ages and abilities, no matter what mode they choose to travel by. VDOT maintains all the public streets within the Town, so the Town will need to work with the Department to provide safe mobility options for its residents and visitors. Primary and secondary data informed the goal and objectives for improving transportation safety. The public engagement process and Planning Commission also validated these safety objectives.

Summary of Safety-Related Data

Vehicle Crashes
Crashes in the Town limits for the last five years, between July 2015 and July 2020, were pulled from the VDOT Crash Analysis Tool to identify areas of safety concerns. Figure 11 shows the crash locations, while Figure 12 shows a heatmap of where crashes occurred. The map reveals a hotspot at the intersection of Berlin Turnpike and West Broad Way, which is the northern corner of the Town Square. There are also lesser hotspots at the southern corner of the town square and the intersection of Lutheran Church Road.

Speed Counts
Planning Commissioners and residents expressed concerns about speeding on several Town streets, including South Loudoun Street, Berlin Turnpike, East Broad Way, Cooper Run Street, Hammond Drive, and Eisentown Drive (from West Broad Way to Hammond Drive). Consequently, a vendor placed speed counters at several of these locations. The data derived from the speed study informed the development of several projects, as noted in the project profiles. The study revealed that speeding occurs on South Loudoun Street where the posted speed limit is 25mph. The speeding on South Loudoun is particularly concerning because the data collector was located directly in front of the elementary school, where safe mobility is paramount. The study and findings are discussed further in the appendix. The Town recognizes that there are a range of traffic calming measures that could be used to address speeding on its streets.

ORIGINS OF GOAL 2 OBJECTIVES

» Policies 13 & 14 call for working with VDOT and obtaining funding for projects that include traffic calming and address speed limits.
» Policy 15 states to restrict heavy and through truck traffic on S Loudoun & Locust.
» Many comments identified speeding as an issue.
**Summary of Recommendations**

**Town-Wide Speed Limit**
The speed limit on roads in the Town is 25 mph, except for the northern and southern portions of Berlin Turnpike, which are 35 mph, as seen in Figure 13. The Comprehensive Plan recommended exploring a Town-wide speed limit of 25 mph, which is carried forward in this Transportation Master Plan. Lowering vehicle speeds is a key way to improve road safety. The 35 mph speed limit on Berlin Turnpike preceded the Town’s significant population growth in recent decades, when Berlin Turnpike was a rural arterial with residences scattered here and there. Lovettsville has grown up along the road and will likely continue to grow. It is time to align the speed limits with the current land uses in the Town by lowering every street to 25 mph to preserve safe streets for residents in and out of cars.

**Table 5** summarizes the projects that support Goal 2.

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>PROJECT IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>#11 Town Square and West Broad Way Intersection</td>
<td>The study and the proposed improvements will increase safety at the Town intersection with the biggest crash hotspot.</td>
</tr>
<tr>
<td>#12 Berlin Turnpike and South Loudoun Intersection</td>
<td>Either of the proposed alternatives would calm traffic entering the Town from South Berlin Turnpike.</td>
</tr>
<tr>
<td>#14 Cooper Run Speed Study</td>
<td>A speed study will illuminate the causes of speeding that residents identified, and would provide interventions to reduce speeding on the road.</td>
</tr>
<tr>
<td>#15 Berlin Turnpike Shared-Use Path Lighting</td>
<td>Improved lighting increases safety for people traveling along the path.</td>
</tr>
<tr>
<td>#16 School Path Pedestrian Lighting</td>
<td>Installing lights will increase safety and comfort for people using the path.</td>
</tr>
<tr>
<td>#17 Frye Court Pedestrian Lighting</td>
<td>Installing lights would increase safety and comfort for people using the path once it has been constructed.</td>
</tr>
</tbody>
</table>
Gateway Treatments
Another method to curb speeding for incoming traffic is to install gateway features at key entrances to the town. Gateway treatments can alter the roadway, such as curb extensions or decorative paving, or off-road enhancements, such as signs. Such enhancements signal a shift in land use context to drivers entering the town. Gateways could also serve a placemaking function by enhancing the Town’s distinct character. Prominent gateway features would alert motorists that they are entering a town environment, helping to reduce speed and increase driver awareness. Figure 14 shows an example of a gateway treatment.

Truck Restrictions
This Transportation Master Plan affirms the Comprehensive Plan policy to restrict heavy and through truck traffic on South Loudoun Street and Locust Avenue. The narrow rights-of-way and the residential character of the streets render them unsafe for heavy truck traffic. Instead, trucks should use Berlin Turnpike, as it is an arterial road. The Town should work with VDOT to pursue restrictions via the Through Truck Restriction Program.
Chapter VI: Preserve Infrastructure

Goal three strives to plan and implement improvements to existing substandard streets to improve drainage, replace or upgrade public utilities, and enhance traffic flow and access to adjacent properties. Many of the Town’s roads are newer due to recent growth, but some residents live on the Town’s original roads, most of which are in Old Town. Upgrading the Town’s older streets to meet current street design standards is a central goal for the Town. Upgrading the streets will improve the quality of life for residents living on those streets and mitigate negative environmental impacts through improved stormwater management. Streetscape improvements also allow the Town to enhance the distinct character of its built environment through consistent street design and lighting. Targeted intersection improvements will also improve safety for residents.

Existing Conditions

The Town street network has expanded continuously since the 1950s with the expansion of neighborhoods in the western and northern parts of Lovettsville. The Town’s streets are a combination of shoulder-and-ditch section streets in the older parts of the community to wider and curb-and-gutter streets in the newer subdivisions. Pavement widths range from as narrow as 14 feet in Old Town to over 30 feet in the newer neighborhoods. Street rights-of-way vary in width from 33 feet in the Old Town to almost 90 feet on some sections of Berlin Turnpike.

VDOT maintains all the public streets within the Town of Lovettsville. Berlin Turnpike (Route 287) is the major north-south arterial bisecting the Town and carries most through traffic. Per VDOT’s functional classification system, additional non-local roads in the Town include East Broad Way (a Major Collector) and West Broad Way, and South Loudoun Street (Minor Collectors). Average daily traffic volumes for roads within the Town and immediately adjacent to the Town limits are shown in Figure 15, as reported by VDOT for 2020 (pre-pandemic). Figure 16 shows the future volumes based on growth rates derived from VDOT’s Loudoun County Travel Demand Model.

PAST STUDIES

- Streetscape Master Plan for East Broad Way and South Loudoun Street
- South Church Street and East Pennsylvania Streetscape Improvements

ORIGINS OF GOAL 3 OBJECTIVES

- Policies 4 & 5 affirm that town streets should have adequate drainage elements.
- Policy 18 calls for obtaining funding for streetscape improvements to E Broad Way & S Loudoun.
- Policies 20 & 33 call for one-way conversions.
- Policy 29 calls for streetscape improvements to the above two and several other streets.
- Policy 31 states the need for studying the installation of Town Standard Street Lights on Berlin Tpke.
- Policy 19 calls for placemaking improvements.
- Several comments revealed confusion and dissatisfaction with the Town Square.
Summary of Recommendations

As noted above, Old Town streets are much narrower both in pavement and right-of-way width than the roads in the more recently developed portions of Town. Old Town streets also lack curbs and gutters, which causes water to pool along the side of the road and in residents’ yards after rainstorms. The lack of effective stormwater management infrastructure and unused right-of-way create opportunities to improve the character of the Old Town streets through streetscape improvement projects. As seen in the project list, some Old Town streets are currently being upgraded or are the site of proposed streetscape improvements. The Town should upgrade all the streets in Old Town and elsewhere that lack adequate pedestrian and stormwater management infrastructure.

Table 6 summarizes the projects that support Goal 3.

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>PROJECT IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 East Broad Way Phase 2</td>
<td>The streetscape improvements include constructing curbs and gutters to manage stormwater. The addition of sidewalks will also create more uniform streetscapes.</td>
</tr>
<tr>
<td>#2 South Church and East Pennsylvania Streetscape Improvements</td>
<td>The streetscape improvements include constructing curbs and gutters to manage stormwater. The addition of sidewalks will also create more uniform streetscapes.</td>
</tr>
<tr>
<td>#3 South Loudoun Streetscape Improvements</td>
<td>The streetscape improvements include constructing curbs and gutters to manage stormwater. The addition of sidewalks will also create more uniform streetscapes.</td>
</tr>
<tr>
<td>#4 Locust Streetscape Improvements</td>
<td>The streetscape improvements include constructing curbs and gutters to manage stormwater. The addition of sidewalks will also create more uniform streetscapes.</td>
</tr>
<tr>
<td>#7 Old Town One-Way Conversion</td>
<td>The project realizes Objective 3.2</td>
</tr>
<tr>
<td>#11 Town Square and West Broad Way Intersection</td>
<td>The project will improve traffic movement through the town square.</td>
</tr>
<tr>
<td>#15 Berlin Turnpike Shared-Use Path Lighting</td>
<td>Uniform, pedestrian-scaled lighting would enhance the Town’s sense of place.</td>
</tr>
<tr>
<td>#16 School Path Pedestrian Lighting</td>
<td>Uniform, pedestrian-scaled lighting would enhance the Town’s sense of place.</td>
</tr>
<tr>
<td>#17 Frye Court Pedestrian Lighting</td>
<td>Uniform, pedestrian-scaled lighting would enhance the Town’s sense of place.</td>
</tr>
</tbody>
</table>
Chapter VII: Expand the Transportation Network Sustainably

Goal four is to work with developers to see that new developments enhance the connectivity of the existing network and that impacts to the network are mitigated. The Town has grown rapidly in the past two decades, almost doubling in population between 2000 and 2010. Population increases result in greater demand on the transportation system, and large developments can have particularly high impacts on adjacent roads. With ample developable land remaining in the Town, local decisionmakers should assess new developments’ effects on the transportation system and ensure, to the extent possible, that new developments enhance network connectivity rather than decrease it.

Objective 4.1
Evaluate and amend Town ordinances, as warranted, so that developers provide offsite transportation and traffic safety improvements necessitated by their development, including the use of proffers for construction and pro-rata share contributions as determined by a traffic impact analysis (pursuant to COV §15.2-2303.4).

Objective 4.2
Evaluate development proposals for adequacy of the street network to serve the development.

Objective 4.3
Ensure that sidewalks are constructed to VDOT standards within new developments.

Objective 4.4
Explore how a shared-use path could be constructed looping across the Engle and Lennar tracts connecting the north end of the Keister Lane shared-use path with the community center and the shared-use paths in the community park.

ORIGINS OF GOAL 3 OBJECTIVES
» Policies 4 & 5 affirm that town streets should have adequate drainage elements.
» Policy 18 calls for obtaining funding for streetscape improvements to E Broad Way & S Loudoun.
» Policies 20 & 33 call for one-way conversions.
» Policy 29 calls for streetscape improvements to the above two and several other streets.
» Policy 31 states the need for studying the installation of Town Standard Street Lights on Berlin Tpke.
» Policy 19 calls for placemaking improvements.
» Several comments revealed confusion and dissatisfaction with the Town Square.
Developments and Network Connectivity

The Town has several developable parcels, including the Engle, Walker, and Hummer tracts, as seen in Figure 17. Development on any of the parcels will impact the road network, and some of the tracts, namely the Engle and Lakeview Village 2 tracts, will likely add roads to the street network. New roads should connect to existing roads at multiple points to avoid cul-de-sacs, which decreases network connectivity. Increased network connectivity can alleviate congestion by increasing the number of available routes. Greater connectivity is also more financially sustainable because it allows a publicly maintained good to be consumed by more users. For example, cul-de-sacs are unduly costly, as their maintenance is paid for by taxpayers, but their use is limited to the small number of residents that line them. Another way to increase connectivity when new development occurs is through inter-parcel connections.

The Town includes provisions for inter-parcel connections between adjoining commercial properties through the zoning and subdivision ordinances. These connections link parking lots on adjacent parcels for vehicular access and encourage motorists to travel between and among adjoining commercial sites without utilizing the public street, thereby reducing traffic on that street. Inter-parcel connections between and among residential neighborhoods give motorists options when traveling within and through the Town and provide multiple routes into and out of residential subdivisions.

Inter-parcel connections are also desirable for people to walk from residential neighborhoods to commercial areas or from one neighborhood to another. The Town and developers should work together to construct sidewalk and trail connections particularly where street connections may not be feasible. This approach provides convenient and safe routes for walking between residential neighborhoods and public areas, including parks, the library, Lovettsville Community Center, and Lovettsville Elementary School.

Summary of Recommendations

Town staff and elected and appointed officials should work with developers to design developments that improve the transportation network. When developments require approval from the Planning Commission, the Town should ensure that the street network can support the proposed development and that proposed facilities include pedestrian and bicycle paths. The Planning Commission should consider network connectivity when exercising its powers and duties to review proffers, pursuant to §42-28 of the Town Code.

Figure 17 Major developable parcels
Chapter VIII: Provide Parking Options

Goal five seeks to provide adequate parking options throughout the Town. Many Town residents and residents of outlying areas tend to drive for in-Town trips, so parking options are needed to reach destinations in the Town Square and Old Town. While the projects and objectives under Goal one could reduce the demand for car-based trips in Town, additional parking facilities are likely needed based on discussions with the Planning Commission.

Existing Conditions
Off-street parking is most common for residences and businesses in the Town. However, a significant amount of on-street parking exists within newer neighborhoods that have wider streets for precisely that purpose. The Town has historically encouraged the construction of streets that support on-street parking on at least one side of the street, for instance, on East Broad Way as part of the East Broad Way Streetscape Project. The Town’s Minimum Off-Street Parking ordinance, §42-286 of the Town Code, requires off-street parking for various uses for new developments. While the ordinance will create ample parking facilities for new developments, the Town’s historic center lacks adequate parking spaces.

Summary of Recommendations
The Town should consider existing and planned parking facilities before proposing new parking lots to satisfy demand in Old Town and to facilitate adaptive reuse of existing buildings without changing the character of the neighborhood. The bike and pedestrian improvements under Goal I will likely reduce the need for car trips within Town, reducing the demand for parking. Consequently, more efficiently utilizing existing parking lots might be a better use of resources than building new lots. The parking ordinance allows for private, shared parking between uses where appropriate, provided the owner or owners of adjoining property enter into a shared parking agreement (if different owners) or parking license agreement (if the same
It may be feasible for businesses in Old Town with off-street lots to share their spaces with adjacent uses depending on the temporal demand. For example, an office might share its parking lot with a restaurant since the restaurant is likely to have more demand in the evening when the office is closed.

Another opportunity to share parking could be the Town-owned property on Pennsylvania Avenue. Parking associated with the new Town Hall and on adjoining tracts could accommodate approximately 100 spaces. Since the office will be used mostly during the day, except for evening government meetings, the Town Hall lot will be empty during most evenings. The Town could utilize the empty spaces by allowing patrons of the restaurants in Old Town to park in the lot during the evenings.

Another solution, recommended in the Streetscape Master Plan for East Broad Way and South Loudoun Street, is to provide one or more public parking lots in Old Town. A new parking lot may be necessary, as the bike and pedestrian improvements in Town might not address the needs of visitors, including the residents of the surrounding area who travel to Town to shop and dine. This would either entail a public expenditure of funds or dedication of land by an owner or developer. There are several lots shown in Figure 18 that are in or near Old Town that could potentially accommodate new parking lots. Some of the lots are privately owned, so the Town would need to acquire the land. Two of the privately owned lots could be augmented with adjacent unused right-of-way land. Additionally, Oktoberfest Way could be vacated and added to the land that could potentially become parking a lot. It should be noted that the Town Square Master Plan recommends vacating that road. The Town should balance the opportunity for more commercial developments with the need for additional parking on the properties identified in the map.

![Figure 18. Map of potential sites for parking lots](image)
Chapter IX: Continued Cooperation

Goal six is to continue to work with county and state governments to improve and maintain the transportation network. The Town must work with several governments and government entities to effectively plan for its transportation needs. VDOT and Loudoun County are primary partners for the Town due to VDOT’s ownership of Town roads and the fact that the Town is situated in the County. Additionally, other governments and services in the region are important partners, including the National Capital Region Transportation Planning Board and the Maryland Department of Transportation (MDOT). Goal six affirms the Town’s relationships with these and other governments and government organizations as important planning partners.

Regional Partners

Loudoun County

The county is a significant partner for Lovettsville, given the Town’s location. The Town is responsible for its transportation planning functions but should be aware of Loudoun’s transportation priorities for the surrounding area. Lovettsville is in the county’s Rural Policy Area, per the Loudoun County 2019 Countywide Transportation Plan. The Town should take the design considerations laid out in the section, “Roadway Design Toolkit for Suburban, Transition, Rural Policy Areas, and Joint Land Management Areas”, of chapter two of the county’s transportation plan into consideration for its improvement projects. County plans for a countywide bikeway and trail network connections to the network could be a significant benefit and should be pursued as the countywide plan is developed. The County would also be a key partner in expanding commuter options and transit service for the Town, including the commuter shuttle service and the park and ride options described in Chapter II. Additionally, The County is a potential funding source for transportation projects in the Town.

Count transportation projects might impact the Town, such as the roundabout project for the intersection of Route 287 (Berlin Turnpike) and Route 9 (Charles Town Pike), which has nearly completed the design stage as of December 2020. Additionally, the development of the Lovettsville Community Park will affect the Town’s transportation network depending on the design of its trails and access roads. The new 15,000 square foot community center may also lead to more traffic on E. Broad Way.

VDOT

The Virginia Department of Transportation (VDOT) is responsible for maintaining streets within the Town’s corporate limits. Consequently, new streets must meet VDOT standards. The Town should undertake planning and coordination with VDOT to obtain a technical understanding of the transportation requirements for development.
in anticipation of development applications. Additionally, VDOT’s Northern Virginia Regional Bikeway and Trail Network Study includes the Town’s shared-use path (the existing segment and the segment planned in Project 9) in its regional bike network concept.

**Regional Partners**
The Town is in the National Capital Region Transportation Planning Board (TPB), the Metropolitan Planning Organization for metropolitan Washington. The TPB is a federally mandated planning entity that coordinates local, county, and regional planning efforts in the Washington D.C. urbanized region to ensure consistency in land use and transportation planning throughout the region. The TPB is a source of planning expertise that can assist the Town with its transportation planning, and the author of the region’s Long-Range Transportation Plan.

**Maryland Government Entities**
As discussed in the commuting section above, many residents travel to Brunswick, MD to use the MARC (Maryland Rail Commuter) service for commuting to work in Washington D.C. Lovettsville is roughly 3 miles from the Brunswick station on the Brunswick line, which provides weekday peak service into D.C. The station can be reached by car in about 6 minutes, or by bike in about 16 minutes. The bike network proposed in VDOT’s regional bike plan would make bike commuting to the station possible. The MARC service is overseen by the MDOT’s Maryland Transit Administration (MTA), making both entities important planning partners for the Town. The Town should continue to follow updates by the MTA regarding the Brunswick Line to stay abreast of changes that may affect its commuting residents.

**Regional Projects**
Table 7 summarizes relevant transportation projects in the region.

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>DESCRIPTION</th>
<th>POTENTIAL IMPACT ON THE TOWN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Route 9/287 Roundabout</td>
<td>Loudoun County is managing the construction of a roundabout at the intersection of Route 9 and Route 287 (Berlin Turnpike). The study is in the design phase is expected to be complete in Spring 2021.</td>
<td>Detours created during the construction phases may alter traffic patterns for traffic moving northbound on Berlin Turnpike to Lovettsville.</td>
</tr>
<tr>
<td>Proposed Regional Bike Route</td>
<td>As mentioned in Chapter IV, VDOT’s Northern Virginia Regional Bikeway and Trail Network Study includes a bike trail along Route 287 from Purcellville to the Maryland border. The route remains in the study after the 2015 update.</td>
<td>The Town’s existing and proposed shared-use paths on Berlin Turnpike could link to the County path to establish a connection for bicyclists. The segment north of the Town could allow residents to bike to the MARC station as part of their weekday commutes.</td>
</tr>
</tbody>
</table>
Chapter X: Project List and Implementation

Project list

Table 8 lists the projects recommended in the Transportation Master Plan, and Figure 19 shows their locations. The list provides planning-level project descriptions and cost estimates for projects 3 through 20. Project 1 and Project 2 are already in the design phases and will be presented to the community soon for their input. The Town should further refine projects 3 through 20 with additional engineering studies, which will present alternatives to the community for public input. Consequently, the descriptions and costs may change as the details of each site are studied and addressed, and as the community members express their preferences for the refined projects. Additionally, the projects are prioritized based on feedback from the Planning Commission. The project profiles included in the appendix further elaborate projects. Note that the cost estimates for Projects 3 through 20 have been rounded to the nearest ten thousand and any discrepancies between the total cost and the breakdowns are due to the rounding.
## Chapter X: Project List and Implementation

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<tr>
<th>MAP ID</th>
<th>TITLE</th>
<th>DESCRIPTION</th>
<th>FROM</th>
<th>TO</th>
<th>PRIORITY</th>
<th>COST</th>
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<tbody>
<tr>
<td>1</td>
<td>East Broad Way Phase 2</td>
<td>This project has been funded and is under design. The Town will complete the design, acquire easements, and construct improvements to East Broad Way, between Park Place and Church Street. Improvements will include sidewalks, curb, gutter, street lights, storm drainage, parking spaces, and landscaping. This project will also involve the relocation of utility poles.</td>
<td>North Light Street</td>
<td>Church Street</td>
<td>Underway</td>
<td>$2,709,282</td>
</tr>
<tr>
<td>2</td>
<td>South Church and East Pennsylvania Streetscape Improvements</td>
<td>This project has been funded and is under design. Improvements to South Church Street include curb and gutter, stormwater, sidewalks, and street lights. The storm lines will be sized branching off to East Pennsylvania Avenue to handle storm needs for an improved Town Office and/or a downtown parking lot.</td>
<td>Oktoberfest Way</td>
<td>East Broad Way (Route 673)</td>
<td>Underway</td>
<td>$1,176,000</td>
</tr>
<tr>
<td>3</td>
<td>South Loudoun Streetscape Improvements</td>
<td>Design and construct improvements to South Loudoun Street between the Elementary School and East Broad Way. Improvements will include construction of sidewalks, improved storm drainage, and minor roadway improvements. Improvements should include traffic calming measures.</td>
<td>Lovettsville Elementary School South Entrance</td>
<td>East Broad Way (Route 673)</td>
<td>Top Priority</td>
<td>$3,150,000</td>
</tr>
<tr>
<td>11</td>
<td>Town Square and West Broad Way Intersection</td>
<td>Study, design, and construct improvements to alleviate concerns about southbound vehicle conflicts. Improve pedestrian safety and accommodations across all legs of the intersection.</td>
<td>N Berlin Turnpike at West Broad Way</td>
<td>N/A</td>
<td>Top Priority</td>
<td>$300,000</td>
</tr>
<tr>
<td>12</td>
<td>Berlin Turnpike and South Loudoun Intersection</td>
<td>Explore alternatives for the intersection of Berlin Turnpike and South Loudoun Street. A roundabout and a realignment to &quot;T&quot; up the intersection should be studied. Install a crosswalk (requires formal mid-block crossing study) from the shared-use path on Berlin Turnpike to the eastern side of South Loudoun Street. Include gateway placemaking elements. This project includes planning, design, and construction.</td>
<td>Berlin Turnpike (Route 287) at S Loudoun Street</td>
<td>N/A</td>
<td>Top Priority</td>
<td>Alternative 1: $6,070,000 Alternative 2: $2,720,000</td>
</tr>
<tr>
<td>13</td>
<td>South Loudoun School Sidewalk</td>
<td>Construct a sidewalk on South Loudoun Street to connect the shared-use path on Berlin Turnpike to the south entrance of Lovettsville Elementary School. This should be completed after the redesign of the Berlin Turnpike and South Loudoun Street intersection, or as part of that project. The alignment will depend on the intersection redesign and could traverse the parcel to west of the school. This project includes planning, design, and construction.</td>
<td>Berlin Turnpike (Route 287)</td>
<td>Lovettsville Elementary School</td>
<td>High Priority</td>
<td>$680,000</td>
</tr>
<tr>
<td>MAP ID</td>
<td>TITLE</td>
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<td>5</td>
<td>Town Square Sidewalk Extension</td>
<td>Add an approximately 180' long, 8-10' wide sidewalk link on the northeast side of the Town Square and widen the existing eastern sidewalk to 8-10'. This project includes planning, design, and construction.</td>
<td>Town Square North Intersection</td>
<td>Town Square East Intersection</td>
<td>High Priority</td>
<td>$140,000</td>
</tr>
<tr>
<td>7</td>
<td>Old Town One-Way Conversion</td>
<td>Evaluate one-way conversions on Old Town streets. One-way streets would consist of a single travel-lane with space for pedestrians and/or cyclists. One-way conversions will be consistent with streetscape improvements on South Church Street, East Pennsylvania Avenue, South Loudoun Street, and South Locust Street. The Town should pursue a traffic study to determine feasibility and design.</td>
<td>TBD</td>
<td>TBD</td>
<td>High Priority</td>
<td>$15,000</td>
</tr>
<tr>
<td>4</td>
<td>Locust Streetscape Improvements</td>
<td>Plan, design and construct improvements to Locust Street between the South Loudoun Street and East Broad Way. Improvements will include construction of sidewalks, improved storm drainage, and minor roadway improvements.</td>
<td>South Loudoun Street</td>
<td>East Broad Way (Route 673)</td>
<td>Medium Priority</td>
<td>$1,330,000</td>
</tr>
<tr>
<td>6</td>
<td>Crosswalk Studies</td>
<td>Acquire funding and conduct studies to assess the necessity of crosswalks at the identified locations. Construct crossings where warranted, including necessary ADA ramps and other traffic control devices. Some of the recommended projects might address the needs at some of the study locations.</td>
<td>TBD</td>
<td>TBD</td>
<td>Medium Priority</td>
<td>$40,000</td>
</tr>
<tr>
<td>8</td>
<td>Berlin Turnpike Shared-Use Path Extension</td>
<td>Extend the shared-use path on Berlin Turnpike (Route 287) to connect the existing shared-use path to the Town Square. A 250-foot long, 8-10' wide trail segment would complete the pedestrian connections in this portion of the network. This project would require acquiring right-of-way. This project includes planning, design, and construction.</td>
<td>Hammond Drive</td>
<td>Town Square</td>
<td>Medium Priority</td>
<td>$130,000</td>
</tr>
<tr>
<td>9</td>
<td>Berlin Turnpike North Shared-Use Path</td>
<td>Design and construct an 8-10' wide shared-use path between the Town Square and Tilgham Place along North Berlin Turnpike (Route 287) to complete the connection to the Town Square. The path will have a paved surface and will add curbs and gutters along Berlin Turnpike. This project includes planning, design, and construction.</td>
<td>West Broad Way (Route 673)</td>
<td>Tilgham Place</td>
<td>Medium Priority</td>
<td>$1,960,000</td>
</tr>
<tr>
<td>19</td>
<td>West Broad Way Sidewalk</td>
<td>Install a 540' long, 5' wide sidewalk along the northern side of West Broad Way to the existing curb cut at the intersection with Berlin Turnpike. This project includes planning, design, and construction.</td>
<td>Existing sidewalk</td>
<td>Berlin Turnpike (Route 287)</td>
<td>Medium Priority</td>
<td>$110,000</td>
</tr>
<tr>
<td>MAP ID</td>
<td>TITLE</td>
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<tr>
<td>20</td>
<td>East Broad Way Sidewalk</td>
<td>Install a 160’ long, 5’ wide sidewalk from the sidewalk that will be installed per the East Broad Way and South Church Street streetscape improvement project to the existing curb cut on Town Square. This project includes planning, design, and construction.</td>
<td>South Church Street</td>
<td>Town Square</td>
<td>Medium Priority</td>
<td>$230,000</td>
</tr>
<tr>
<td>10</td>
<td>East Shared-Use Path Extension</td>
<td>Extend the shared-use path east of the elementary school to Frye Court to connect the residents along Frye Court to the Lovettsville Elementary School shared-use path. This project includes planning, design, and construction.</td>
<td>Frye Court</td>
<td>Lovettsville Community Park Trail</td>
<td>Low Priority</td>
<td>$160,000</td>
</tr>
<tr>
<td>14</td>
<td>Cooper Run Speed Study</td>
<td>Conduct a long-term speed study on Cooper Run to verify residents' concerns of speeding.</td>
<td>West Broad Way (Route 673)</td>
<td>Tilgham Place</td>
<td>Low Priority</td>
<td>$3,500</td>
</tr>
<tr>
<td>15</td>
<td>Berlin Turnpike Shared-Use Path Lighting</td>
<td>Install pedestrian-scaled streetlights along the shared-use path on South Berlin Turnpike. This project includes planning, design, and construction.</td>
<td>South Loudoun Street</td>
<td>Hammond Drive</td>
<td>Low Priority</td>
<td>$200,000</td>
</tr>
<tr>
<td>16</td>
<td>School Path Pedestrian Lighting</td>
<td>Install pedestrian-scaled streetlights along the shared-use path east of Lovettsville Elementary School. This project includes planning, design, and construction.</td>
<td>East Broad Way (Route 673)</td>
<td>Lovettsville Elementary School</td>
<td>Low Priority</td>
<td>$160,000</td>
</tr>
<tr>
<td>17</td>
<td>Frye Court Pedestrian Lighting</td>
<td>Add pedestrian lighting along Frye Court. This should be completed after or concurrently with the extension of the school shared-use path to Frye Court. This project includes planning, design, and construction.</td>
<td>Frye Court</td>
<td>East Broad Way (Route 673)</td>
<td>Low Priority</td>
<td>$80,000</td>
</tr>
<tr>
<td>18</td>
<td>South Church Sidewalk Widening</td>
<td>Widen the existing sidewalk to 10’ to accommodate bikes along with pedestrians.</td>
<td>Berlin Turnpike (Route 287)</td>
<td>Oktoberfest Way</td>
<td>Low Priority</td>
<td>$60,000</td>
</tr>
</tbody>
</table>
**Funding**

There are various funding options available to finance the Town’s transportation projects. Due to dwindling public funds, this Master Plan emphasizes cost-effective solutions that provide the greatest benefit per dollar. Being in the Metropolitan Planning Area, Lovettsville qualifies for federal funds, through the Region’s Long Range Transportation Plan process. **Table 9** below summarizes funding resources available to the Town.

<table>
<thead>
<tr>
<th>FUNDING SOURCE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMART SCALE</td>
<td>SMART SCALE is a state funding program that uses a statewide prioritization process to evaluate projects based on a set of key factors. There are two main pathways to funding within the SMART SCALE process—the construction District Grant Program (DGP) and the High Priority Projects Program (HPPP). The State prioritizes projects under the DGP from the same construction district. For an entity applying for funds from the HPPP, the State projects with others, statewide. The Town can apply for funding directly or through Loudoun County or the TPB. Project types can include highway improvements such as widening, operational improvements, access management, intelligent transportation systems, transit and rail capacity expansion, and transportation demand management, including park and ride facilities. For more information: <a href="http://smartscale.org/">http://smartscale.org/</a></td>
</tr>
</tbody>
</table>
| Highway Safety Improvements Program (HSIP) | HSIP is a federal funding program that aims to reduce fatal and serious injuries on all public roads. The federal government provides 90% to 100% of the costs of eligible projects. VDOT HSIP will cover the remaining 10% for qualifying projects. VDOT HSIP is comprised of three funding programs:  
  » Highway Safety Program,  
  » Bicycle and Pedestrian Safety Improvement, and  
  » Highway-Rail Grade Crossing Safety Program.  
Eligible projects include safety improvements on roads with above average total and injury crashes, which can be identified through a range of resources provided by VDOT HSIP. For more information: [http://www.virginiadot.org/business/tef_app_pro.asp](http://www.virginiadot.org/business/tef_app_pro.asp) |
<table>
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<tr>
<th>FUNDING SOURCE</th>
<th>DESCRIPTION</th>
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</thead>
<tbody>
<tr>
<td>Transportation Alternatives Program (TAP)</td>
<td>TAP is a federal funding program, administered by VDOT, that aims to help local governments fund community-based projects that expand infrastructure and services for non-automotive travel, or that mitigate negative effects of automotive travel. TAP funding is reimbursable, meaning that localities must first pay for the project and then apply for a refund for up to 80% of the project cost. VDOT administers TAP funds for a range of projects, including bike and pedestrian projects.</td>
</tr>
<tr>
<td></td>
<td>For more information: <a href="http://www.virginiadot.org/business/resources/transportation_enhancement/Transportation_Alternatives_Program_Guide.pdf">http://www.virginiadot.org/business/resources/transportation_enhancement/Transportation_Alternatives_Program_Guide.pdf</a></td>
</tr>
<tr>
<td>Revenue Sharing</td>
<td>Revenue Sharing is a VDOT funding program that provides 50% of the cost for improvements to the state highway system.</td>
</tr>
<tr>
<td></td>
<td>For more information: <a href="http://www.virginiadot.org/business/local-assistance-access-programs.asp">http://www.virginiadot.org/business/local-assistance-access-programs.asp</a></td>
</tr>
<tr>
<td>VDOT Road Maintenance</td>
<td>The VDOT Road maintenance category of funding covers a wide variety of maintenance and operations activities. Road maintenance funds comprise the majority of VDOT’s scheduled funding (versus new construction). Road maintenance funding addresses needs having to do with pavement management, signals, pavement markings, signs, stripes, guardrails, and ITS (Intelligent Transportation Systems), assets that are of critical safety and operational importance. Maintenance funding also addresses operation services comprising ordinary and preventative maintenance work such as cleaning ditches, washing bridge decks, patching potholes, debris removal, snow and ice removal, emergency response, incident management, mowing, and equipment management.</td>
</tr>
<tr>
<td></td>
<td>For more information: <a href="http://www.virginiadot.org/business/local-assistance-access-programs.asp">http://www.virginiadot.org/business/local-assistance-access-programs.asp</a></td>
</tr>
<tr>
<td>Safe Routes to School (SRTS)</td>
<td>SRTS is also a TAP funding program administered by VDOT. SRTS funds infrastructure and non-infrastructure projects that enable and encourage children up to eighth grade to safely walk or bike to school. Improvement projects within 2 miles of Lovettsville elementary school would be eligible.</td>
</tr>
<tr>
<td>FUNDING SOURCE</td>
<td>DESCRIPTION</td>
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</tr>
<tr>
<td>Development Proffer</td>
<td>Developer contributions, known as proffers, provide one source of funding for capital facilities. Proffers are typically cash amounts, dedicated land, and/or in-kind services that are voluntarily granted to the locality to partially offset future capital facility costs associated with specific land developments. Recent legislation has limited local government’s ability to receive proffers, but through the rezoning process developers may still consider providing transportation infrastructure improvements. Proffers are limited to developments that require zoning map amendments.</td>
</tr>
<tr>
<td>Recreational Trails Program (RTP)</td>
<td>RTP is a funding program under TAP that is administered by the Virginia Department of Conservation and Recreation (DCR). RTP funds projects that build or rehabilitate trails and related facilities. For more information: <a href="https://www.dcr.virginia.gov/recreational-planning/trailfund">https://www.dcr.virginia.gov/recreational-planning/trailfund</a></td>
</tr>
<tr>
<td>Loudoun County</td>
<td>The Town is located within the County, so the County is a potential funding source for projects. Additionally, The County owns land in the town, including the elementary school and the Lovettsville Community Park.</td>
</tr>
</tbody>
</table>
# APPENDIX TABLE OF CONTENTS

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Appendix A: Project Profiles
**EAST BROAD WAY PHASE 2**

$2,709,282

**LOCATION**
From: North Light Street  
To: Church Street

**PROJECT DESCRIPTION**
This project has been funded and is under design. The Town will complete the design, acquire easements, and construct improvements to East Broad Way, between Park Place and Church Street. Improvements will include sidewalks, curb, gutter, street lights, storm drainage, parking spaces, and landscaping. This project will also involve the relocation of utility poles.

**DEFICIENCIES & NEEDS**
The project improves walkability, stormwater management, and other streetscape elements.

**OBJECTIVES MET**
- Objective 1.1: Expand sidewalks
- Objective 3.1: Improve stormwater
- Objective 3.4: Enhance the Town’s sense of place

**SOURCES**
- FY22-FY26 Capital Improvements Plan, Project GF2

**FUNDING DETAILS**
Per the CIP, the remainder of the project will be funded through Town capital funds and funding acquired from VDOT and Loudoun County. Funds will be outlaid over fiscal years 2021 through 2024 to complete the project.
#2  SOUTH CHURCH AND EAST PENNSYLVANIA STREETSCAPE IMPROVEMENTS

$1,176,000

LOCATION
From: Oktoberfest Way
To: East Broad Way

PROJECT DESCRIPTION
This project has been funded and is under design. Improvements to South Church Street include curb and gutter, stormwater, sidewalks and street lights. The storm lines will be sized branching off to East Pennsylvania to handle storm needs for an improved Town Office and/or a downtown parking lot.

DEFICIENCIES & NEEDS
The project improves walkability, stormwater management, and other streetscape elements.

OBJECTIVES MET
• Objective 1.1: Expand sidewalks
• Objective 3.1: Improve stormwater

SOURCES
• FY22-FY26 Capital Improvements Plan, Project GF3

FUNDING DETAILS
Per the CIP, the remainder of the project will be funded through Town capital funds and funding acquired from Loudoun County. Funds will be outlaid over fiscal years 2021 through 2024 to complete the project.
#3 SOUTH LOUDOUN STREETSCAPE IMPROVEMENTS

LOCATION
From: Lovettsville Elementary School South Entrance
To: East Broad Way

PROJECT DESCRIPTION
Design and construct improvements to South Loudoun Street between the Elementary School and East Broad Way. Improvements will include construction of sidewalk, improved storm drainage, and minor roadway improvements. Improvements should include traffic calming measures.

SOURCES
- FY22-FY26 Capital Improvements Plan, Project GF4
- Community Survey

DEFICIENCIES & NEEDS
The corridor lacks sidewalks. Lovettsville Elementary lacks pedestrian access. There are also reported issues with drainage. Additionally, the speed counts revealed speeding along this road.

OBJECTIVES MET
- Objective 1.1: Expand sidewalks
- Objective 3.1: Improve stormwater

FUNDING DETAILS
Funds will be requested through Loudoun County for the preliminary Engineering. Funds will be requested from VDOT for the construction. The Town will provide for the utility upgrades. Safe Routes to School is a potential funding source. The project could be phased.

COST
$3,150,000
Construction: $1,900,000
Engineering and CEI: $570,000
Contingencies: $380,000
Right-of-Way: $190,000
Utilities: $100,000
#4 Locust Streetscape improvements

**Location**
- From: South Loudoun Street
- To: East Broad Way

**Project Description**
Design and construct improvements to South Locust Street between South Loudoun Street and East Broad Way (Route 673). Improvements will include the construction of sidewalks, improved storm drainage, and minor roadway improvements. Improvements will accommodate a one-way conversion with dedicated pedestrian spaces.

**Sources**
- FY22-FY26 Capital Improvements Plan, Project GF4
- Community survey

**Objectives Met**
- Objective 1.1: Expand sidewalks
- Objective 3.1: Improve stormwater

**Deficiencies & Needs**
The corridor lacks stormwater management features, such as curbs and gutters, as well as pedestrian features. The survey respondents expressed concerns about standing water after storms. Respondents also expressed a desire for increased walkability throughout the town.

**Funding Details**
Funds will be requested through Loudoun County for the preliminary Engineering. Funds will be requested from VDOT for the construction. The Town will provide for the utility upgrades.

**Cost**
$1,330,000
- Construction: $800,000
- Engineering and CEI: $240,000
- Contingencies: $160,000
- Right-of-Way: $80,000
- Utilities: $50,000

---

**Existing Typical Section**
- 9'
- 9'

**Proposed Typical Section**
- 36' R/W (minimum)
- 5'
- 3'
- 1.5'
- 1.5'
- 10'
- 10'
- Travel Lane
- Travel Lane
- Curb & Gutter
- Grass Buffer & Utilities

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**Diagram**
- Section Location
- South Loudoun St
- Locust St
- E Broad Way

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Lovettsville Transportation Master Plan  Appendix A: Project Profiles
#5 TOWN SQUARE SIDEWALK EXTENSION

**LOCATION**
From: Town Square North Intersection  
To: Town Square East Intersection

**PROJECT DESCRIPTION**
Add an approximately 180’ long, 8-10’ wide sidewalk link on the northeast side of the Town Square and widen the existing eastern sidewalk to 8-10’. This project includes planning, design, and construction.

**COST**
$140,000  
Construction: $90,000  
Engineering and CEI: $30,000  
Contingencies: $20,000  
Right-of-Way: N/A  
Utilities: N/A

**SOURCES**
• Town Square Master Plan

**DEFICIENCIES & NEEDS**
The connection will complete the sidewalks planned in the Town Square Master Plan. Additionally, the sidewalk widening and the new segment create the middle link of the shared-use path that will run through the town after Project #9 is completed.

**OBJECTIVES MET**
• Objective 1.1: Expand sidewalks

**FUNDING DETAILS**
Capital Improvements Plan, future fiscal years.
#6 CROSSWALK STUDIES

**LOCATION**
From: Varies  
To: Varies

**PROJECT DESCRIPTION**
Acquire funding and conduct studies to assess the necessity of crosswalks at the identified locations. Construct crossings where warranted, including necessary ADA ramps and other traffic control devices. Some of the recommended projects might address the needs at some of the study locations.

**DEFICIENCIES & NEEDS**
Survey responses and site visits indicate the need for crosswalks at a number of locations throughout the town. Formal mid-block crossing studies will need to be conducted for new mid-block crosswalks.

**COST**
$40,000  
Construction: N/A  
Engineering and CEI: N/A  
Contingencies: N/A  
Right-of-Way: N/A  
Utilities: N/A

**SOURCES**
- Community Survey  
- Site visits  
- Town of Lovettsville Pedestrian Accessibility Study

**OBJECTIVES MET**
- Objective 1.1: Expand sidewalks

**FUNDING DETAILS**
If studied together, the study cost could be $4,000 per location.
#7 OLD TOWN ONE-WAY CONVERSION

## LOCATION

From: TBD  
To: TBD

## SOURCES

- Planning Commission

## OBJECTIVES MET

- Objective 3.2: Explore one-way conversions in Old Town

## PROJECT DESCRIPTION

Evaluate one-way conversions on Old Town streets. One-way streets would consist of a single travel-lane with space for pedestrians and/or cyclists. One-way conversions will be consistent with streetscape improvements on South Church Street, East Pennsylvania Avenue, South Loudoun Street, and South Locust Street. The Town should pursue a traffic study to determine feasibility and design. This project includes planning, design, and construction.

## DEFICIENCIES & NEEDS

Old Town streets are narrow, with structures close to existing travel ways. There is insufficient space for two-way traffic and pedestrians. One-way conversions would allow for cost-effective solutions for pedestrian connections. Traffic counts suggest that one-way conversions are feasible. Additional traffic data and commentary is in the appendix.

## COST

$15,000  
Construction: N/A  
Engineering and CEI: N/A  
Contingencies: N/A  
Right-of-Way: N/A  
Utilities: N/A

## FUNDING DETAILS

A traffic study with a public meeting could cost $15,000. Implementation will include new signage, pavement markings. If only directional signs and pavement markings are needed, then CIP. If other improvements are needed, then consider Revenue Share grants.
#8 BERLIN TURNPIKE SHARED-USE PATH EXTENSION  

**LOCATION**
From: Hammond Drive  
To: Town Square

**PROJECT DESCRIPTION**
Extend the shared-use path on Berlin Turnpike (Route 287) to connect the existing shared-use path to the Town Square. A 250-foot long, 8-10’ wide trail segment would complete the pedestrian connections in this portion of the network. This project would require acquiring right-of-way. This project includes planning, design, and construction.

**DEFICIENCIES & NEEDS**
The existing shared-use path on the southern segment of Berlin Turnpike terminates just south of the Town Square. This additional link will increase walkability and off-street bicycle access to the Town Square.

**COST**
$130,000  
Construction: $80,000  
Engineering and CEI: $20,000  
Contingencies: $20,000  
Right-of-Way: $10,000  
Utilities: N/A

**FUNDING DETAILS**
Developer proffer, CIP, Transportation Alternatives, or Revenue Share are all potential funding methods for this project.
#9 BERLIN TURNPIKE NORTH SHARED-USE PATH

**LOCATION**
From: West Broad Way
To: Tilgham Place

**PROJECT DESCRIPTION**
Design and construct an 8-10’ wide shared-use path between the Town Square and Tilgham Place along North Berlin Turnpike (Route 287) to complete the connection to the Town Square. The path will have a paved surface and will add curbs and gutters along Berlin Turnpike. This project includes planning, design, and construction.

**DEFICIENCIES & NEEDS**
Currently, there are no direct pedestrian connections between the Town Square and northern neighborhoods. There is evidence of pedestrians traveling along the roadway shoulders or grass.

**SOURCES**
- FY22-FY26 Capital Improvements Plan, Project GF18

**OBJECTIVES MET**
- Objective 1.2: Extend multiuse trails

**FUNDING DETAILS**
VDOT’s Transportation Alternatives program and Smart Scale are potential funding sources.

**COST**
$1,960,000
- Construction: $1,230,000
- Engineering and CEI: $370,000
- Contingencies: $250,000
- Right-of-Way: $130,000
- Utilities: N/A
#10 EAST SHARED-USE PATH EXTENSION

**LOCATION**
From: Frye Court
To: Lovettsville Community Park Trail

**PROJECT DESCRIPTION**
Extend the shared-use path east of the elementary school to Frye Court to connect the residents along Frye Court to the Lovettsville Elementary School shared-use path. This project includes planning, design, and construction.

**DEFICIENCIES & NEEDS**
Currently, there is one direct pedestrian connection to Lovettsville Elementary School through Lovettsville Park. Additional trail connections may be possible, per the Walk-About Report.

**COST**
$160,000
- Construction: $100,000
- Engineering and CEI: $30,000
- Contingencies: $20,000
- Right-of-Way: $10,000
- Utilities: N/A

**FUNDING DETAILS**
CIP, Safe Routes to School grant, or Transportation Alternatives grant could fund this project.

**SOURCES**
- Safe Routes to School Walk-About Report

**OBJECTIVES MET**
- Objective 1.2: Extend multiuse trails

**LOW PRIORITY**

**LOCATION**
From: Frye Court
To: Lovettsville Community Park Trail

**PROJECT DESCRIPTION**
Extend the shared-use path east of the elementary school to Frye Court to connect the residents along Frye Court to the Lovettsville Elementary School shared-use path. This project includes planning, design, and construction.

**DEFICIENCIES & NEEDS**
Currently, there is one direct pedestrian connection to Lovettsville Elementary School through Lovettsville Park. Additional trail connections may be possible, per the Walk-About Report.

**COST**
$160,000
- Construction: $100,000
- Engineering and CEI: $30,000
- Contingencies: $20,000
- Right-of-Way: $10,000
- Utilities: N/A

**FUNDING DETAILS**
CIP, Safe Routes to School grant, or Transportation Alternatives grant could fund this project.

**SOURCES**
- Safe Routes to School Walk-About Report

**OBJECTIVES MET**
- Objective 1.2: Extend multiuse trails

**LOW PRIORITY**
#11 TOWN SQUARE AND WEST BROAD WAY INTERSECTION

**LOCATION**
N Berlin Turnpike at West Broad Way

**SOURCES**
- Community Survey
- Planning Commission

**OBJECTIVES MET**
- Objective 2.4: Explore how to improve the Town’s most dangerous intersections.
- Objective 3.3: Improve traffic movement through Town Square

**PROJECT DESCRIPTION**
Study, design, and construct improvements to alleviate concerns about southbound vehicle conflicts. Improve pedestrian safety and accommodations across all legs of the intersection.

**DEFICIENCIES & NEEDS**
Many residents identified this intersection as confusing or dangerous in the survey. Alternative intersection may be possible, per site visits, community survey, and Planning Commission members.

**COST**
$300,000
Construction: $200,000
Engineering and CEI: $60,000
Contingencies: $40,000
Right-of-Way: N/A
Utilities: N/A

**FUNDING DETAILS**
The cost estimate is for the study. CIP, VDOT Maintenance (signing and marking when repaving), Revenue Share grant could fund this project.

**LOCATION**
N Berlin Turnpike at West Broad Way
#12 BERLIN TURNPIKE AND SOUTH LOUDOUN INTERSECTION

LOCATION
Berlin Turnpike at South Loudoun Street

PROJECT DESCRIPTION
Explore alternatives for the intersection of Berlin Turnpike and South Loudoun Street. A roundabout and a realignment to “T” up the intersection should be studied. Install a crosswalk (requires formal mid-block crossing study) from the shared-use path on Berlin Turnpike to the eastern side of South Loudoun Street. Include gateway placemaking elements. This project includes planning, design, and construction.

ALTERNATIVE 1 COST
$6,070,000
Construction: $3,930,000
Engineering and CEI: $1,180,000
Contingencies: $790,000
Right-of-Way: $170,000
Utilities: $10,000

SOURCES
• Town Planning Commission
• Town of Lovettsville Pedestrian Accessibility Study

DEFICIENCIES & NEEDS
The current geometry of the intersection may contribute to the speeding observed on South Loudoun Street. Both alternatives would slow cars entering the Town. The roundabout would provide the opportunity to enhance the signs and install other gateway elements that notify drivers that they are entering the Town.

OBJECTIVES MET
• Objective 2.4: Explore how to improve the Town’s most dangerous intersections.

FUNDING DETAILS
CIP funds could be used for the alternatives/concept study (approx. $25,000). Revenue Share, Smart Scale, or developer proffer if the opportunity arises could fund the improvements. For Alternative 2, vehicle volumes could warrant a left turn lane for southbound traffic on Berlin Turnpike, which could significantly increase the project cost.
#12 BERLIN TURNPIKE AND SOUTH LOUDOUN INTERSECTION

**LOCATION**
Berlin Turnpike at South Loudoun Street

**PROJECT DESCRIPTION**
Explore alternatives for the intersection of Berlin Turnpike and South Loudoun Street. A roundabout and a realignment to “T” up the intersection should be studied. Install a crosswalk (requires formal mid-block crossing study) from the shared-use path on Berlin Turnpike to the eastern side of South Loudoun Street. Include gateway placemaking elements. This project includes planning, design, and construction.

**DEFICIENCIES & NEEDS**
The current geometry of the intersection may contribute to the speeding observed on South Loudoun Street. Both alternatives would slow cars entering the Town. The roundabout would provide the opportunity to enhance the signs and install other gateway elements that notify drivers that they are entering the Town.

**OBJECTIVES MET**
- Objective 2.4: Explore how to improve the Town’s most dangerous intersections.

**ALTERNATIVE 2 COST**
$2,720,000
Construction: $1,720,000
Engineering and CEI: $520,000
Contingencies: $340,000
Right-of-Way: $120,000
Utilities: $10,000

**FUNDING DETAILS**
CIP funds could be used for the alternatives/concept study (approx. $25,000). Revenue Share, Smart Scale, or developer proffer if the opportunity arises could fund the improvements. For Alternative 2, vehicle volumes could warrant a left turn lane for southbound traffic on Berlin Turnpike, which could significantly increase the project cost.

**SOURCES**
- Town Planning Commission
- Town of Lovettsville Pedestrian Accessibility Study

**SOURCE**
- Town Planning Commission
- Town of Lovettsville Pedestrian Accessibility Study

**LOCATION**
Berlin Turnpike at South Loudoun Street

**PROJECT DESCRIPTION**
Explore alternatives for the intersection of Berlin Turnpike and South Loudoun Street. A roundabout and a realignment to “T” up the intersection should be studied. Install a crosswalk (requires formal mid-block crossing study) from the shared-use path on Berlin Turnpike to the eastern side of South Loudoun Street. Include gateway placemaking elements. This project includes planning, design, and construction.

**DEFICIENCIES & NEEDS**
The current geometry of the intersection may contribute to the speeding observed on South Loudoun Street. Both alternatives would slow cars entering the Town. The roundabout would provide the opportunity to enhance the signs and install other gateway elements that notify drivers that they are entering the Town.

**OBJECTIVES MET**
- Objective 2.4: Explore how to improve the Town’s most dangerous intersections.

**ALTERNATIVE 2 COST**
$2,720,000
Construction: $1,720,000
Engineering and CEI: $520,000
Contingencies: $340,000
Right-of-Way: $120,000
Utilities: $10,000

**FUNDING DETAILS**
CIP funds could be used for the alternatives/concept study (approx. $25,000). Revenue Share, Smart Scale, or developer proffer if the opportunity arises could fund the improvements. For Alternative 2, vehicle volumes could warrant a left turn lane for southbound traffic on Berlin Turnpike, which could significantly increase the project cost.

**SOURCES**
- Town Planning Commission
- Town of Lovettsville Pedestrian Accessibility Study

**SOURCE**
- Town Planning Commission
- Town of Lovettsville Pedestrian Accessibility Study
#13 SOUTH LOUDOUN SCHOOL SIDEWALK

**LOCATION**
- From: Berlin Turnpike
- To: Lovettsville Elementary School

**PROJECT DESCRIPTION**
Construct a sidewalk on South Loudoun Street to connect the shared-use path on Berlin Turnpike to the south entrance of Lovettsville Elementary School. This should be completed after the redesign of the Berlin Turnpike and South Loudoun Street intersection, or as part of that project. The alignment will depend on the intersection redesign and could traverse the parcel to west of the school. This project includes planning, design, and construction.

**DEFICIENCIES & NEEDS**
There is no sidewalk on S Loudoun St. This would allow children living near the existing shared-use path on Berlin Turnpike to walk to school. The walkway would also create a bicycle and pedestrian connection to the regional park.

**COST**
$680,000
- Construction: $400,000
- Engineering and CEI: $120,000
- Contingencies: $80,000
- Right-of-Way: $40,000
- Utilities: $40,000

**OBJECTIVES MET**
- Objective 1.1: Expand sidewalks

**SOURCES**
- Town of Lovettsville Pedestrian Accessibility Study

**FUNDING DETAILS**
Safe Routes to School is a potential funding source.

**LOCATION**
- From: Berlin Turnpike
- To: Lovettsville Elementary School

**DEFICIENCIES & NEEDS**
There is no sidewalk on S Loudoun St. This would allow children living near the existing shared-use path on Berlin Turnpike to walk to school. The walkway would also create a bicycle and pedestrian connection to the regional park.

**COST**
$680,000
- Construction: $400,000
- Engineering and CEI: $120,000
- Contingencies: $80,000
- Right-of-Way: $40,000
- Utilities: $40,000

**OBJECTIVES MET**
- Objective 1.1: Expand sidewalks

**SOURCES**
- Town of Lovettsville Pedestrian Accessibility Study

**FUNDING DETAILS**
Safe Routes to School is a potential funding source.
**COOPER RUN SPEED STUDY**

**LOCATION**
From: West Broad Way  
To: Tilgham Place

**PROJECT DESCRIPTION**
Conduct a long-term speed study on Cooper Run to verify residents’ concerns of speeding.

**DEFICIENCIES & NEEDS**
Survey respondents and planning commissioners expressed concerns about drivers speeding down the street, likely as they try to avoid Town Square. The 2-day speed study conducted during the Master Plan did not document high levels of speeding, so a longer-term study may be needed.

**SOURCES**
- Community Survey
- Planning Commission
- Speed Study

**OBJECTIVES MET**
- Objective 2.2: Explore traffic calming strategies

**FUNDING DETAILS**
CIP, Revenue Share or Transportation Alternatives could fund the curb extensions to decrease pedestrian crossing distances.

**COST**
3,500
Construction: N/A  
Engineering and CEI: N/A  
Contingencies: N/A  
Right-of-Way: N/A  
Utilities: N/A
#15 BERLIN TURNPIKE SHARED-USE PATH LIGHTING

**LOCATION**
From: South Loudoun Street
To: Hammond Drive

**PROJECT DESCRIPTION**
Install pedestrian-scaled streetlights along the shared-use path on South Berlin Turnpike. This project includes planning, design, and construction.

**DEFICIENCIES & NEEDS**
Existing lighting is scaled and spaced to vehicles, leaving some portions of the path poorly lit for pedestrians and cyclists.

**OBJECTIVES MET**
- Objective 2.5: Improve lighting on sidewalks and shared-use paths
- Objective 3.4: Enhance the Town’s sense of place

**COST**
$200,000
Construction: $140,000
Engineering and CEI: $40,000
Contingencies: $30,000
Right-of-Way: N/A
Utilities: N/A

**FUNDING DETAILS**
The Safe Routes to School Program could be a funding source. The Town would need to allocate funds in the Capital Improvements Plan. Engineering will determine more accurate costs and potential conflicts with utilities. The improvements would be limited to the existing right-of-way.

**SOURCES**
- Site Visit

**SOURCES**
- Site Visit
#16 SCHOOL PATH PEDESTRIAN LIGHTING

**LOCATION**
From: East Broad Way  
To: Lovettsville Elementary School

**PROJECT DESCRIPTION**
Install pedestrian-scaled streetlights along the shared-use path east of Lovettsville Elementary School. This project includes planning, design, and construction.

**DEFICIENCIES & NEEDS**
The path currently lacks lighting. Adding pedestrian-scale lighting would increase its usefulness.

**COST**
$160,000  
Construction: $100,000  
Engineering and CEI: $30,000  
Contingencies: $20,000  
Right-of-Way: $10,000  
Utilities: N/A

**SOURCES**
- Safe Routes to School Walk-About Report

**OBJECTIVES MET**
- Objective 2.5: Improve lighting on sidewalks and shared-use paths  
- Objective 3.4: Enhance the Town’s sense of place

**FUNDING DETAILS**
The Safe Routes to School Program could be a funding source. The Town would need to allocate funds in the Capital Improvements Plan and partner with the County, as these improvements would be on the park property.
#17 FRYE COURT PEDESTRIAN LIGHTING

**Location**
From: Frye Court  
To: East Broad Way

**Project Description**
Add pedestrian lighting along Frye Court. This should be completed after or concurrently with the extension of the school shared-use path to Frye Court. This project includes planning, design, and construction.

**Deficiencies & Needs**
There are no streetlights on the road. Adding pedestrian-scale lighting would increase walkability along the road, which will be especially important once the park connections are made.

**Cost**
$80,000  
Construction: $50,000  
Engineering and CEI: $10,000  
Contingencies: $10,000  
Right-of-Way: $10,000  
Utilities: N/A

**Objectives Met**
- Objective 2.5: Improve lighting on sidewalks and shared-use paths  
- Objective 3.4: Enhance the Town’s sense of place

**Sources**
- Safe Routes to School Walk-About Report

**Funding Details**
The Safe Routes to School Program could be a funding source. The Town would need to allocate funds in the Capital Improvements Plan. Engineering will determine more accurate costs and potential conflicts with utilities.
**SOUTH CHURCH SIDEWALK WIDENING**

**LOCATION**
- From: Berlin Turnpike
- To: Oktoberfest Way

**PROJECT DESCRIPTION**
Widen the existing sidewalk to 10’ to accommodate bikes along with pedestrians.

**DEFICIENCIES & NEEDS**
Survey respondents expressed a desire for more bike connectivity. A bike facility here would connect users of the existing shared-use path on Berlin Tpke to Old Town. A widened sidewalk would be a preferred alternative here given the lack of space for on-street bike lanes.

**COST**
$60,000
- Construction: $40,000
- Engineering and CEI: $10,000
- Contingencies: $10,000
- Right-of-Way: N/A
- Utilities: N/A

**FUNDING DETAILS**
The Capital Improvements Plan may be the best funding approach for this project. The Town could bundle additional bike and pedestrian improvements into a SMART SCALE application or an enhancement grant. Improvements would occur within the existing right-of-way. Engineering would identify any potential conflicts with underground utilities.

**OBJECTIVES MET**
- Objective 1.3: Create a bike lane network

**SOURCES**
- Community Survey
#19 WEST BROAD WAY SIDEWALK

LOCATION
From: Existing sidewalk
To: Berlin Turnpike

PROJECT DESCRIPTION
Install a 540’ long, 5’ wide sidewalk along the northern side of West Broad Way to the existing curb cut at the intersection with Berlin Turnpike. This project includes planning, design, and construction.

DEFICIENCIES & NEEDS
The sidewalk on the northern side of West Broad Way leading towards Town Square is inconsistent.

OBJECTIVES MET
• Objective 1.1: Expand sidewalks

SOURCES
• Planning Commission

COST
$110,000
Construction: $70,000
Engineering and CEI: $20,000
Contingencies: $10,000
Right-of-Way: N/A
Utilities: N/A

FUNDING DETAILS
The Capital Improvements Plan may be the best funding approach for this project. The Town could bundle additional bike and pedestrian improvements into a SMART SCALE application or an enhancement grant. Improvements would occur within the existing right-of-way. Engineering would identify any potential conflicts with underground utilities.

MEDIUM PRIORITY
#20 EAST BROAD WAY SIDEWALK

**LOCATION**
From: South Church Street
To: Town Square

**PROJECT DESCRIPTION**
Install a 160’ long, 5’ wide sidewalk from the sidewalk that will be installed per the East Broad Way and South Church Street streetscape improvement project to the existing curb cut on Town Square. This project includes planning, design, and construction.

**DEFICIENCIES & NEEDS**
The South Church Street/East Pennsylvania Avenue streetscape project will install a sidewalk on the northern side of South Church Street that will round the corner onto East Broad Way, but will not extend up to the Town Square.

**OBJECTIVES MET**
- Objective 1.1: Expand sidewalks

**COST**
- $230,000
  - Construction: $140,000
  - Engineering and CEI: $40,000
  - Contingencies: $30,000
  - Right-of-Way: $20,000
  - Utilities: $10,000

**FUNDING DETAILS**
The Capital Improvements Plan may be the best funding approach for this project. The Town could bundle additional bike and pedestrian improvements into a SMART SCALE application or an enhancement grant. Improvements would occur within the existing right-of-way. Engineering would identify any potential conflicts with underground utilities.

**SOURCES**
- Site visit

**MEDIUM PRIORITY**
Appendix B: Survey Results
Survey Results
Lovettsville Transportation Plan
Survey Monkey

Question 1

How do you primarily travel for in-town trips?

- Driving: 71.70%
- Walking: 22.64%
- Biking: 3.77%
- Other (please specify): 1.89%

Other:
- Combination of biking, walking, and driving.
- Walking & Biking
- All of the above
**Survey Monkey**

**Question 2**

Ideally, how would you prefer to travel for in-town trips?

- Driving: 32.08%
- Walking: 52.20%
- Biking: 11.95%
- Other (please specify): 3.77%

Other:
- public transportation
- Bike or walk
- Walking & Biking SAFELY
- Walking or biking during fair weather
- Public transportation
Survey Monkey

Question 3

What do you think is the most important transportation problem in the Town?

- High traffic speed: 15.29%
- Lack of sidewalks: 57.96%
- Narrow streets: 7.01%
- High traffic volumes: 4.46%
- Other (please specify): 15.29%
Survey Monkey

Question 3

Other:
• Absurdly low speed limits. It’s 2020, not 1945.
• I think it is a combination of high speed traffic, drivers NOT stopping at stop signs, lack of sidewalks, and periods of high traffic volume.
• No crosswalks at key crossings
• Lighting for night walks
• Minimal parking
• Stop building houses! If we stop building there will be less issues with traffic. We also have to deal with Maryland drivers coming in and speeding etc.
• No problems
• More bike paths
• Too many signs around the squirkle.
• Not enough parking
• Too many signs. Too many bikes.
• The squircle ... it's stupid. It should be a circle with no stop signs
• Nothing the town has 0 traffic problems. Posdle making a bike path that people on bikes might use. Tge one that was build radicall is just a large sidewalk. Don't think I have ever even seen a bike on it.
• No public transportation in town or connecting the town to other localities
• Speed limits not followed
• Confusing intersections
• Need walkways and trails to connect people, community buildings, business and open spaces
• All but traffic volume
• All of the above
• The squircle is a huge obstacle to traffic through town and traffic around town. It should be replaced with a roundabout and no stop signs
• Bikers on the roads
• High speed commuter traffic on 287 in and out of town.
• Lack of public transportation
Survey Monkey

Question 4

How would you rank the following transportation improvements for the Town? (1 is most important, 6 is least important)

<table>
<thead>
<tr>
<th>Improvement</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction of new sidewalks, crosswalks or bike lanes</td>
<td>5.11</td>
</tr>
<tr>
<td>Improved stormwater management along streets</td>
<td>3.23</td>
</tr>
<tr>
<td>Increased parking options</td>
<td>3.22</td>
</tr>
<tr>
<td>Exploration of new shuttle service to connect with commuter services, e.g., MARC station in Brunswick or park &amp; ride lot in Purcellville</td>
<td>2.18</td>
</tr>
<tr>
<td>Roadway improvements to improve vehicular travel/convenience</td>
<td>3.61</td>
</tr>
<tr>
<td>Reduced speeding on local streets</td>
<td>3.75</td>
</tr>
</tbody>
</table>
Survey Monkey
Question 5

Which one of these statements should guide the Town's transportation decisions?

- Transportation improvements should support economic development. 6.29%
- Transportation improvements should foster beautiful streets. 9.43%
- A transportation system should allow safe and convenient biking, walking, or travel by other means. 54.72%
- Transportation improvements should make for safe driving. 8.81%
- Transportation improvements should efficiently get people to their destinations. 15.72%
- Other (please specify). 5.03%

Other:
- Again, I think it ought to be a combination of the above: A transportation system that allows for safe, efficient, and convenient biking, walking, driving, or other means for people to get to their destinations.
- A transportation system should account for all types of safe travel. Driving, walking, biking.
- Eliminate the traffic from Md and the excessive speeding on Berlin Turnpike.
- I don't think we should only have to pick one aspect. The best answer should incorporate as many as possible.
- A balance of all the above.
- A combination of the last three.
Survey Monkey
Question 6

Should the Town consider one-way traffic on narrow streets to make room for one of the following?

- Sidewalks: 43.40%
- Bike lanes: 5.03%
- Parking: 3.77%
- I don’t think streets should be converted to one-way streets: 35.22%
- We prefer widening our roads to accommodate bike/ped features: 12.58%
Before the COVID-19 pandemic: which of the following applies most to you (as an individual, as opposed to a household).

- Employed with a position in the town limits: 5.03%
- Regularly commute to a job in Loudoun County: 32.70%
- Regularly commute to a job outside Loudoun County, but in Virginia: 22.64%
- Regularly commute to a job outside of Virginia: 11.95%
- Telecommute: 17.61%
- Stay at home with trips to other destinations (retired, stay-at-home parent, etc.): 18.24%
- Other (please specify): 1.89%

Other:
- Self-employed, work mainly from home
- Self-employed, traveling within Loudoun County
- Work from home driving to appointments within Virginia
WikiMapping

Most frequented destinations
WikiMapping

Most important destinations
WikiMapping

Problem Spots
MEMORANDUM

TO: JOHN MERRITHEW
FROM: WILL COCKRELL, AICP
BILL WUENSCH, P.E., PTOE

ORGANIZATION: TOWN OF LOVETTSVILLE
DATE: OCT 27, 2020

PHONE NUMBER:
SENDER’S REFERENCE NUMBER:

Re: TRANSPORTATION MASTER PLAN – TRAFFIC DATA DOCUMENTATION AND ANALYSIS
YOUR REFERENCE NUMBER:

Purpose: This memo updates the Town of Lovettsville Planning Commission on traffic data collected and analyzed for the Transportation Master Plan. The data includes speed count data that collected this fall, along with intersection turning movement count data from prior transportation studies in the town.

Background: This memo covers three data sets: speed counts, hourly bi-directional traffic volumes, and turning movement counts (TMCs) at key intersections in the town. The speed counts and volumes represent new data collected for the plan, while the TMCs were assembled from previous studies in the town. The speed counts and TMCs provide information for specific objectives of the plan; the speed counts relate to addressing speeding concerns in the town, while the TMCs will be used to assess one-way conversion schemes in the Old Town area as well as other traffic control device modifications at the intersections. The hourly bi-directional link volume data was a side-product of the speed count data and provides a snapshot of traffic flows on key Town roads during the Covid-19 pandemic. The data is depicted and discussed in the sections below.

Speed Counts: The speed count data was collected to assess the potential need for traffic calming interventions on select Town streets. The kickoff meeting and public comments were helped to identify roads where speeding is perceived to be a problem. The speed count data was collected over a two-day period at the four locations shown in Figure 1. The counts on South Loudoun St and Cooper Run St were collected on Wednesday, September 23rd and Thursday, September 24th, while the counts at the S Berlin Tpke and E Broad Way locations were collected on Tuesday, September 29th and Wednesday, September 30th. The results of the speed counts and the volume data can be seen in Figures 2 - 9.

Per VDOT traffic calming guidelines, none of the streets studied qualify for traffic calming projects through its traffic calming program. In order to receive funding for traffic calming for VDOT-maintained streets, the roads of interest must be functionally classified as local streets, have posted speed limits of 25 mph or lower, and have an operating speed (85th percentile speed) that is 10 mph or more above the posted speed limit. The four street segments where the counts were collected have 25 mph speed limit posting. Only Cooper Run St is classified as a local street, but its highest 85th percentile speed was only 6 mph above the posted speed limit. Only S Loudoun St had 85th percentile speeds that exceeded the threshold, but it is classified as a minor collector.
Note that although the criteria for the VDOT traffic calming program was not found to be met on any of the four study road links, there are other approaches for modifying the roads or street environment that have an end result of reducing travel speeds. Thus, the Town could pursue funding for an intended purpose of reducing travel speeds (traffic calming) through programs specifically aimed at funding bike and pedestrian safety improvements, such as the Transportation Alternatives program, the Bike and Pedestrian Safety Program or Safe Routes to School. Or, the town could elect to pursue revenue share grants for physical improvements, or utilize capital improvement program funding. Types of improvements that could be pursued with these approaches could include:

- curb modifications to shorten pedestrian crossing distances – this can be considered a pedestrian improvement, but also serves to create a narrowing in the road which tends to slow down vehicles,
- placement of entry treatments into the town which provides a visual queue to drivers that they are entering into a new environment, thereby causing cars to reduce speeds
- building sidewalks and curbing where none exist, which, similar to the above, tends to provide a visual queue to motorists that they are in a pedestrian or urban environment
- realigning the S Loudoun Street intersection to “T” up the intersection which could decrease approach speeds entering and exiting the intersection on S Loudoun Street.

Such improvements will be identified and developed under Goals 1, 2, and 3.

Turn Movement Counts:
Turning movement counts were obtained from the Town for use in this planning effort. The counts, for 8 intersections, are from year 2019 as collected for the Engle Tract Community traffic study. Note that, using standard derivation processes that involve balancing upstream and downstream traffic counts and consideration of trip generation, known average daily traffic volumes, and peak hour factors, EPR derived some of the data that will be helpful in examining suggestions for one-way street conversions. The count data, along with the derived data, are presented in Figures 10 and 11.

As alluded to previously, the TMC information will be used to assess traffic operating conditions and can inform the analysis of implications of alternative one-way schemes. Furthermore, the TMC information will be used for examining converting intersections from two way stop control to all way stop control, turn lane needs at intersections, or other ideas that may emerge through the traffic planning process.

Please direct questions or comments to:

Will Cockrell
w.cockrell@epr-pc.com.
Figure 1. Speed count data collection locations
Figure 2. Speed count data collected on S Berlin Tpke

<table>
<thead>
<tr>
<th></th>
<th>Day 1</th>
<th>Day 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>85th Percentile Speed</td>
<td>30 mph</td>
<td>30 mph</td>
</tr>
<tr>
<td>Mean Speed</td>
<td>26 mph</td>
<td>26 mph</td>
</tr>
</tbody>
</table>
Figure 3. Speed count data collected on E Broad Way

**Speed Counts**

E Broad Way

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**E Broad Way - Day 1**

Tue 9/29/20

<table>
<thead>
<tr>
<th>Speed (mph)</th>
<th>Northbound</th>
<th>Southbound</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 10</td>
<td>50</td>
<td>60</td>
</tr>
<tr>
<td>10 to 15</td>
<td>100</td>
<td>120</td>
</tr>
<tr>
<td>15 to 20</td>
<td>150</td>
<td>160</td>
</tr>
<tr>
<td>20 to 25</td>
<td>200</td>
<td>210</td>
</tr>
<tr>
<td>25 to 30</td>
<td>250</td>
<td>260</td>
</tr>
<tr>
<td>30 to 35</td>
<td>300</td>
<td>310</td>
</tr>
<tr>
<td>35 to 40</td>
<td>350</td>
<td>360</td>
</tr>
<tr>
<td>40 to 45</td>
<td>400</td>
<td>410</td>
</tr>
<tr>
<td>45 to 50</td>
<td>450</td>
<td>460</td>
</tr>
<tr>
<td>50 to 55</td>
<td>500</td>
<td>510</td>
</tr>
<tr>
<td>55 to 60</td>
<td>550</td>
<td>560</td>
</tr>
<tr>
<td>60 to 65</td>
<td>600</td>
<td>610</td>
</tr>
<tr>
<td>65 to 70</td>
<td>650</td>
<td>660</td>
</tr>
<tr>
<td>&gt; 70</td>
<td>700</td>
<td>710</td>
</tr>
</tbody>
</table>

**E Broad Way - Day 2**

Wed 9/30/20

<table>
<thead>
<tr>
<th>Speed (mph)</th>
<th>Northbound</th>
<th>Southbound</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 10</td>
<td>50</td>
<td>60</td>
</tr>
<tr>
<td>10 to 15</td>
<td>100</td>
<td>120</td>
</tr>
<tr>
<td>15 to 20</td>
<td>150</td>
<td>160</td>
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<td>20 to 25</td>
<td>200</td>
<td>210</td>
</tr>
<tr>
<td>25 to 30</td>
<td>250</td>
<td>260</td>
</tr>
<tr>
<td>30 to 35</td>
<td>300</td>
<td>310</td>
</tr>
<tr>
<td>35 to 40</td>
<td>350</td>
<td>360</td>
</tr>
<tr>
<td>40 to 45</td>
<td>400</td>
<td>410</td>
</tr>
<tr>
<td>45 to 50</td>
<td>450</td>
<td>460</td>
</tr>
<tr>
<td>50 to 55</td>
<td>500</td>
<td>510</td>
</tr>
<tr>
<td>55 to 60</td>
<td>550</td>
<td>560</td>
</tr>
<tr>
<td>60 to 65</td>
<td>600</td>
<td>610</td>
</tr>
<tr>
<td>65 to 70</td>
<td>650</td>
<td>660</td>
</tr>
<tr>
<td>&gt; 70</td>
<td>700</td>
<td>710</td>
</tr>
</tbody>
</table>

**Posted Speed:** 25 mph

<table>
<thead>
<tr>
<th>Day</th>
<th>Northbound</th>
<th>Southbound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>33 mph</td>
<td>29 mph</td>
</tr>
<tr>
<td>Day 2</td>
<td>33 mph</td>
<td>30 mph</td>
</tr>
</tbody>
</table>

**85th Percentile Speed**

<table>
<thead>
<tr>
<th>Day</th>
<th>Northbound</th>
<th>Southbound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>33 mph</td>
<td>29 mph</td>
</tr>
<tr>
<td>Day 2</td>
<td>33 mph</td>
<td>30 mph</td>
</tr>
</tbody>
</table>

**Mean Speed**

<table>
<thead>
<tr>
<th>Day</th>
<th>Northbound</th>
<th>Southbound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>28 mph</td>
<td>25 mph</td>
</tr>
<tr>
<td>Day 2</td>
<td>28 mph</td>
<td>26 mph</td>
</tr>
</tbody>
</table>
Figure 4. Speed count data collected on S Loudoun St

Speed Counts
S Loudoun St

<table>
<thead>
<tr>
<th>Speed Counts</th>
<th>S Loudoun St - Day 1</th>
<th>S Loudoun St - Day 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Cars</td>
<td>Speed (mph)</td>
<td>No. of Cars</td>
</tr>
<tr>
<td>&lt; 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 to 15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 to 20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 to 25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 to 30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 to 35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35 to 40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40 to 45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45 to 50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50 to 55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55 to 60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 to 65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>65 to 70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>70 to 75</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Posted Speed: 25 mph

<table>
<thead>
<tr>
<th></th>
<th>Day 1</th>
<th>Day 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>NB</td>
<td>35 mph</td>
<td>34 mph</td>
</tr>
<tr>
<td>SB</td>
<td>39 mph</td>
<td>38 mph</td>
</tr>
<tr>
<td>85th Percentile Speed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean Speed</td>
<td>29 mph</td>
<td>29 mph</td>
</tr>
<tr>
<td></td>
<td>33 mph</td>
<td>32 mph</td>
</tr>
</tbody>
</table>
Figure 5. Speed count data collected on Cooper Run St

<table>
<thead>
<tr>
<th>Day</th>
<th>NB</th>
<th>SB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>29 mph</td>
<td>31 mph</td>
</tr>
<tr>
<td>Day 2</td>
<td>28 mph</td>
<td>30 mph</td>
</tr>
</tbody>
</table>

85th Percentile Speed

Mean Speed

_85th Percentile Speed_:

Day 1: 29 mph, 31 mph
Day 2: 28 mph, 30 mph

Mean Speed:

Day 1: 24 mph, 25 mph
Day 2: 24 mph, 25 mph
Figure 6. Volume data collected on S Berlin Tpke

<table>
<thead>
<tr>
<th>Time of Day</th>
<th>Northbound</th>
<th>Southbound</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00 AM</td>
<td>300</td>
<td>200</td>
<td>500</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>400</td>
<td>300</td>
<td>700</td>
</tr>
<tr>
<td>12:00 AM</td>
<td>500</td>
<td>400</td>
<td>900</td>
</tr>
<tr>
<td>1:00 PM</td>
<td>600</td>
<td>500</td>
<td>1,100</td>
</tr>
</tbody>
</table>

Day 1:
- Total Volume: 3,152

Day 2:
- Total Volume: 2,925

Total:
- Total Volume: 6,077
Figure 7. Volume data collected on E Broad Way

**Table: Volumes for E Broad Way**

<table>
<thead>
<tr>
<th></th>
<th>Day 1</th>
<th>Day 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>NB</td>
<td>1,600</td>
<td>1,685</td>
</tr>
<tr>
<td>SB</td>
<td>1,720</td>
<td>1,832</td>
</tr>
<tr>
<td>Total</td>
<td>3,320</td>
<td>3,517</td>
</tr>
</tbody>
</table>

**Graphs:**
- **E Broad Way - Day 1**
  - Total volume: 3,320
  - Time of Day: Northbound, Southbound, Total
- **E Broad Way - Day 2**
  - Total volume: 3,517
  - Time of Day: Northbound, Southbound, Total
Figure 8. Volume data collected on S Loudoun St

Note: the data received at this location was taken from 8:15 am - 8:15am the next day, so only one day is displayed below to show the standard 12am - 12am timeframe.
Figure 9. Volume data collected on Cooper Run St
Figure 10. Existing turn movement counts
Figure 11. Estimated turn movement counts
Appendix D: Berlin Turnpike & West Broad Way Intersection Alternatives
Memo

TO: John Merrithew, Town of Lovettsville Planning Director  
Town of Lovettsville Planning Commission

FROM: EPR, P.C.

DATE: December 18th, 2020

RE: Intersection of W Broad Way and N Berlin Turnpike Traffic Analysis

PURPOSE: This memo provides the traffic analysis at the intersection of W Broad Way and N Berlin Turnpike in the Town of Lovettsville.

TRAFFIC DATA: The traffic data for the analysis was obtained from Engle Tract Community Traffic Impact Analysis prepared on November 7th, 2019.

TRAFFIC ANALYSIS: EPR examined the traffic operations at this intersection for two scenarios.

In the existing scenario, the intersection is two-way stop sign controlled and the stop signs are placed on W Broad Way and Town Square approaches. The Synchro/SimTraffic model was used to analyze the traffic operation. The traffic results output from the model were attached in the Appendix and summarized in Table 1 below.

Table 1 Existing Scenario Traffic Results

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Approach</th>
<th>Movement</th>
<th>Storage</th>
<th>Taper</th>
<th>Effective Storage</th>
<th>Existing AM</th>
<th></th>
<th>Existing PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>W Broad Way EB</td>
<td>EBL/R</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>A*</td>
<td>5*</td>
<td>68</td>
<td>A*</td>
</tr>
<tr>
<td>E Broad Way WB</td>
<td>WBL</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>C</td>
<td>18.5</td>
<td>55</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>WBT</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>B</td>
<td>14.9</td>
<td>63</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>WBR</td>
<td>100</td>
<td>80</td>
<td>140</td>
<td>A</td>
<td>0</td>
<td>0</td>
<td>A</td>
</tr>
<tr>
<td>N Berlin Turnpike SB</td>
<td>SBT</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>A</td>
<td>0</td>
<td>3</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>SBR</td>
<td>100</td>
<td>80</td>
<td>140</td>
<td>A</td>
<td>0</td>
<td>2</td>
<td>A</td>
</tr>
</tbody>
</table>

*SimTraffic results are used due to HCM results not available.

As indicated in Table 1, the intersection of W Broad Way and N Berlin Turnpike operates well in the existing scenario with all levels of service at LOS C or better and very minor maximum queues.

As requested in the kickoff meeting, an all-way stop sign controlled scenario was examined. In the all-way stop sign controlled scenario, the stop signs were assumed being placed on all approaches. The Synchro/SimTraffic model was used to analyze the traffic operation. The traffic results output from the model were attached in the Appendix and summarized in Table 2 below.
## Table 2 All-way Stop Sign Controlled Scenario Traffic Results

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Approach</th>
<th>Movement</th>
<th>Storage</th>
<th>Taper</th>
<th>Effective Storage</th>
<th>SimTraffic Max Queue</th>
<th>HCM LOS</th>
<th>HCM Delay</th>
<th>HCM LOS</th>
<th>HCM Delay</th>
<th>SimTraffic Max Queue (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N Berlin Turnpike</td>
<td>EBL/N</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>B</td>
<td>61</td>
<td>B</td>
<td>10.9</td>
<td>B</td>
<td>10.8</td>
<td>62</td>
</tr>
<tr>
<td>/W Broad Way</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>W Broad Way</td>
<td>WBL</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>B</td>
<td>47</td>
<td>A</td>
<td>9.6</td>
<td>A</td>
<td>10</td>
<td>49</td>
</tr>
<tr>
<td>EB</td>
<td>WBT</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>B</td>
<td>55</td>
<td>A</td>
<td>10</td>
<td>A</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>E Broad Way WB</td>
<td>WBR</td>
<td>100</td>
<td>80</td>
<td>140</td>
<td>B</td>
<td>0</td>
<td>C</td>
<td>16.1</td>
<td>C</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>N Berlin Turnpike</td>
<td>SBT</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>E</td>
<td>179</td>
<td>C</td>
<td>15.2</td>
<td>C</td>
<td>111</td>
<td></td>
</tr>
<tr>
<td>SB</td>
<td>SBR</td>
<td>100</td>
<td>80</td>
<td>140</td>
<td>A</td>
<td>73</td>
<td>A</td>
<td>8.9</td>
<td>A</td>
<td>48</td>
<td></td>
</tr>
</tbody>
</table>

As indicated in Table 2, in the all-way stop sign controlled scenario, the intersection of W Broad Way and N Berlin Turnpike will operate well with all levels of service at LOS C or better, but with only exception that N Berlin Turnpike southbound through movement will operate at LOS E in AM. The maximum queues in the all-way stop sign controlled scenario will be longer than the maximum queues in the existing scenario. The longest queue will occur on N Berlin Turnpike southbound through movement in AM and the maximum queue length will be 179 feet, equaling to about 7-8 vehicles.

**Appendix:** Existing Scenario Synchro & SimTraffic Output Reports

All-way Stop Controlled Scenario Synchro & SimTraffic Output Reports
### Intersection

<table>
<thead>
<tr>
<th>Intersection Delay, s/veh</th>
<th>32.9</th>
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</thead>
<tbody>
<tr>
<td>Intersection LOS</td>
<td>D</td>
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</table>

### Movement

<table>
<thead>
<tr>
<th>Lane Configurations</th>
<th>EBL</th>
<th>EBT</th>
<th>EBR</th>
<th>WBL</th>
<th>WBT</th>
<th>WBR</th>
<th>NBL</th>
<th>NBT</th>
<th>NBR</th>
<th>SBL</th>
<th>SST</th>
<th>SBR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic Vol., veh/h</td>
<td>18</td>
<td>0</td>
<td>98</td>
<td>31</td>
<td>46</td>
<td>148</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>537</td>
</tr>
<tr>
<td>Future Vol., veh/h</td>
<td>18</td>
<td>0</td>
<td>98</td>
<td>31</td>
<td>46</td>
<td>148</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>537</td>
</tr>
<tr>
<td>Peak Hour Factor</td>
<td>0.91</td>
<td>0.91</td>
<td>0.91</td>
<td>0.91</td>
<td>0.91</td>
<td>0.91</td>
<td>0.91</td>
<td>0.91</td>
<td>0.91</td>
<td>0.91</td>
<td>0.91</td>
<td>0.91</td>
</tr>
<tr>
<td>Heavy Vehicles, %</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Mvmt Flow</td>
<td>20</td>
<td>0</td>
<td>108</td>
<td>34</td>
<td>51</td>
<td>163</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>537</td>
<td>12</td>
</tr>
<tr>
<td>Number of Lanes</td>
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<td>0</td>
<td>1</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
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</tbody>
</table>

### Approach

<table>
<thead>
<tr>
<th>Opposing Approach</th>
<th>EB</th>
<th>WB</th>
<th>SB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opposing Lanes</td>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Conflicting Approach Left</td>
<td>SB</td>
<td>WB</td>
<td></td>
</tr>
<tr>
<td>Conflicting Lanes Left</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Conflicting Approach Right</td>
<td>SB</td>
<td>EB</td>
<td></td>
</tr>
<tr>
<td>Conflicting Lanes Right</td>
<td>0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>HCM Control Delay</td>
<td>11.5</td>
<td>10.6</td>
<td>46.6</td>
</tr>
<tr>
<td>HCM LOS</td>
<td>B</td>
<td>B</td>
<td>E</td>
</tr>
</tbody>
</table>

### Lane

<table>
<thead>
<tr>
<th>Lane</th>
<th>EBLn1</th>
<th>WBLn1</th>
<th>WBLn2</th>
<th>WBLn3</th>
<th>SBLn1</th>
<th>SBLn2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vol Left, %</td>
<td>16%</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Vol Thru, %</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>Vol Right, %</td>
<td>84%</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>Sign Control</td>
<td>Stop</td>
<td>Stop</td>
<td>Stop</td>
<td>Stop</td>
<td>Stop</td>
<td>Stop</td>
</tr>
<tr>
<td>Traffic Vol by Lane</td>
<td>116</td>
<td>31</td>
<td>46</td>
<td>148</td>
<td>537</td>
<td>12</td>
</tr>
<tr>
<td>LT Vol</td>
<td>18</td>
<td>31</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Through Vol</td>
<td>0</td>
<td>0</td>
<td>46</td>
<td>0</td>
<td>537</td>
<td>0</td>
</tr>
<tr>
<td>RT Vol</td>
<td>98</td>
<td>0</td>
<td>0</td>
<td>148</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>Lane Flow Rate</td>
<td>127</td>
<td>34</td>
<td>51</td>
<td>163</td>
<td>590</td>
<td>13</td>
</tr>
<tr>
<td>Geometry Grp</td>
<td>6</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Degree of Util (X)</td>
<td>0.236</td>
<td>0.068</td>
<td>0.093</td>
<td>0.267</td>
<td>0.946</td>
<td>0.019</td>
</tr>
<tr>
<td>Departure Headway (Hd)</td>
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#### Network Summary

Network wide Queuing Penalty: 0
## Intersection Delay, s/veh

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## HCM Control Delay

| Lane Configuration | 10.9 | 14.2 | 14.5 |

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### Queuing and Blocking Report

**Intersection: 1: S Berlin Turnpike/N Berlin Turnpike & W Broad Way/E Broad Way**

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**Network Summary**

Network wide Queuing Penalty: 0
### Intersection

#### Intersection Delay, s/veh

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**Total Network Performance**

<table>
<thead>
<tr>
<th>Denied Del/Veh (s)</th>
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<tr>
<td>Total Del/Veh (s)</td>
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</table>
**Queuing and Blocking Report**

**Intersection: 1: S Berlin Turnpike/N Berlin Turnpike & W Broad Way/E Broad Way**

<table>
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<tr>
<th>Movement</th>
<th>EB</th>
<th>WB</th>
<th>WB</th>
<th>SB</th>
<th>SB</th>
</tr>
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<tbody>
<tr>
<td>Directions Served</td>
<td>LTR</td>
<td>L</td>
<td>T</td>
<td>T</td>
<td>R</td>
</tr>
<tr>
<td>Maximum Queue (ft)</td>
<td>68</td>
<td>55</td>
<td>63</td>
<td>3</td>
<td>2</td>
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<tr>
<td>Average Queue (ft)</td>
<td>34</td>
<td>17</td>
<td>25</td>
<td>0</td>
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<tr>
<td>95th Queue (ft)</td>
<td>57</td>
<td>39</td>
<td>52</td>
<td>2</td>
<td>2</td>
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<tr>
<td>Link Distance (ft)</td>
<td>631</td>
<td>436</td>
<td>436</td>
<td>411</td>
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</table>

<table>
<thead>
<tr>
<th>Upstream Blk Time (%)</th>
<th>Queuing Penalty (veh)</th>
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</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

| Storage Bay Dist (ft) | 140 |
| Storage Blk Time (%)  |     |
| Queuing Penalty (veh) |     |

**Network Summary**

Network wide Queuing Penalty: 0
### Intersection

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<tr>
<th>Movement</th>
<th>EBL</th>
<th>EBT</th>
<th>EBR</th>
<th>WBL</th>
<th>WBT</th>
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<th>NBL</th>
<th>NBT</th>
<th>NBR</th>
<th>SBL</th>
<th>SBT</th>
<th>SBR</th>
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<td>Future Vol, veh/h</td>
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<td>Conflicting Peds, #/hr</td>
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<td>Sign Control</td>
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<td>RT Channelized</td>
<td>- - None - - Yield - - None - - None</td>
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<tr>
<td>Storage Length</td>
<td>- - 0 - 140 - - - - 140</td>
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<td>Veh in Median Storage, #</td>
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<tr>
<td>Grade, %</td>
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<td>Peak Hour Factor</td>
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<td>Heavy Vehicles, %</td>
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<td>Mvmt Flow</td>
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### Major/Minor

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<td>Conflicting Flow All</td>
<td>334 266 266 326 298 0</td>
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<td>Stage 1</td>
<td>266 266 - 0 0</td>
<td>- - -</td>
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<td>Stage 2</td>
<td>68 0 - 326 298</td>
<td>- - -</td>
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<td>Critical Hdwy</td>
<td>7.12 6.52 6.22 7.12 6.52 6.22</td>
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<tr>
<td>Critical Hdwy Stg 2</td>
<td>- - 6.12 5.52</td>
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<td>Follow-up Hdwy</td>
<td>3.518 4.018 3.318 3.518 4.018 3.318</td>
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<td>Pot Cap-1 Maneuver</td>
<td>620 630 773 627 614</td>
<td>0 -</td>
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<tr>
<td>Stage 1</td>
<td>739 689</td>
<td>- - -</td>
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<tr>
<td>Stage 2</td>
<td>- - 687 667</td>
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<td>Platoon blocked, %</td>
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<td>- -</td>
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<tr>
<td>Mov Cap-1 Maneuver</td>
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<td>- -</td>
</tr>
<tr>
<td>Mov Cap-2 Maneuver</td>
<td>- 640 - 556 614</td>
<td>- -</td>
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<tr>
<td>Stage 1</td>
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<td>- - -</td>
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<tr>
<td>Stage 2</td>
<td>- - 610 667</td>
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### Approach

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<td>HCM Control Delay, s</td>
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<tr>
<td>HCM LOS</td>
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### Minor Lane/Major Mvmt

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<th>WBLn3</th>
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<td>Capacity (veh/h)</td>
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<td>HCM Lane V/C Ratio</td>
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<td>HCM Control Delay (s)</td>
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<tr>
<td>HCM Lane LOS</td>
<td>- B B</td>
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<tr>
<td>HCM 95th %ile Q(veh)</td>
<td>- 0.4 0.8</td>
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### 1: S Berlin Turnpike/N Berlin Turnpike & W Broad Way/E Broad Way Performance by lane

<table>
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<th>Lane</th>
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<th>WB</th>
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<tr>
<td>Movements Served</td>
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<td>L</td>
<td>T</td>
<td>R</td>
<td>T</td>
<td>R</td>
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<tr>
<td>Denied Del/Veh (s)</td>
<td>4.1</td>
<td>5.1</td>
<td>14.9</td>
<td>0.9</td>
<td>0.3</td>
<td>0.0</td>
<td>3.0</td>
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<tr>
<td>Total Del/Veh (s)</td>
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#### Total Network Performance

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<td>Total Del/Veh (s)</td>
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</table>
## Queuing and Blocking Report

**Intersection: 1: S Berlin Turnpike/N Berlin Turnpike & W Broad Way/E Broad Way**

<table>
<thead>
<tr>
<th>Movement</th>
<th>EB</th>
<th>WB</th>
<th>WB</th>
<th>WB</th>
<th>SB</th>
<th>SB</th>
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<tbody>
<tr>
<td>Directions Served</td>
<td>LTR</td>
<td>L</td>
<td>T</td>
<td>R</td>
<td>T</td>
<td>R</td>
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<tr>
<td>Maximum Queue (ft)</td>
<td>64</td>
<td>49</td>
<td>88</td>
<td>26</td>
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<td>Average Queue (ft)</td>
<td>31</td>
<td>22</td>
<td>41</td>
<td>1</td>
<td>0</td>
<td>0</td>
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<td>95th Queue (ft)</td>
<td>52</td>
<td>41</td>
<td>68</td>
<td>17</td>
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<td>2</td>
</tr>
<tr>
<td>Link Distance (ft)</td>
<td>631</td>
<td>436</td>
<td>436</td>
<td>411</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upstream Blk Time (%)</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Queuing Penalty (veh)</td>
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<td></td>
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</tr>
<tr>
<td>Storage Bay Dist (ft)</td>
<td>140</td>
<td>140</td>
<td></td>
<td></td>
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<tr>
<td>Storage Blk Time (%)</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Queuing Penalty (veh)</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Network Summary**

Network wide Queuing Penalty: 0
Appendix E: Old Town One-Way Conversion Memo
EPR conducted a cursory evaluation of factors to consider for modifying East Pennsylvania Avenue from its current two-way travel to one direction of travel with dedicated space for pedestrians and bicycles. This information is in response to interest raised though the town-wide transportation plan development process.

East Pennsylvania Avenue is reminiscent of a historical road perhaps traveled by horse and buggy in the distant past. As such, it is narrow in width with structures situated at a minimal offset, if any, from the edge of pavement. This road has an approximately 14’ paved section with no or minimal shoulders. If converting to one direction of travel, given the low speed and volume condition and lack of large trucks or transit vehicles, a typical section of a 9’ travel lane with a marked 5’ of shared-space bike/ped space could be created using signage and pavement markings. The bike/ped flex space would allow walking in either direction, and southbound biking, while northbound cyclists would ride in the travel lane with traffic. The vehicle travel lane would include share the road markings or signage for bicycles traveling in that direction. An illustration of this typical section is provide below.
The primary traffic consideration with potentially implementing one-way direction of travel on East Pennsylvania Avenue is how this could impact traffic on East Broad Way, which runs parallel. Consideration of potentially creating more left turns, which impacts safety and congestion, is a primary factor. It appears that allowing East Pennsylvania Avenue to continue serving northbound traffic (from South Loudoun Street towards South Church Street) would help to alleviate concerns about increasing left turning traffic on East Broad Way. As an example, traffic arriving from the south on South Loudoun Street destined for Town Hall could make the left turn on East Pennsylvania Ave versus having to travel onto East Broad Way and then make a left turn. Note that this scheme could increase right turns from East Broad Way, though right turns are preferred over left turns when considering safety and congestion impacts.
Thus, at a cursory level, and without benefit of public input and stakeholder coordination (i.e., those most impacted), it appears that the northbound scheme could be the preferred scenario, as shown in the above graphic.

Attached to this brief memorandum are the following materials that could be used in the future to inform a future formal study and stakeholder outreach effort.

- Traffic count summary for intersections in the immediate area
- Turn lane need calculations for intersections along E. Broad Way

END OF MEMORANDUM
Existing Traffic Volumes at Intersections (Counted)
Sources: Engle Tract Community Traffic Impact Analysis, 2019

<table>
<thead>
<tr>
<th>Counted Intersection</th>
<th>Estimated Intersection</th>
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<tbody>
<tr>
<td>A</td>
<td>B</td>
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</table>

XXX/XXX AM/PM

0 250 500 1,000 Feet

Lovettsville Transportation Master Plan
Appendix E: Old Town One-Way Conversion Memo
Warrant for Left-Turn Storage Lanes on Two-Lane Highway

Project: Lovettesville
Intersection: E Broad Way/N(S) Church Street

Approach Direction: Eastbound
Peak Hour: AM

Peak Hour Left Turns ($V_L$): 11 vph
Advancing Volume ($V_A$): 264 vph
Opposing Volume ($V_O$): 132 vph
Operating/Design Speed ($V$): 30 mph

% Left Turns in $V_A$ ($L$): 5% (Calculated Value: 4.2%)
% Trucks in $V_L$: 0%

Conclusion: No Left Turn Lane Required
Warrant for Left-Turn Storage Lanes on Two-Lane Highway

Project: Lovettesville
Intersection: E Broad Way/N(S) Church Street

Approach Direction: Eastbound
Peak Hour: PM

Peak Hour Left Turns ($V_L$): 4 vph
Advancing Volume ($V_A$): 86 vph
Opposing Volume ($V_O$): 452 vph
Operating/Design Speed ($V$): 30 mph

% Left Turns in $V_A$ ($L$): 5% (Calculated Value: 4.7%)
% Trucks in $V_L$: 0%

Conclusion: No Left Turn Lane Required
Warrant for Left-Turn Storage Lanes on Two-Lane Highway

Project: Lovettesville
Intersection: E Broad Way/N(S) Church Street

Approach Direction: Westbound
Peak Hour: AM

Peak Hour Left Turns ($V_L$): 16 vph
Advancing Volume ($V_A$): 132 vph
Opposing Volume ($V_O$): 264 vph
Operating/Design Speed ($V$): 30 mph

% Left Turns in $V_A$ ($L$): 15% (Calculated Value: 12.1%)
% Trucks in $V_L$: 0%

Conclusion: No Left Turn Lane Required
Warrant for Left-Turn Storage Lanes on Two-Lane Highway

Project: Lovettesville
Intersection: E Broad Way/N(S) Church Street

Approach Direction: Westbound
Peak Hour: PM

Peak Hour Left Turns ($V_L$): 53 vph
Advancing Volume ($V_A$): 452 vph
Opposing Volume ($V_O$): 86 vph
Operating/Design Speed ($V$): 30 mph

% Left Turns in $V_A$ (L): 5% (Calculated Value: 11.7%)
% Trucks in $V_L$: 0%

Conclusion: No Left Turn Lane Required
Warrant for Left-Turn Storage Lanes on Two-Lane Highway

Project: Lovettesville
Intersection: E Broad Way/N(S) Light Street

Approach Direction: Eastbound
Peak Hour: AM

Peak Hour Left Turns ($V_{L}$): 1 vph
Advancing Volume ($V_{A}$): 322 vph
Opposing Volume ($V_{O}$): 127 vph
Operating/Design Speed ($V$): 30 mph

% Left Turns in $V_{A}$ ($L$): 5% (Calculated Value: 0.3%)
% Trucks in $V_{L}$: 0%

Conclusion: No Left Turn Lane Required
Warrant for Left-Turn Storage Lanes on Two-Lane Highway

Project: Lovettesville
Intersection: E Broad Way/N(S) Light Street

Approach Direction: Eastbound
Peak Hour: PM

Peak Hour Left Turns ($V_L$): 11 vph
Advancing Volume ($V_A$): 123 vph
Opposing Volume ($V_O$): 539 vph
Operating/Design Speed ($V$): 30 mph

% Left Turns in $V_A$ (L): 10% (Calculated Value: 8.9%)
% Trucks in $V_L$: 0%

Conclusion: No Left Turn Lane Required
Warrant for Left-Turn Storage Lanes on Two-Lane Highway

Project: Lovettesville
Intersection: E Broad Way/N(S) Light Street

Approach Direction: Westbound
Peak Hour: AM

Peak Hour Left Turns ($V_L$): 1 vph
Advancing Volume ($V_A$): 127 vph
Opposing Volume ($V_O$): 322 vph
Operating/Design Speed ($V$): 30 mph

% Left Turns in $V_A$ (L): 5% (Calculated Value: 0.8%)
% Trucks in $V_L$: 0%

**Conclusion:** No Left Turn Lane Required
Warrant for Left-Turn Storage Lanes on Two-Lane Highway

Project: Lovettesville
Intersection: E Broad Way/N(S) Light Street

Approach Direction: Westbound
Peak Hour: PM

Peak Hour Left Turns ($V_L$): 2 vph
Advancing Volume ($V_A$): 539 vph
Opposing Volume ($V_O$): 123 vph
Operating/Design Speed ($V$): 30 mph

% Left Turns in $V_A$ ($L$): 5% (Calculated Value: 0.4%)
% Trucks in $V_L$: 0%

Conclusion: No Left Turn Lane Required
Warrant for Left-Turn Storage Lanes on Two-Lane Highway

Project: Lovettesville
Intersection: E Broad Way/Loudoun Street

Approach Direction: Eastbound
Peak Hour: AM

Peak Hour Left Turns ($V_L$): 8 vph
Advancing Volume ($V_A$): 337 vph
Opposing Volume ($V_O$): 97 vph
Operating/Design Speed ($V$): 30 mph

% Left Turns in $V_A$ ($L$): 5% (Calculated Value: 2.4%)
% Trucks in $V_L$: 0%

Conclusion: No Left Turn Lane Required
Warrant for Left-Turn Storage Lanes on Two-Lane Highway

Project: Lovettesville
Intersection: E Broad Way/Loudoun Street

Approach Direction: Eastbound
Peak Hour: PM

Peak Hour Left Turns ($V_L$): 3 vph
Advancing Volume ($V_A$): 123 vph
Opposing Volume ($V_O$): 446 vph
Operating/Design Speed ($V$): 30 mph

% Left Turns in $V_A$ (L): 5% (Calculated Value: 2.4%)
% Trucks in $V_L$: 0%

Conclusion: No Left Turn Lane Required
Warrant for Left-Turn Storage Lanes on Two-Lane Highway

Project: Lovettesville
Intersection: E Broad Way/Loudoun Street

Approach Direction: Westbound
Peak Hour: AM

Peak Hour Left Turns ($V_L$): 18 vph
Advancing Volume ($V_A$): 97 vph
Opposing Volume ($V_O$): 337 vph
Operating/Design Speed ($V$): 30 mph

% Left Turns in $V_A$ (L): 20% (Calculated Value: 18.6%)
% Trucks in $V_L$: 0%

Conclusion: No Left Turn Lane Required
Warrant for Left-Turn Storage Lanes on Two-Lane Highway

Project: Lovettesville
Intersection: E Broad Way/Loudoun Street

Approach Direction: Westbound
Peak Hour: PM

Peak Hour Left Turns ($V_L$): 31 vph
Advancing Volume ($V_A$): 446 vph
Opposing Volume ($V_O$): 123 vph
Operating/Design Speed (V): 30 mph

% Left Turns in $V_A$ (L): 10% (Calculated Value: 7.0%)
% Trucks in $V_L$: 0%

Conclusion: No Left Turn Lane Required
Warrant for Left-Turn Storage Lanes on Two-Lane Highway

Project: Lovettesville
Intersection: E Broad Way/Locust Street

Approach Direction: Westbound
Peak Hour: AM

Peak Hour Left Turns ($V_L$): 22 vph
Advancing Volume ($V_A$): 103 vph
Opposing Volume ($V_O$): 321 vph
Operating/Design Speed ($V$): 30 mph

% Left Turns in $V_A$ (L): 30% (Calculated Value: 21.4%)
% Trucks in $V_L$: 0%

Conclusion: No Left Turn Lane Required
Warrant for Left-Turn Storage Lanes on Two-Lane Highway

Project: Lovettesville
Intersection: E Broad Way/Locust Street

Approach Direction: Westbound
Peak Hour: PM

Peak Hour Left Turns ($V_L$): 58 vph
Advancing Volume ($V_A$): 473 vph
Opposing Volume ($V_O$): 116 vph
Operating/Design Speed ($V$): 30 mph

% Left Turns in $V_A$ (L): 15% (Calculated Value: 12.3%)
% Trucks in $V_L$: 0%

Conclusion: 100’ Left Turn Lane Required
Appendix F: Project Cost Estimates
### Lovettsville Transportation Master Plan

#### Appendix F: Project Cost Estimates

**PROJECT COST ESTIMATE**

**SITE:** Lovettesville Elementary School (South Entrance) to East Broad Way

**PROJ.: SOUTH LOUDOUN STREETSCAPE IMPROVEMENTS**

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<td>$25,000.00</td>
<td>$25,000.00</td>
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<td>0.7</td>
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<td>211</td>
<td>MINOR STR. EXCAV. PIPE CULVERT</td>
<td>CY 617</td>
<td>1</td>
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<td>$26,524.83</td>
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<tr>
<td>505</td>
<td>BEDDING MATL. AGGR. NO. 25 OR 26</td>
<td>TON 1182</td>
<td>1</td>
<td>$41.58</td>
<td>$49,147.56</td>
</tr>
<tr>
<td>525</td>
<td>CONCRETE CLASS A3 MISC.</td>
<td>CY 1.5</td>
<td>1</td>
<td>$2,831.65</td>
<td>$4,247.48</td>
</tr>
<tr>
<td>1150</td>
<td>15&quot; PIPE</td>
<td>LF 375</td>
<td>1</td>
<td>$141.62</td>
<td>$53,107.50</td>
</tr>
<tr>
<td>1180</td>
<td>18&quot; PIPE</td>
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<td>1</td>
<td>$110.47</td>
<td>$334,724.10</td>
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<tr>
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<td>24&quot; PIPE</td>
<td>LF 200</td>
<td>1</td>
<td>$340.88</td>
<td>$68,176.00</td>
</tr>
<tr>
<td>211</td>
<td>MINOR STR. EXCAV. PIPE CULVERT</td>
<td>CY 617</td>
<td>1</td>
<td>$42.99</td>
<td>$26,524.83</td>
</tr>
<tr>
<td>505</td>
<td>BEDDING MATL. AGGR. NO. 25 OR 26</td>
<td>TON 1182</td>
<td>1</td>
<td>$41.58</td>
<td>$49,147.56</td>
</tr>
<tr>
<td>525</td>
<td>CONCRETE CLASS A3 MISC.</td>
<td>CY 1.5</td>
<td>1</td>
<td>$2,831.65</td>
<td>$4,247.48</td>
</tr>
<tr>
<td>1150</td>
<td>15&quot; PIPE</td>
<td>LF 375</td>
<td>1</td>
<td>$141.62</td>
<td>$53,107.50</td>
</tr>
<tr>
<td>1180</td>
<td>18&quot; PIPE</td>
<td>LF 3030</td>
<td>1</td>
<td>$110.47</td>
<td>$334,724.10</td>
</tr>
<tr>
<td>1240</td>
<td>24&quot; PIPE</td>
<td>LF 200</td>
<td>1</td>
<td>$340.88</td>
<td>$68,176.00</td>
</tr>
</tbody>
</table>

**MOBILIZATION:** $119,285.30

**SUBTOTAL:** $1,904,991.23

**ENGINEERING & CEI:** $571,497.37 30.0% OF SUBTOTAL

**CONTINGENCIES:** $380,998.25 20.0% OF SUBTOTAL

**TOTAL:** $2,857,486.85

**Estimate Breakdown (no PE or CEI)**

- **Grading & Pavement:** 72%
- **Utilities:** 0%
- **GR&Traffic:** 18%
- **Landscaping:** 3%
- **Signs & Signals:** 3%
- **Bridge:** 0%
- **Incidentals:** 0%
- **E&S:** 3%

---

**Asphalt Type Distribution**

- **0%**
- **0%**
- **0%**
- **6%**

---

**Lovettsville Transportation Master Plan**

Appendix F: Project Cost Estimates
## Appendix F: Project Cost Estimates

### Locust Streetscape Improvements

**SITE:** South Loudoun Street to East Broadway

#### Project Cost Estimate

<table>
<thead>
<tr>
<th>ITEM</th>
<th>ITEM DESCRIPTION</th>
<th>UNITS</th>
<th>QUAN.</th>
<th>UNIT PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>CONSTRUCTION SURVEYING (CONSTR.)</td>
<td>LS 1</td>
<td>$25,000.00</td>
<td>$25,000.00</td>
<td></td>
</tr>
<tr>
<td>111</td>
<td>CLEARING AND GRUBBING</td>
<td>ACRE 0.4</td>
<td>$20,000.00</td>
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<td>15’ PIPE</td>
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<td>$11,074.07</td>
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<tr>
<td>1120</td>
<td>24’ PIPE</td>
<td>LF 200</td>
<td>$340.88</td>
<td>$68,176.00</td>
<td></td>
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<tr>
<td>6220</td>
<td>24’ END SECTION ES 1</td>
<td>EA 1</td>
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<td>$2,984.00</td>
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<td>6350</td>
<td>DROP INLET DI 3CL-6”</td>
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<td>EROS. CONTR. STONE CL. I, EC 1</td>
<td>TON 2.3</td>
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<td>TON 513</td>
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<td>10650</td>
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<tr>
<td>12000</td>
<td>STD. COMB. CURB &amp; GUTTER CG 6</td>
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<td>12504</td>
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<td>CG 12 DETECTABLE WARNING SURFACE</td>
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<td>SY 1123</td>
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<td>13350</td>
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<tr>
<td>24150</td>
<td>CONSTRUCTION SIGNS</td>
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<td>24478</td>
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<td>$16,078.68</td>
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<td>24278</td>
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<td>24332</td>
<td>FLAGGER SERVICE</td>
<td>HR 400</td>
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<td>25506</td>
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<td>MO 7</td>
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<td>ACRE 0.2</td>
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<tr>
<td>27102</td>
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<tr>
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<td>REGULAR SEED</td>
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<tr>
<td>28953</td>
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**Locked MOBILIZATION** $60,633.07 = $20,000 + 7.5% OF (THE SUM OF BID ITEMS - $200,000)

**SUBTOTAL** $80,407.32

**ENGINEERING & CEI** $240,722.19

**CONTINGENCIES** $160,481.46

**TOTAL** $1,203,610.97

Right of way and Utilities not included

---

**Estimate Breakdown (no PE or CEI)**

- **Asphalt (as % of Proj. Total):** 67%
- **Utilities:** 5%
- **Grading & Pavement:** 23%
- **Landscaping:** 5%
- **Signs & Signals:** 1%
- **Bridge:** 0%
- **Grading:** 0%
- **Incidentals:** 0%
- **Traffic:** 0%
- **Signs:** 0%
- **Environmental & E&S:** 3%

**Asphalt Type Distribution**

<table>
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<th>Type</th>
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<tr>
<td>35,817</td>
<td>100%</td>
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</tbody>
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**Regression Model**

- **Locality:** Nova
- **Pricing Model Date:** 4/5/2020
- **Current To:** 3/2020
- **Letting:**

---

Total Number of Bid Items = 34

---

C:EPR, P:C:Jobs/Lovettsville/Lovettsville #4 Locust Streetscape
## Appendix F: Project Cost Estimates

### Lovettsville Transportation Master Plan

#### Lovettsville Transportation Master Plan

**SITE:** Town Square North Intersection and East Intersection

#### PROJECT COST ESTIMATE

**PROJ.:** TOWN SQUARE SIDEWALK EXTENSION

**SITE:.moves** Town Square North Intersection and East Intersection

<table>
<thead>
<tr>
<th>ITEM</th>
<th>ITEM DESCRIPTION</th>
<th>UNITS</th>
<th>QUAN.</th>
<th>UNIT PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>CONSTRUCTION SURVEYING (CONSTR.)</td>
<td>LS</td>
<td>1</td>
<td>$8,000.00</td>
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<td>530</td>
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<td>$28,588.20</td>
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<tr>
<td>23550</td>
<td>TEMP. SAFETY FENCE 4'</td>
<td>LF</td>
<td>477</td>
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<td>LS</td>
<td>1</td>
<td>$5,000.00</td>
<td>$5,000.00</td>
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</table>

**Locked**

**MOBILIZATION** $8,331.72 = 10% OF THE SUM OF BID ITEMS

**SUBTOTAL** $91,648.90

**ENGINEERING & CEI** $27,494.67 = 30.0% OF SUBTOTAL

**CONTINGENCIES** $18,329.78 = 20.0% OF SUBTOTAL

**TOTAL** $137,473.35

---

**Estimate Breakdown (no PE or CEI)**

- Grading & Pavement: 42%
- Utilities: 0%
- GR&Traffic: 6%
- Landscaping: 46%
- Signs & Signals: 0%
- Bridge: 0%
- Incidentals: 0%
- E&S: 0%

---

**Asphalt Type Distribution**

C:\EPR, P.C\Jobs\Lovettesville\Lovettesville #5 Town Square Sidewalk Extension
## Lovettsville Transportation Master Plan

### Appendix F: Project Cost Estimates

#### Lovettsville Transportation Master Plan

**SITE:** Hammond Drive to Town Square

### Project Cost Estimate

**PROJECT:** BERLIN TURNPIKE SHARED-USE PATH EXTENSION

**SITE:** Hammond Drive to Town Square

**ITEM** | **ITEM DESCRIPTION** | **UNITS** | **QUAN.** | **UNIT PRICE** | **AMOUNT** | **Locked** | **MOBILIZATION** | **$**  
|---|---|---|---|---|---|---|---|---
101 | CONSTRUCTION SURVEYING (CONSTR.) | LS | 1 | $8,000.00 | $8,000.00 | | |  
193 | REGULAR EXCAVATION | CY | 102 | $62.04 | $6,244.48 | | |  
289 | AGGR. BASE MATL. TY. I NO. 21B | SY | 289 | $55.83 | $16,177.37 | | |  
260 | FENCE FE CL VINYL COATED | LF | 260 | $42.40 | $11,024.00 | | |  
260 | TEMP. SAFETY FENCE 4' | LF | 260 | $5.61 | $1,458.60 | | |  
260 | NS REMOVE EXIST. FENCE | LF | 260 | $4.10 | $1,060.00 | | |  
3 | FIELD OFFICE TY.II | MO | 3 | $2,426.84 | $7,280.52 | | |  
0.06 | TOPSOIL CLASS A 2" | ACRE | 1 | $19,582.02 | $11,749.28 | | |  
6 | TEMPORARY SEED | LB | 6 | $42.42 | $254.52 | | |  
8 | REGULAR SEED | LB | 8 | $44.08 | $352.64 | | |  
8 | OVERSEEDING | LB | 8 | $26.59 | $212.72 | | |  
218 | HYDRAULIC EROSION CONTROL PRODUCT TYPE 1 | SY | 218 | $4.02 | $876.36 | | |  
4 | INLET PROTECTION , TYPE A | EA | 4 | $368.28 | $1,473.12 | | |  
1 | NS LANDSCAPE | LS | 1 | $5,000.00 | $5,000.00 | | |  
1 | RELOCATE EXIST. FIRE HYDRANT | EA | 1 | $1,000.00 | $1,000.00 | | |  

**Total Number of Bid items = 16**

**Locked MOBILIZATION** | **$**  
|---|---
10% OF THE SUM OF BID ITEMS | 7,243.04  

**SUBTOTAL** | **$**  
|---|---
79,673.49  

**ENGINEERING & CEI** | **$** | **30.0% OF SUBTOTAL**  
|---|---|---
23,902.05  

**CONTINGENCIES** | **$** | **20.0% OF SUBTOTAL**  
|---|---|---
15,934.70  

**TOTAL** | **$**  
|---|---
119,510.23  

**Regression Model** | **Location** | **Non-Linear**  
|---|---|---
**Pricing Model Date:** 4/5/2020  
**Current To:** 3/20/2020  
**Letting**  

---

**Estimate Breakdown (no PE or CEI)**

- **Grading & Pavement:** 20%
- **Utilities:** 6%
- **GR & Traffic:** 50%
- **Landscaping:** 7%
- **Signs & Signals:** 35%
- **Bridge:** 1%
- **Incidentals:** 0%
- **E & S:** 0%

---

C:/EPR, P.CJobs/Lovettesville/Lovettesville #8 Berlin Turnpike Shareduse Path Ext
## Lovettsville Transportation Master Plan
### Appendix F: Project Cost Estimates

### Lovettsville Transportation Master Plan

#### PROJ.: BERLIN TURNPIKE NORTH SHAREDUSE PATH
#### SITE: West Broadway to Tilgham Place

#### Appendix F: Project Cost Estimates

**PROJECT COST ESTIMATE**

**SITE:** West Broadway to Tilgham Place

**ITEM** | **ITEM DESCRIPTION** | **UNITS** | **QUAN.** | **UNIT PRICE** | **AMOUNT** | **MOBILIZATION** $ | **SUBTOTAL** $ | **ENGINEERING & CEI** $ | **CONTINGENCIES** $ | **TOTAL** $ |
---|---|---|---|---|---|---|---|---|---|---|
101 | Construction Surveying (Constr.) | LS | 0.75 | $20,000.00 | $15,000.00 | $80,000 + 5% of (the sum of bid items - $1 million) |
111 | Clearing and grubbing | ACRE | 1 | $25,000.00 | $25,000.00 | $25,000.00 |
120 | Regular excavation | CY | 1915 | $62.04 | $118,806.00 |
211 | Minor str., excav. pipe culvert | CY | 575 | $42.99 | $24,719.25 |
505 | Bedding matl, agg., no. 25 or 26 | TON | 1344 | $41.58 | $55,883.52 |
525 | Concrete Class A3 Misc. | CY | 1.5 | $2,831.65 | $4,247.48 |
1180 | 18” pipe | LF | 2585 | $110.47 | $285,645.95 |
1240 | 24” pipe | LF | 200 | $340.88 | $68,176.00 |
6241 | 24” End Section Es 1 | EA | 1 | $2,984.00 | $2,984.00 |
6835 | Drop inlet di 2c, l=6’ | CY | 575 | $42.99 | $24,719.25 |
9150 | Eros. contr. stone cl, i, ec 1 | TON | 2.3 | $320.53 | $737.22 |
10128 | Aggr. base matl. ty. i no. 21b | TON | 1108 | $55.83 | $61,859.64 |
12600 | Std. comb. curb & gutter cg 6 | LF | 2585 | $35.24 | $91,095.40 |
12940 | Entrance gutter cg 90 | SY | 55 | $115.38 | $6,345.90 |
13108 | Cg 12 detectable warning surface | SY | 6 | $387.12 | $2,322.72 |
13220 | Hydr. cement conc. sidewalk 4” | SY | 2872 | $53.94 | $154,915.68 |
23560 | “Temp. safety fence 4” | LF | 2585 | $5.61 | $14,501.85 |
24160 | Construction signs | SF | 432 | $28.88 | $12,476.16 |
24278 | Group 2 Channelizing devices | DAY | 27252 | $0.59 | $16,078.68 |
24279 | Port. changeable mess. sign | HR | 4320 | $10.21 | $44,107.20 |
24280 | Flagger service | HR | 400 | $27.01 | $10,804.00 |
25526 | Field office ty, ii | MO | 10 | $2,526.81 | $25,268.10 |
27012 | Topsoil class 2 A” | ACRE | 0.78 | $1,582.02 | $1,233.98 |
27101 | Temporary seed | LB | 78 | $42.42 | $3,280.26 |
27102 | Regular seed | LB | 94 | $44.08 | $4,143.52 |
27103 | Overseeding | LB | 94 | $26.59 | $2,499.46 |
27110 | Hydraulic erosion control product type 1 | SY | 2832 | $4.02 | $11,384.64 |
38953 | Landscaping | LS | 1 | $15,000.00 | $15,000.00 |
50204 | Sign post wood 4” x 4” (relocate mailboxes) | LF | 108 | $75.00 | $8,100.00 |

**Total Number of Bid Items = 29**

**Estimate Breakdown (no PE or CEI)**

- Grading & Pavement: 71%
- Utilities: 0%
- GR&Traffic: 25%
- Landscaping: 0%
- Signs & Signals: 40%
- Bridge: 60%
- Incidents: 80%
- E&S: 100%

**Asphalt Type Distribution**

**Pricing Model Date:** 4/5/2020 **To 3/2020 Letting**

---

C:\EPR, P:\Jobs\Lovettesville\Lovettesville #9 Berlin Turnpike North Shareduse Path

---

**Mobilization $86,940.73 = $80,000 + 5% of (the sum of bid items - $1 million)**

**Subtotal $1,225,755.43**

**Engineering & CEI $367,726.63 30.0% of Subtotal**

**Contingencies $245,151.09 20.0% of Subtotal**

**Total $1,838,633.15**

---

Local Version

Enter % based on Proj. specific conditions & requirements

---

Regression Model: Non-Linear

Locality: Nova

---

\[ C:\EPR, P:C\:Jobs\Lovettesville\Lovettesville \#9 Berlin Turnpike North Shareduse Path \]

---

130 Lovettsville Transportation Master Plan Appendix F: Project Cost Estimates
<table>
<thead>
<tr>
<th>ITEM</th>
<th>ITEM DESCRIPTION</th>
<th>UNITS</th>
<th>QUAN.</th>
<th>UNIT PRICE</th>
<th>AMOUNT</th>
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<tbody>
<tr>
<td>101</td>
<td>CONSTRUCTION SURVEYING (CONSTR.)</td>
<td>LS</td>
<td>1</td>
<td>$8,000.00</td>
<td>$8,000.00</td>
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<tr>
<td>111</td>
<td>CLEARING AND GRUBBING</td>
<td>ACRE</td>
<td>0.13</td>
<td>$20,000.00</td>
<td>2,600.00</td>
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<td>120</td>
<td>REGULAR EXCAVATION</td>
<td>CY</td>
<td>419</td>
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<td>TOPSOIL CLASS A 2&quot;</td>
<td>ACRE</td>
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<td>2,545.66</td>
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<td>TEMPORARY SEED</td>
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<td>$42.42</td>
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<td>38953</td>
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**Mobilization**: $9,280.22 = 10% of the sum of bid items

**Subtotal**: $102,082.47

**Engineering & CEI**: $30,624.74 = 30.0% of subtotal

**Contingencies**: $20,416.49 = 20.0% of subtotal

**Total**: $153,123.70

---

**Estimate Breakdown (no PE or CEI)**

- Grading & Pavement: 71%
- Utilities: 0%
- GR & Traffic: 0%
- Landscaping: 0%
- Signs & Signals: 0%
- Bridge: 0%
- Incidental: 0%
- E&S: 0%

**Asphalt Type Distribution**

- 100% of asphalt type distributed is BM

---

Total Number of Bid Items = 13

---

C:\EPR, P:CJobs\Lovettsville\Lovettsville #10 East Shareduse Path Extension
## Lovettsville Transportation Master Plan

### Appendix F: Project Cost Estimates

**Lovettsville Transportation Master Plan**  
**SITE:** N Berlin Turnpike at West Broad Way

---

**PROJECT COST ESTIMATE**

**PROJ.:** TOWN SQUARE AND WEST BROAD WAY INTERSECTION  
**SITE:** N Berlin Turnpike at West Broad Way

**ITEM** | **ITEM DESCRIPTION** | **UNITS** | **QUAN.** | **UNIT PRICE** | **AMOUNT** | **Locked** | **MOBILIZATION** | **SUBTOTAL** |
--- | --- | --- | --- | --- | --- | --- | --- | --- |
101 | CONSTRUCTION SURVEYING (CONSTR.) | LS | 1 | $8,000.00 | $8,000.00 | | | 18,221.28 |
102 | REGULAR EXCAVATION | CY | 135 | $62.04 | 8,375.40 | | | |
500 | CONCRETE CLASS A3 MISC. | CY | 135 | $716.73 | 96,758.55 | | | |
10128 | AGGR. BASE MATL. TY. I NO. 21B | TON | 298 | $55.83 | 16,637.34 | | | |
24150 | CONSTRUCTION SIGNS | SF | 432 | $28.88 | 12,476.16 | | | |
24278 | GROUP 2 CHANNELIZING DEVICES | DAY | 27252 | $5.59 | 15,019.20 | | | |
25509 | FIELD OFFICE TY.II | MO | 6 | $2,426.81 | 14,560.86 | | | |
54032.1 | TY.B CL.I PAVE. LINE MARK. 4" White | LF | 1500 | $2.16 | 3,240.00 | | | |
54042 | TY.B CL.I PAVE. LINE MARK. 24" | LF | 264 | $9.08 | 2,397.12 | | | |
54300 | PAVE.MESS.MARK.ELONG.ARROW SIN | EA | 10 | $78.21 | 782.10 | | | |
54310 | PAVE.MESS.MARK.ELONG.ARROW DOU | EA | 2 | $199.65 | 399.30 | | | |
54400 | PAVEMENT MESSAGE MARK. “ONLY” | EA | 4 | $446.83 | 1,787.32 | | | |
54626 | PVMT SYMB MRKG (YIELD 2'x3') TY B, CL II | EA | 9 | $80.00 | 720.00 | | | |

Total Number of Bid items = 13

---

**Regression Model:** [Non-Linear]  
**Locality:** Nova  
**Pricing Model Date:** 4/5/2020  
**Current To 3/2020 Letting**

---

**Estimate Breakdown (no PE or CEI)**

- Grading & Pavement: 24%
- Utilities: 5%
- GR & Traffic: 71%
- Landscaping: 0%
- Signs & Signals: 0%
- Bridge: 0%
- Incidents: 0%
- E&S: 0%

---

**Asphalt Type Distribution**

---

C:\EPR, P.C\Jobs\Lovettesville\Lovettesville #11 Town Square_West Broad Way Intersection
PROJECT COST ESTIMATE

PROJ.: BERLIN TURNPIKE AND SOUTH LOUDOUN INTERSECTION
SITE: Berlin Turnpike at South Loudoun Street

ITEM DESCRIPTION

REGULAR EXCAVATION CY 6089 $62.04 377,761.56$
RADIAL CURB CG

REINF. HYDR.CEM.CONC. PAVE. 8" SY 327 $178.00 58,206.00$
ASPHALT CONCRETE TY. SM 9.5D TON 1182 $135.67 160,361.94$
ASPHALT CONCRETE TY. SM 19.0 TON 1334 $165.93 221,350.62$
AGGR. MATL. NO. 21B TON 1760 $55.83 98,260.80$
RELOCATE EXISTING 1 POST GROUND MOUNTED SIGN PANEL EA 5 $288.57 1,442.85$

Bridge Category Breakdown

QUAN.

Temporary Silt Fence LF 4000 $4.43 17,720.00$

Township Road Silt Fence LF 100 $321.55 32,155.00$

8000F MOY

3216 MOY

6102 RADIAL Curb CG 2

10124 STD. CURB CG 3

10216 RAD. COMB. CURB & GUTTER CG 6

24104 CONSTRUCTION SIGNS

24225 GROUP 2 CHANNELIZING DEVICES

24227 PORT. CHANGABLE MESS. SIGN

24231 FLAGGER SERVICE

24420 DEMO. OF PAVEMENT (RIGID)

25500 FIELD OFFICE TY. II

27112 TEMPORARY SEED

27120 REGULAR SEED

27120 OVERSEEDING

27112 LEME SEED

27112 LEME OVERSEEDING

27112 HYDRAULIC EROSION CONTROL PRODUCT TYPE 1

27112 HYDRAULIC EROSION CONTROL PRODUCT TYPE 4

27229 FERTILIZER(10 10 10)

37252 LIME

37240 MOYING

37595 TEMP. SILT FENCE

38505 NS LANDSCAPE

50108 SIGN PANEL

50349 RELOCATE EXISTING 1 POST GROUND MOUNTED SIGN PANEL

63433 EROSION CONTROL

63435 LIGHTNING POLE LF 2 TYPE D

63436 ELECT. SERVICE SE 8 TYPE A

63532 CONTROL CENTER CIV 1 TYPE C

63552 LUMINARE 250 WATT H.P.S.

63557 JUNCTION BOX JB 52

63595 WRODE CONDUIT 2

63595 2" PVC CONDUIT

63620 TRENCH EXCAVATION ECI 1

63625 TEST BORE

Total Number of Bid Items = 62

Lovettsville Transportation Master Plan
Appendix F: Project Cost Estimates
## Appendix F: Project Cost Estimates

### Lovettsville Transportation Master Plan

#### Lovettsville at South Loudoun Interchange

<table>
<thead>
<tr>
<th>Item</th>
<th>Item Description</th>
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<th>Quan.</th>
<th>Unit Price</th>
<th>Amount</th>
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<td>$45,000.00</td>
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<td>Cleaning and Grubbing</td>
<td>ACRE</td>
<td>0.86</td>
<td>$20,000.00</td>
<td>17,200.00</td>
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<td>122</td>
<td>Regular Excavation</td>
<td>CY</td>
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<td>$62.04</td>
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<td>211</td>
<td>Minor Str. Excav. PIPES Culvert</td>
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<td>155</td>
<td>$42.99</td>
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<td>505</td>
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<td>TON</td>
<td>1544</td>
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<tr>
<td>522</td>
<td>Concrete Class A3 Misc.</td>
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<td>LF</td>
<td>920</td>
<td>$110.42</td>
<td>101,586.40</td>
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<td>1210</td>
<td>Storm Sewer Pipe 24&quot;</td>
<td>LF</td>
<td>98</td>
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<td>32,724.48</td>
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<td>1306</td>
<td>Storm Sewer Pipe 30&quot;</td>
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<td>4</td>
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<td>688</td>
<td>$55.83</td>
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<td>Flexible Pave. Paving Above 2&quot;-4&quot;</td>
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<td>1520</td>
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<td>1840</td>
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<td>Construction Signs</td>
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<td>3078</td>
<td>Sign Panel</td>
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<td>5</td>
<td>$288.57</td>
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<td>Sign Post STR-1, 2&quot; 1/2, 12 Gauge</td>
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**Total Number of Bid Items = 46**

### Project Cost Estimate

**PROJ.: BERLIN TURNPIKE AND SOUTH LOUDOUN INTERSECTION**

**SITE:** Berlin Turnpike at South Loudoun Street

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<tr>
<th>Item</th>
<th>Description</th>
<th>Amount</th>
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<tr>
<td>1102</td>
<td>E&amp;O</td>
<td>$4,931.20</td>
</tr>
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**Mobilization:** $110,650.73

**Engineering & CEI:** $723,939.41

**Contingencies:** $344,733.05

**Total:** $2,792,337.74

**Estimate Breakdown (no PE or CEI):**

- **Asphalt:** 43%
- **Superstr. (Widening):** 15%
- **Substr. (New):** 7%
- **Substr. (Widening):** 3%
- **Incidental:** 2%
- **Bridge:** 4%
- **Signs & Signals:** 1%
- **Pavement:** 32%
- **Other:** 5%

**Asphalt Type Distribution:**

- SMA: 41%
- SMA: 11%
- MA: 37%
- Other: 5%

**Bridge Category Breakdown:**

- Superstr. (New): 41%
- Substr. (New): 2%
- Incidental: 3%
- Superstr. (Widening): 50%
- Substr. (Widening): 5%
## Lovettsville Transportation Master Plan

### Appendix F: Project Cost Estimates

#### Lovettsville Transportation Master Plan

**PROJECT COST ESTIMATE**

**SITE:** Berlin Trunkpke to Lovettesville Elementary School

**PROJ.:** SOUTH LOUDOUN SCHOOL SIDEWALK

**SITE:** Berlin Trunkpke to Lovettesville Elementary School

**PROJ.:** SOUTH LOUDOUN SCHOOL SIDEWALK

**ITEM** | **ITEM DESCRIPTION** | **UNITS** | **QUAN.** | **UNIT PRICE** | **AMOUNT** |
--- | --- | --- | --- | --- | --- |
101 | CONSTRUCTION SURVEYING (CONSTRL.) | LS | 1 | $8,000.00 | $8,000.00 |
111 | CLEARING AND GRUBBING | ACRE | 0.12 | $20,000.00 | $2,400.00 |
120 | REGULAR EXCAVATION | CY | 130 | $62.40 | $8,112.00 |
211 | MINOR STR. EXCAV. PIPE CULVERT | CY | 96 | $42.99 | $4,127.04 |
500 | BEDDING MATL.AGGR.NO. 25 OR 26 | TON | 270 | $41.58 | $11,226.60 |
1150 | 15" PIPE | LF | 48 | $141.62 | $6,797.76 |
1160 | 18" PIPE | LF | 300 | $110.47 | $33,141.00 |
1240 | 24" PIPE | LF | 320 | $340.88 | $109,081.60 |
6241 | 24" END SECTION ES 1 | EA | 1 | $2,984.00 | $2,984.00 |
6885 | DROP INLET DI 3C,L=6" | EA | 5 | $6,225.00 | $26,125.00 |
9160 | EROS.CONTR.STONE CL. I, EC 1 | TON | 12.6 | $320.53 | $4,038.68 |
10128 | AGGR. BASE MATL. TY. I NO. 21B | TON | 233 | $55.83 | $13,008.39 |
12600 | STD. COMB. CURB & GUTTER CG 6 | LF | 520 | $35.24 | $18,324.80 |
13108 | CG 12 DETECTABLE WARNING SURFACE | SY | 3 | $387.12 | $1,161.36 |
13220 | HYDR. CEMENT CONC. SIDEWALK 4" | SY | 578 | $53.94 | $31,777.32 |
24160 | CONSTRUCTION SIGNS | SF | 216 | $28.88 | $6,238.08 |
24278 | GROUP 2 CHANNELIZING DEVICES | DAY | 14715 | $0.59 | $8,681.85 |
24279 | PORT.CHANGEABLE MESS. SIGN | HR | 4320 | $10.21 | $44,107.20 |
24282 | FLAGGER SERVICE | HR | 400 | $27.01 | $10,804.00 |
25506 | FIELD OFFICE TY.II | MO | 3 | $2,426.81 | $7,280.43 |
27012 | TOPSOIL CLASS A 2" | ACRE | 0.12 | $19,582.02 | $2,349.84 |
27101 | TEMPORARY SEED | LB | 12 | $42.42 | $509.04 |
27102 | REGULAR SEED | LB | 14 | $44.08 | $617.12 |
27103 | OVERSEEDING | LB | 13 | $26.59 | $345.67 |
27110 | HYDRAULIC EROSION CONTROL PRODUCT TYPE 1 | SY | 436 | $4.02 | $1,752.72 |
38953 | NS LANDSCAPE | LS | 1 | $5,000.00 | $5,000.00 |

**MOBILIZATION $** | $32,554.36 | = $20,000. + 7.5% OF (THE SUM OF BID ITEMS - $200,000)

**SUBTOTAL** | $399,945.86 |

**ENGINEERING & CEI** | $119,983.76 | 30.0% OF SUBTOTAL

**CONTINGENCIES** | $79,989.17 | 20.0% OF SUBTOTAL

**TOTAL** | $599,918.79 |

### Estimate Breakdown (no PE or CEI)

- **Grading & Pavement:** 67%
- **Utilities:** 0%
- **GR&Traffic:** 0%
- **Landscaping:** 0%
- **Signs & Signals:** 0%
- **Bridge:** 0%
- **Incidentals:** 0%
- **E&S:** 2%

**Total Number of Bid items = 26**
## Lovettsville Transportation Master Plan

### Appendix F: Project Cost Estimates

**PROJECT COST ESTIMATE**

**PROJ.:** TOWN SQUARE AND WEST BROAD WAY INTERSECTION  
**SITE:** N Berlin Turnpike at West Broad Way

<table>
<thead>
<tr>
<th>ITEM</th>
<th>ITEM DESCRIPTION</th>
<th>UNITS</th>
<th>QUAN.</th>
<th>UNIT PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>CONSTRUCTION SURVEYING (CONSTR.)</td>
<td>LS</td>
<td>1</td>
<td>$5,000.00</td>
<td>$5,000.00</td>
</tr>
<tr>
<td>120</td>
<td>REGULAR EXCAVATION</td>
<td>CY</td>
<td>40</td>
<td>$62.04</td>
<td>2,481.60</td>
</tr>
<tr>
<td>555</td>
<td>CONCRETE CLASS A3 MISC.</td>
<td>CY</td>
<td>56</td>
<td>$716.73</td>
<td>40,136.88</td>
</tr>
<tr>
<td>1010</td>
<td>AGGR. BASE MATL. TY. I NO. 21B</td>
<td>TON</td>
<td>61.5</td>
<td>$55.83</td>
<td>3,433.55</td>
</tr>
<tr>
<td>12600</td>
<td>STD. COMB. CURB &amp; GUTTER CG 6</td>
<td>LF</td>
<td>1050</td>
<td>$35.24</td>
<td>37,002.00</td>
</tr>
<tr>
<td>13108</td>
<td>CG 12 DETECTABLE WARNING SURFACE</td>
<td>SY</td>
<td>15.5</td>
<td>$387.12</td>
<td>6,000.36</td>
</tr>
<tr>
<td>13220</td>
<td>HYDR. CEMENT CONC. SIDEWALK 4&quot;</td>
<td>SY</td>
<td>40</td>
<td>$53.94</td>
<td>2,156.70</td>
</tr>
<tr>
<td>24160</td>
<td>CONSTRUCTION SIGNS</td>
<td>SF</td>
<td>432</td>
<td>$28.88</td>
<td>12,476.16</td>
</tr>
<tr>
<td>24278</td>
<td>GROUP 2 CHANNELIZING DEVICES</td>
<td>DAY</td>
<td>27252</td>
<td>$0.59</td>
<td>16,078.68</td>
</tr>
<tr>
<td>25504</td>
<td>FIELD OFFICE TY.II</td>
<td>MO</td>
<td>3</td>
<td>$2,426.81</td>
<td>7,280.43</td>
</tr>
<tr>
<td>54042</td>
<td>TY.B CL.I PAVE. LINE MARK. 24&quot;</td>
<td>LF</td>
<td>336</td>
<td>$9.08</td>
<td>3,050.88</td>
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</table>

**Mobilization:** $13,509.81  = 10% of the sum of bid items  
**Subtotal:** $148,607.95

**Engineering & CEI:** $44,582.38  = 30% of subtotal  
**Contingencies:** $29,721.59  = 20% of subtotal  
**Total:** $222,911.92

---

**Estimate Breakdown (no PE or CEI):**

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grading &amp; Pavement</td>
<td>65%</td>
</tr>
<tr>
<td>Utilities</td>
<td>0%</td>
</tr>
<tr>
<td>GR &amp; Traffic</td>
<td>0%</td>
</tr>
<tr>
<td>Landscaping</td>
<td>0%</td>
</tr>
<tr>
<td>Signs &amp; Signals</td>
<td>0%</td>
</tr>
<tr>
<td>Bridge</td>
<td>0%</td>
</tr>
<tr>
<td>Incidentals</td>
<td>0%</td>
</tr>
<tr>
<td>E&amp;S</td>
<td>0%</td>
</tr>
</tbody>
</table>

**Asphalt Type Distribution:**

- Grading & Pavement: 65%
- Utility: 0%
- GR & Traffic: 0%
- Landscaping: 0%
- Signs & Signals: 0%
- Bridge: 0%
- Incidentals: 0%
- E&S: 0%

---

C:\EPR, P.C|Jobs\Lovettesville\Lovettesville #14 Cooper Run Pedestrian Improvements_Traffic Calming
### Lovettsville Transportation Master Plan

#### Appendix F: Project Cost Estimates

**PROJECT COST ESTIMATE**

**PROJ.:** SOUTH CHURCH SIDEWALK WIDENING  
**SITE:** Berlin Turnpike to Oktoberfest Way

<table>
<thead>
<tr>
<th>ITEM</th>
<th>ITEM DESCRIPTION</th>
<th>UNITS</th>
<th>QUAN.</th>
<th>UNIT PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>CONSTRUCTION SURVEYING (CONSTR.)</td>
<td>LS</td>
<td>1</td>
<td>$5,000.00</td>
<td>$5,000.00</td>
</tr>
<tr>
<td>111</td>
<td>CLEARING AND GRUBBING</td>
<td>ACRE</td>
<td>0.05</td>
<td>$20,000.00</td>
<td>$1,000.00</td>
</tr>
<tr>
<td>120</td>
<td>REGULAR EXCAVATION</td>
<td>CY</td>
<td>55</td>
<td>$62.04</td>
<td>$3,412.20</td>
</tr>
<tr>
<td>10178</td>
<td>AGGR. BASE MATL. TY. I NO. 21B</td>
<td>TON</td>
<td>54</td>
<td>$55.83</td>
<td>$3,014.82</td>
</tr>
<tr>
<td>13108</td>
<td>CG 12 DETECTABLE WARNING SURFACE</td>
<td>SY</td>
<td>4</td>
<td>$387.12</td>
<td>$1,548.48</td>
</tr>
<tr>
<td>13220</td>
<td>HYDR. CEMENT CONC. SIDEWALK 4&quot;</td>
<td>SY</td>
<td>310</td>
<td>$53.94</td>
<td>$16,721.40</td>
</tr>
<tr>
<td>25506</td>
<td>FIELD OFFICE TY.II</td>
<td>MO</td>
<td>1</td>
<td>$2,426.81</td>
<td>$2,426.81</td>
</tr>
<tr>
<td>27012</td>
<td>TOPSOIL CLASS A 2&quot;</td>
<td>ACRE</td>
<td>0.05</td>
<td>$19,582.02</td>
<td>$979.10</td>
</tr>
<tr>
<td>27101</td>
<td>TEMPORARY SEED</td>
<td>LB</td>
<td>5</td>
<td>$42.42</td>
<td>$212.10</td>
</tr>
<tr>
<td>27102</td>
<td>REGULAR SEED</td>
<td>LB</td>
<td>6</td>
<td>$44.08</td>
<td>$264.48</td>
</tr>
<tr>
<td>27103</td>
<td>OVERSEEDING</td>
<td>LB</td>
<td>6</td>
<td>$26.59</td>
<td>$159.54</td>
</tr>
<tr>
<td>27110</td>
<td>HYDRAULIC EROSION CONTROL PRODUCT TYPE 1</td>
<td>SY</td>
<td>182</td>
<td>$4.02</td>
<td>$731.64</td>
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<tr>
<td>38953</td>
<td>NS LANDSCAPE</td>
<td>LS</td>
<td>1</td>
<td>$3,000.00</td>
<td>$3,000.00</td>
</tr>
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</table>

**TOTAL:** $63,476.44

**MOBILIZATION:** $3,847.06 = 10% OF THE SUM OF BID ITEMS

**ENGINEERING & CEI:** $12,695.29 = 30% OF SUBTOTAL

**CONTINGENCIES:** $8,463.53 = 20% OF SUBTOTAL

**TOTAL:** $38,471 $

**Estimate Breakdown (no PE or CEI)**

- **32%** Grading & Pavement
- **32%** Utilities
- **54%** GR & Traffic
- **0%** Landscaping
- **0%** Signs & Signals
- **0%** Bridge
- **0%** Incidents
- **6%** E & S

**Asphalt Type Distribution**

Total Number of Bid items = 13

C:\EPR, P.C\Jobs\Lovettesville\Lovettesville #19 South Church Sidewalk Widening
## Lovettsville Transportation Master Plan

### Appendix F: Project Cost Estimates

#### West Broad Way Sidewalk

<table>
<thead>
<tr>
<th>ITEM</th>
<th>ITEM DESCRIPTION</th>
<th>UNITS</th>
<th>QUAN.</th>
<th>UNIT PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>Construction Surveying (Constl.)</td>
<td>LS</td>
<td>1</td>
<td>$8,000.00</td>
<td>$8,000.00</td>
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<tr>
<td>111</td>
<td>Clearing and Grubbing</td>
<td>ACRE</td>
<td>0.1</td>
<td>$20,000.00</td>
<td>$2,000.00</td>
</tr>
<tr>
<td>120</td>
<td>Regular Excavation</td>
<td>CY</td>
<td>113</td>
<td>$62.04</td>
<td>$7,010.52</td>
</tr>
<tr>
<td>10728</td>
<td>AGGR. BASE MATL. TY. I NO. 21B</td>
<td>TON</td>
<td>178</td>
<td>$55.83</td>
<td>$9,937.74</td>
</tr>
<tr>
<td>13108</td>
<td>CG 12 DETECTABLE WARNING SURFACE</td>
<td>SY</td>
<td>2</td>
<td>$387.12</td>
<td>$774.24</td>
</tr>
<tr>
<td>13220</td>
<td>HYDR. CEMENT CONC. SIDEWALK 4”</td>
<td>SY</td>
<td>317</td>
<td>$53.94</td>
<td>$17,098.98</td>
</tr>
<tr>
<td>25506</td>
<td>Field Office TY. II</td>
<td>MO</td>
<td>2</td>
<td>$2,426.81</td>
<td>$4,853.62</td>
</tr>
<tr>
<td>27012</td>
<td>TOPSOIL CLASS A 2”</td>
<td>ACRE</td>
<td>0.1</td>
<td>$19,582.02</td>
<td>$1,958.20</td>
</tr>
<tr>
<td>27101</td>
<td>Temporary Seed</td>
<td>LB</td>
<td>10</td>
<td>$42.42</td>
<td>$424.20</td>
</tr>
<tr>
<td>27102</td>
<td>Regular Seed</td>
<td>LB</td>
<td>12</td>
<td>$44.08</td>
<td>$528.96</td>
</tr>
<tr>
<td>27103</td>
<td>Overseeding</td>
<td>LB</td>
<td>12</td>
<td>$26.59</td>
<td>$319.08</td>
</tr>
<tr>
<td>27110</td>
<td>Hydraulic Erosion Control Product Type 1</td>
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<td>363</td>
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<tr>
<td>27451</td>
<td>Inlet Protection, Type A</td>
<td>EA</td>
<td>6</td>
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<td>$2,110.14</td>
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<td>36953</td>
<td>NS Landscape</td>
<td>LS</td>
<td>1</td>
<td>$7,000.00</td>
<td>$7,000.00</td>
</tr>
<tr>
<td>50340</td>
<td>Relocate Existing 1 Post Ground Mounted Sign Panel</td>
<td>EA</td>
<td>3</td>
<td>$288.57</td>
<td>$865.71</td>
</tr>
</tbody>
</table>

**Total Number of Bid Items = 15**

#### Estimate Breakdown (no PE or CEI)

- **Grading & Pavement**: 42%
- **Utilities**: 35%
- **GR&Traffic**: 11%
- **Landscaping**: 11%
- **Signs & Signals**: 10%
- **Bridge**: 6%
- **Incidentals**: 0%
- **E&S**: 0%

#### Asphalt Type Distribution

- **Asphalt**: 0%
- **Ty. SM**: 0%
- **Ty. IM**: 0%
- **Ty. BM**: 0%
- **Other**: 0%

---

C:\EPR, P.C\Jobs\Lovettsville\Lovettsville #20 West Broad Way Sidewalk
## Lovettsville Transportation Master Plan

### Appendix F: Project Cost Estimates

#### PROJ.: EAST BROAD WAY SIDEWALK
SITE: South Church Street to Town Square

<table>
<thead>
<tr>
<th>ITEM</th>
<th>ITEM DESCRIPTION</th>
<th>UNITS</th>
<th>QUAN.</th>
<th>UNIT PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>CONSTRUCTION SURVEYING (CONSTR.)</td>
<td>LS</td>
<td>1</td>
<td>$8,000.00</td>
<td>$8,000.00</td>
</tr>
<tr>
<td>111</td>
<td>CLEARING AND GRUBBING</td>
<td>ACRE</td>
<td>0.04</td>
<td>$20,000.00</td>
<td>800.00</td>
</tr>
<tr>
<td>120</td>
<td>REGULAR EXCAVATION</td>
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<td>211</td>
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<td>CY</td>
<td>27</td>
<td>$42.99</td>
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</tr>
<tr>
<td>505</td>
<td>BEDDING MATL.AGGR.NO. 25 OR 26</td>
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<td>63</td>
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<tr>
<td>1180</td>
<td>18&quot; PIPE</td>
<td>LF</td>
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<tr>
<td>6181</td>
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<tr>
<td>9150</td>
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<tr>
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<td>160</td>
<td>$35.24</td>
<td>5,638.40</td>
</tr>
<tr>
<td>12699</td>
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<td>SF</td>
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<td>6,238.08</td>
</tr>
<tr>
<td>13106</td>
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<td>SY</td>
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<tr>
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<td>13565</td>
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<td>LF</td>
<td>160</td>
<td>$5.61</td>
<td>997.60</td>
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<td>24160</td>
<td>CONSTRUCTION SIGNS</td>
<td>SF</td>
<td>216</td>
<td>$28.88</td>
<td>6,238.08</td>
</tr>
<tr>
<td>24278</td>
<td>GROUP 2 CHANNELIZING DEVICES</td>
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<td>$0.95</td>
<td>4,354.20</td>
</tr>
<tr>
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<td>4,853.62</td>
</tr>
<tr>
<td>27012</td>
<td>TOPSOIL CLASS A 2&quot;</td>
<td>ACRE</td>
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<td>582.90</td>
</tr>
<tr>
<td>27451</td>
<td>INLET PROTECTION , TYPE A</td>
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<td>$351.69</td>
<td>351.69</td>
</tr>
<tr>
<td>38503</td>
<td>NS LANDSCAPE</td>
<td>LS</td>
<td>1</td>
<td>$4,000.00</td>
<td>4,000.00</td>
</tr>
<tr>
<td>50340</td>
<td>RELOCATE EXISTING 1 POST GROUND MOUNTED SIGN</td>
<td>EA</td>
<td>7</td>
<td>$288.57</td>
<td>2,019.99</td>
</tr>
</tbody>
</table>

Total Number of Bid items = 27

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**Estimate Breakdown (no PE or CEI)**

- **Grading & Pavement**: 45%
- **Utilities**: 0%
- **GR&Traffic**: 48%
- **Landscaping**: 3%
- **Signs & Signals**: 2%
- **Bridge**: 0%
- **Incidentals**: 0%
- **E&S**: 2%

**Asphalt Type Distribution**

- **Grading & Pavement**
- **Utilities**
- **GR&Traffic**
- **Landscaping**
- **Signs & Signals**
- **Bridge**
- **Incidentals**
- **E&S**

Enter % based on Project specific conditions & requirements

C:\EPR, P, C\Jobs\Lovettesville\Lovettesville #21 East Broad Way Sidewalk