



## MEMORANDUM

To: Jason L. Cournoyer, Town Manager  
Town of Lovettsville  
6 East Pennsylvania Avenue  
Lovettsville, Virginia 20180

From: David Samba, PE, PTOE, PTP;  
Mark Phillips, PE;  
Rebecca Sulla  
  
Kimley-Horn and Associates, Inc.

Date: February 23, 2022

Subject: S Loudoun Street and Locust Street Pedestrian Improvements Project  
  
S. Loudoun Street One-Way Analysis

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### Introduction

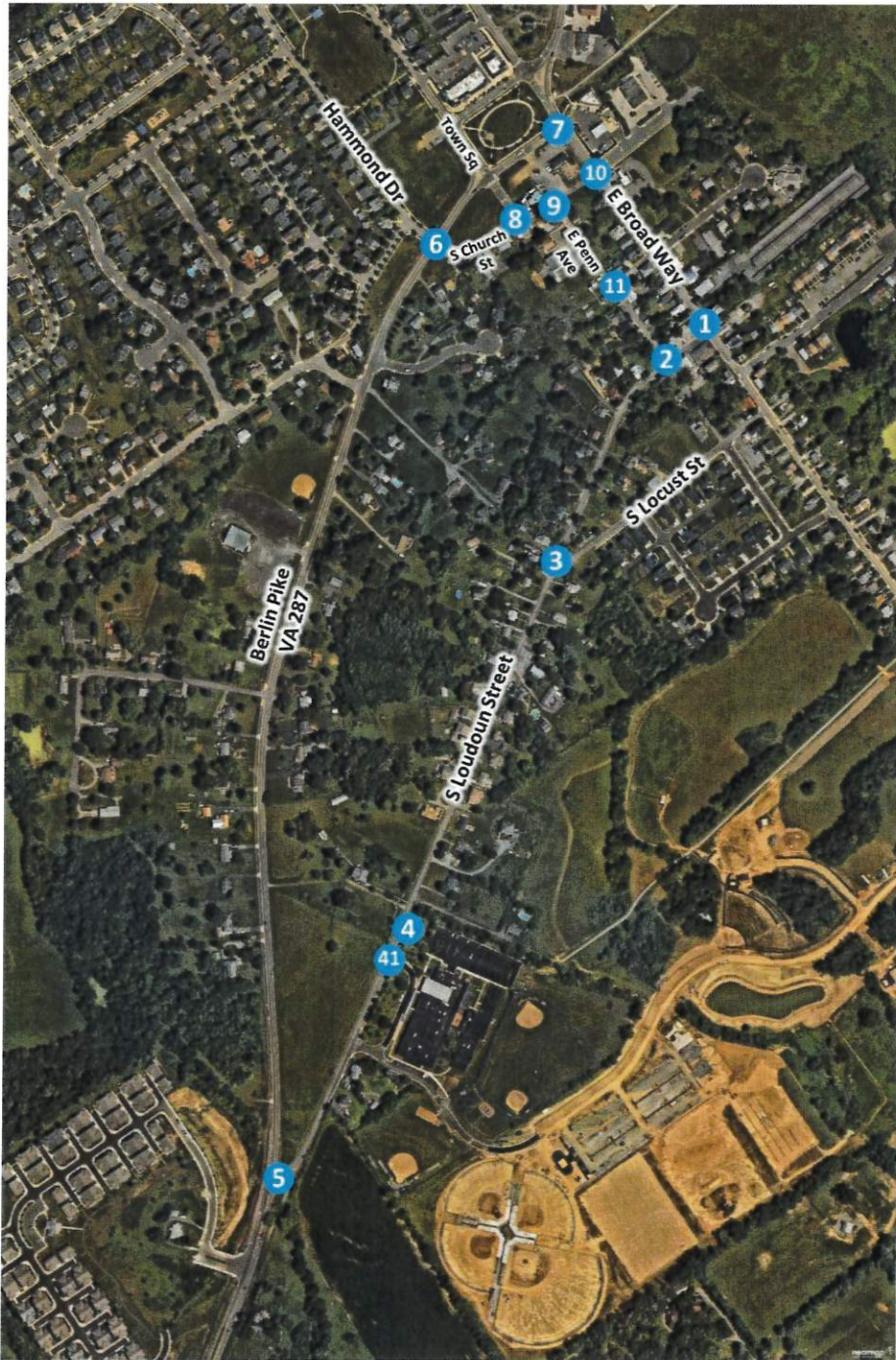
The Town of Lovettsville has programmed partial funding of improvements for Loudoun Street and Locust Street. These improvements will include minor roadway resurfacing, signing and pavement markings, curb and gutter, drainage improvements, and sidewalk(s). To make the most of the available right of way while accomplishing these improvements, the Town of Lovettsville is exploring the conversion of S. Loudoun Street from two-way to one-way operation.

Accordingly, this technical memorandum presents an analysis that considers the impacts of converting S. Loudoun Street to one-way operation. The memorandum describes the existing transportation network, traffic volumes, traffic speeds, and study area crash history. The memorandum further presents two potential rerouting options that could occur if S. Loudoun Street was converted to one-way operation and presents an analysis of intersection operations (delay and queuing). The analysis was conducted for both the existing year (2022) and a future year (2035). Two one-way lane configurations were considered for this analysis: (1) Loudoun Street one-way southbound from E. Broad Way to Locust Street and (2) Loudoun Street one-way southbound from E. Broad Way to the Lovettsville Elementary school parking lot driveway.

### STUDY AREA

The study area for this project, as shown in Figure 1, consists of the transportation networks bounded by Berlin Pike, S. Loudoun Street, S. Locust Street, and E. Broad Way. The study area is shown in Figure 1.

Figure 1: Study Area





The streets in the study area are described below:

**S. Loudoun Street** is a north-south two-lane undivided minor collector. In the study area it runs from Berlin Turnpike in the south to E. Broad Way in the north. Based on the 2019 Virginia Department of Transportation (VDOT) Annual Average Daily Traffic (AADT) report<sup>1</sup>, S. Loudoun Street carries 1,500 vehicles per day. The speed limit is 25 miles per hour (MPH).

**S. Locust Street** is a north-south two-lane undivided local street. In the study area it runs from S. Loudoun Street in the south to E. Broad Way in the north. Based on the VDOT 2019 AADT reports, S. Locust Street carries 930 vehicles per day. The speed limit is 25 MPH.

**E. Broad Way** is an east-west two-lane undivided major collector. In the study area it runs from S. Milltown Road in the east to Town Square in the west. Based on the VDOT 2019 AADT reports, E. Broad Way carries 3,900 to 4,500 vehicles per day. The speed limit is 25 MPH.

**E. Pennsylvania Avenue** is an east-west two-lane undivided local road. In the study area it runs from S. Locust Street in the east to S. Church Street in the west. Based on the VDOT 2019 AADT reports, E. Pennsylvania Avenue carries 190 vehicles per day. The speed limit is 25 MPH.

**Berlin Turnpike** is a north-south two-lane undivided minor arterial. In the study area it runs from S. Loudoun Street in the south to Town Square in the north. Based on the VDOT 2019 AADT reports, Berlin Turnpike carries 7,500 to 8,500 vehicles per day. The speed limit is 25 MPH south of S. Loudoun Street, 35 MPH between S. Loudoun Street and S. Church Street, and 25 MPH north of S. Church Street.

**Town Center Drive/Oktoberfest Way/Town Square** is an east-west two-lane undivided local road. In the study area it runs S. Church Street in the east to Eisentown Drive in the west. Town Square and Oktoberfest Way, which runs between Town Center Drive and S. Church Street, is a one-way configuration. Based on the VDOT 2019 AADT reports, this road carries 180 to 190 vehicles per day. The speed limit is 25 MPH.

**S. Church Street** is a north-south two-lane undivided local road. In the study area it runs from Berlin Turnpike in the south to E. Broad Way in the north. Based on the VDOT 2019 AADT reports, S. Church Street carries 950 vehicles per day. The speed limit is 25 MPH.

**S. Light Street** is a north-south two-lane undivided local road. In the study area it runs from E. Pennsylvania Avenue in the west to E. Broad Way in the north. Based on the VDOT 2019 AADT reports, S. Light Street carries 410 vehicles per day. The speed limit is 25 MPH.

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<sup>1</sup> [https://www.virginiadot.org/info/resources/Traffic\\_2019/AADT\\_255\\_Lovettsville\\_2019.pdf](https://www.virginiadot.org/info/resources/Traffic_2019/AADT_255_Lovettsville_2019.pdf)

**Hammond Drive** is an east-west two-lane undivided local road. In the study area it runs S. Church Street in the east to Eisentown Drive in the west. The AADT was not reported and the speed limit is 25 MPH.

The following intersections were identified to be included in the study through coordination with the Town of Lovettsville staff:

1. S. Loudoun Street and E. Broad Way
2. S. Loudoun Street and E. Pennsylvania Ave
3. S. Loudoun Street and S. Locust Street
4. S. Loudoun Street and Lovettsville Elementary School (north)
5. S. Loudoun Street and Berlin Pike
6. Berlin Pike and Hammond Dr/S Church Street
7. Town Square and E. Broad Way
8. Oktoberfest Way and S. Church Street
9. S. Church Street and E. Pennsylvania Ave
10. S. Church Street and E. Broad Way
11. E. Pennsylvania Ave and S. Light Street

## Methodology

Kimley-Horn, through subconsultant National Data and Surveying Services, Inc. (NDS) collected weekday AM and PM peak period traffic counts on Tuesday, November 23, 2021 at the 11 study area intersections. AM and PM peak hour traffic volumes were calculated at each study area intersection.

24-hour speed and volume data were also collected at 2 locations along S. Loudoun Street.

Historic crash data was obtained from VDOT's open data portal, Virginia Roads<sup>2</sup>, and used in a safety analysis of the study area. The 5-year crash history along S. Loudoun Street, E. Broad Way, S. Locust Street, and Berlin Turnpike was reviewed to identify any potential impacts to crash occurrence and severity resulting from one-way conversion of S. Loudoun Street.

Two traffic volume rerouting scenarios were developed based on the extent of the one-way conversion. A future traffic volume scenario was developed assuming an annual average growth rate of traffic between 2022 and 2035.

Intersection capacity and queuing analyses were conducted at each study area intersection under existing and future traffic volumes based on the general recommended guidance of VDOT's Traffic Operations and Safety Analysis Manual Version 2.0 (TOSAM 2.0).

The two one-way lane scenarios are shown in Figure 2.

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<sup>2</sup> <https://www.virginiaroads.org/>