Elkton Elementary School Walkabout Report

Introduction

On September 12, 2017, stakeholders at Elkton Elementary School in Elkton, Virginia met to examine the walking and bicycling networks around the school and identify potential improvements to be included in a future Transportation Alternatives Program grant application. Their participation in a VDOT Safe Routes to School (SRTS) Walkabout shows their support for improving the walking and bicycling environment and increasing the number of students safely walking and bicycling to school.

The stakeholders participating in the Walkabout included teachers, administrators, students, and parents from Elkton Elementary School; representatives from the Town of Elkton including the Mayor and representatives from the Department of Public Works; the Rockingham County Safe Routes to School Coordinator; and representatives from the Virginia Department of Transportation. Names of the Walkabout team members are listed in Appendix A. The two-hour meeting included an observation of school dismissal and a brief walking tour of the streets around the school.

Figure 1: Elkton Elementary School – Main Entrance

Existing Conditions

School Location and Demographics

Elkton Elementary School is located at 302 B Street, Elkton, Virginia and is part of the Rockingham County Public School system. Elkton Elementary serves 390 students in grades Pre-K through 5. Its attendance zone includes the Town of Elkton and a portion of Rockingham County (Figure 2: Elkton Elementary School Attendance Zone and Town of Elkton BoundariesFigure 2). Roughly half of the students live within the incorporated boundaries of the Town of Elkton (Figure 3**Error! Reference source not found.**), but less than 5% currently walk or bicycle regularly to school, suggesting the potential for increasing walking and bicycling to school.[1] The Town of Elkton is composed primarily of single family residential housing. The majority of trips are by school bus (46%) and family vehicle (47%) (**Error! R eference source not found.Error! Reference source not found.**). This report focuses on increasing opportunities for students living within the Town of Elkton to walk or bicycle to school.

Table 1: Elkton Elementary School – Mode Split[2]

Walk	Bike	School Bus	Family Vehicle	Carpool	Transit	Other
4%	2%	46%	47%	0%	0%	0%

[1] GIS and Rockingham County Public School Data.
[2] October 2017 Student Travel Tallies – Safe Routes Data Center

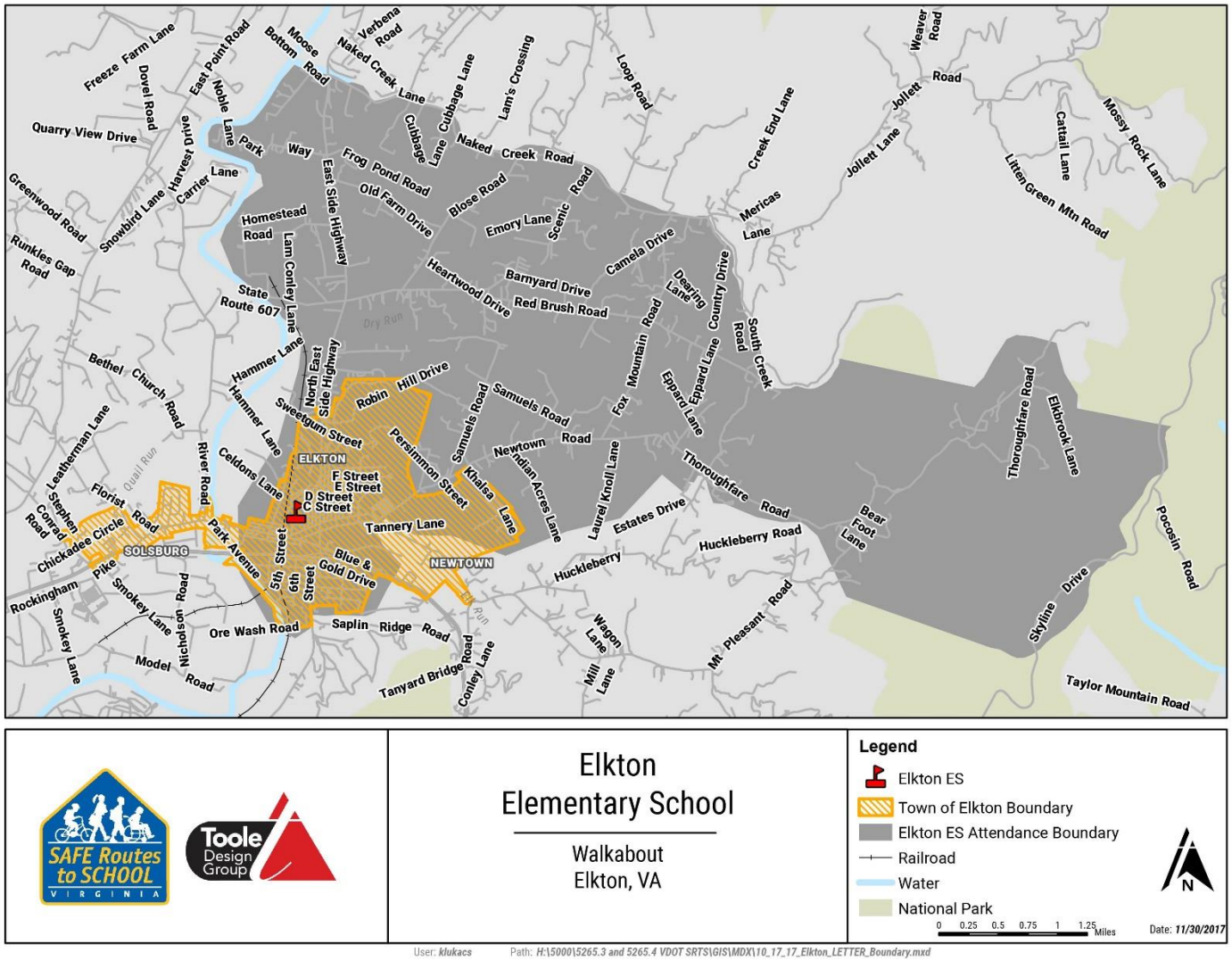

Figure 2: Elkton Elementary School Attendance Zone and Town of Elkton Boundaries

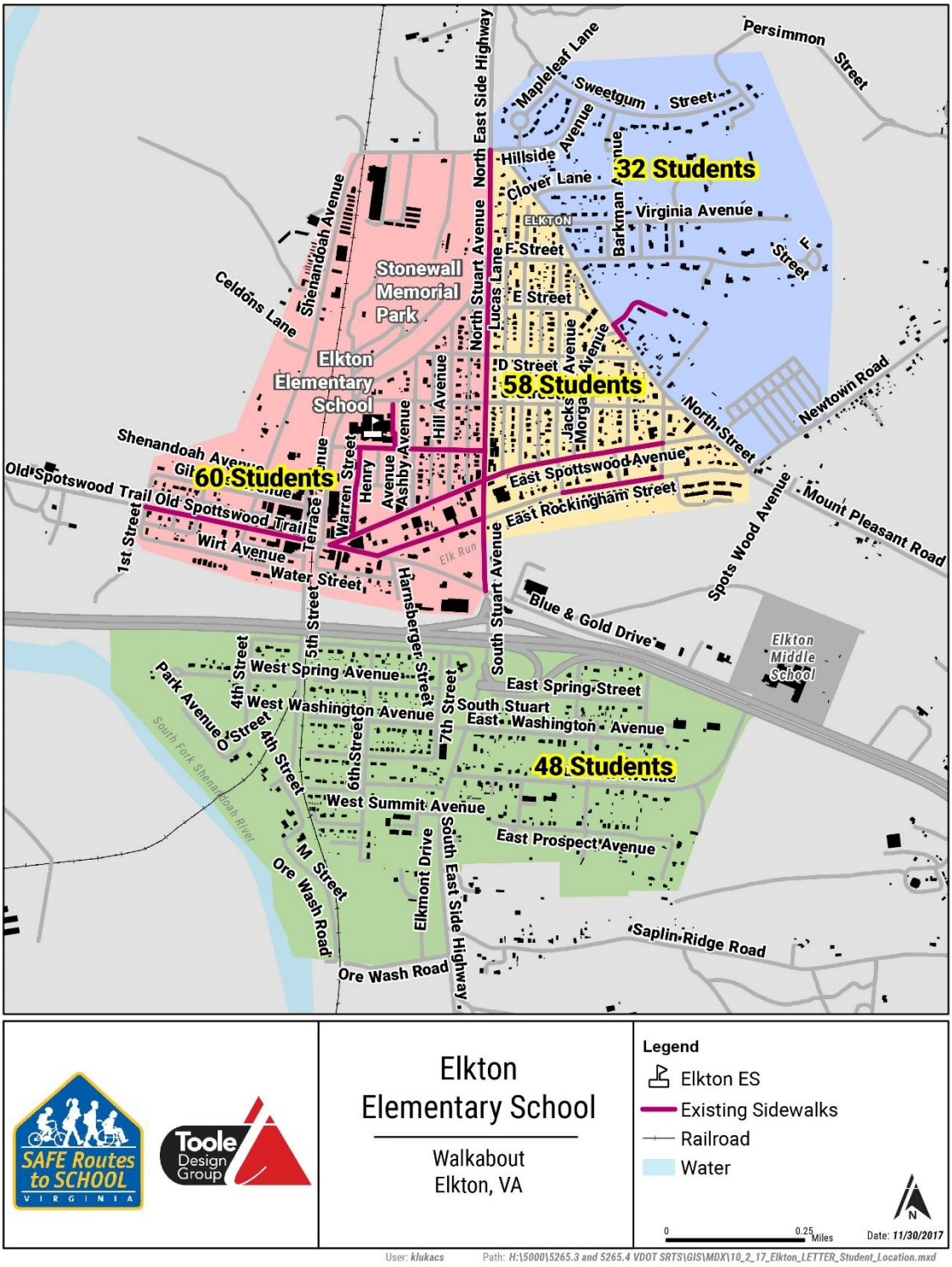

Figure 3: Elkton Elementary School – Student and Sidewalk Locations

Bicycle and Pedestrian Infrastructure

Figure 3 shows the scarce pedestrian and bicycle network surrounding Elkton Elementary School. Sidewalks only run north-south along Warren Street, the school parking lot, and Stuart Avenue (US 340). The section of sidewalk along Stuart Avenue (US 340) between C Street and Terrace Avenue was recently constructed and features ADA-complaint curb ramps. Sidewalks run east-west along Spotswood Avenue and Rockingham Street between Spotswood Trail (Bus US 33) and Clarke Avenue. A section of sidewalk is missing along Rockingham Street between Stuart Avenue (US 340) and Jackson Avenue. There is also a sidewalk on the north side of B Street which runs from the school entrance to Stuart Avenue (US 340) and is scheduled to be replaced in the near term (Figure 4). The lack of a connected sidewalk network north of Spotswood Avenue and east of Stuart Avenue (US 340) contributes to an environment that is not conducive to walking. Expanding the sidewalk network and providing a safe crossing at Stuart Avenue (US 340) will enable more students to walk to school. There are also no bicycle facilities within the roadway right-of-way.

Figure 4: Bicyclists Head East on B Street from Elkton Elementary School

Walkabout Summary

After a brief meeting to review existing dismissal procedures and community concerns, the Walkabout Team observed Elkton Elementary School's dismissal process from three locations. Based on dismissal procedures (described below), the walkabout team observed students from three locations:

1. Bus staging area (**Error! Reference s ource not found.**)
2. School's main entrance
3. B Street and Ashby Avenue

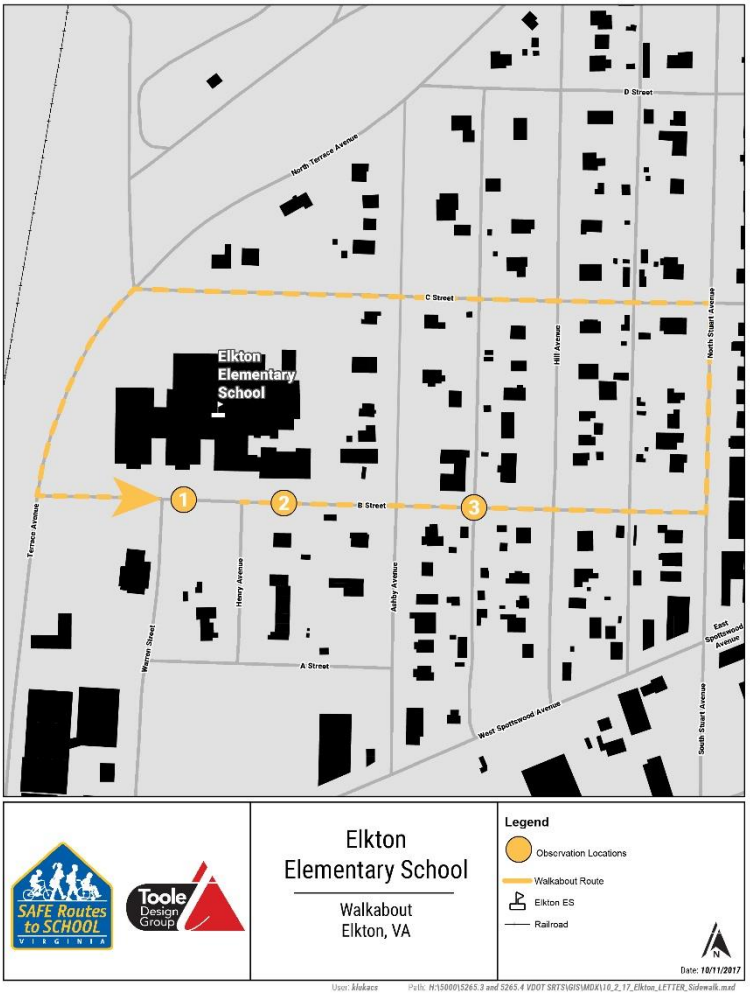

Figure 5: Dismissal Observation Location & Walkabout Route

Dismissal Overview

Elkton Elementary School dismisses all students on the south side of the building onto B Street. B Street is a one-way street which allows school officials to easily control traffic during release. The Principal, Assistant Principal, and a Physical Education Teacher are present daily for dismissal.

Buses stage diagonally on B Street while cones are used to block other vehicular traffic from proceeding along B Street. Parents wishing to pick students up queue along B Street just south of the Elkton Presbyterian Church or park in the Elkton United Methodist Church parking lot.[3] Cones are used to restrict access to B Street from Warren Street and on B Street until the buses have been departed (Figure 6).

Bus riders are released first on a staggered schedule according to grade, taking about 10 minutes (Table 2).

Table 2: Bus Dismissal Schedule

Grade	Release time
Pre-K	3:02 p.m.
K-2	3:05 p.m.
3-5	3:08 p.m.
Bus departs	3:10 p.m.

[3] Parking in the Elkton United Methodist Church parking lot is not endorsed by the school.

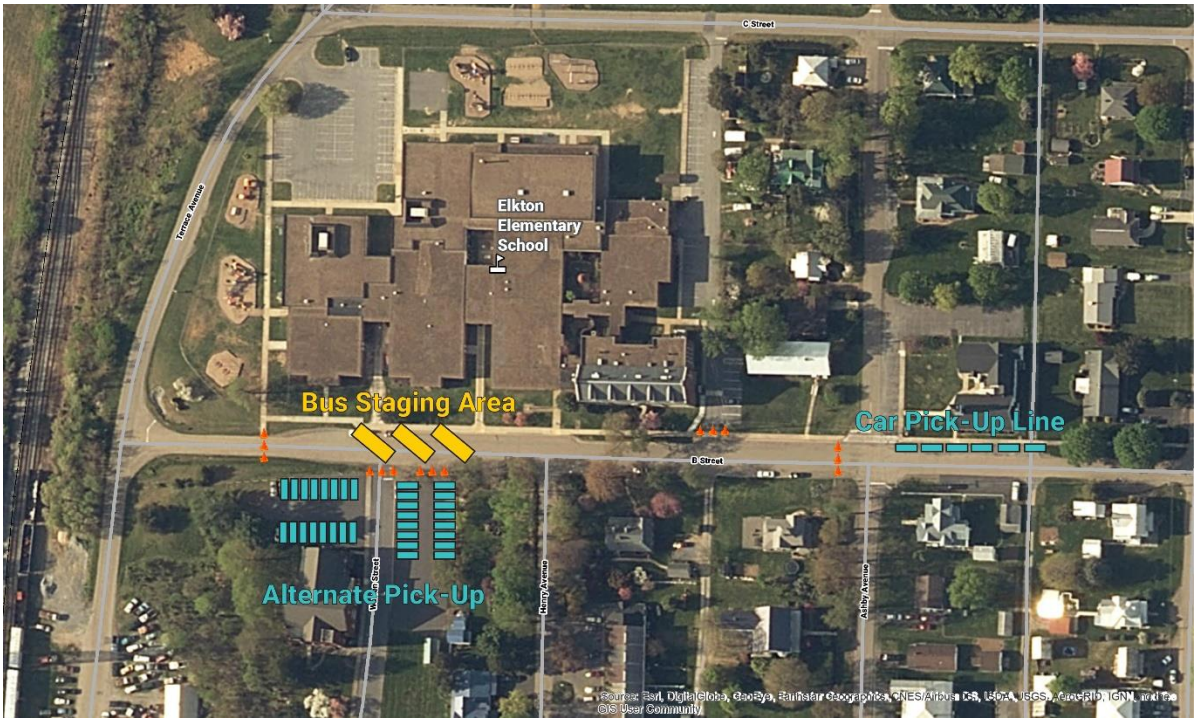

Figure 6: Dismissal Process – Step 1 - Bus Staging and Car Queues

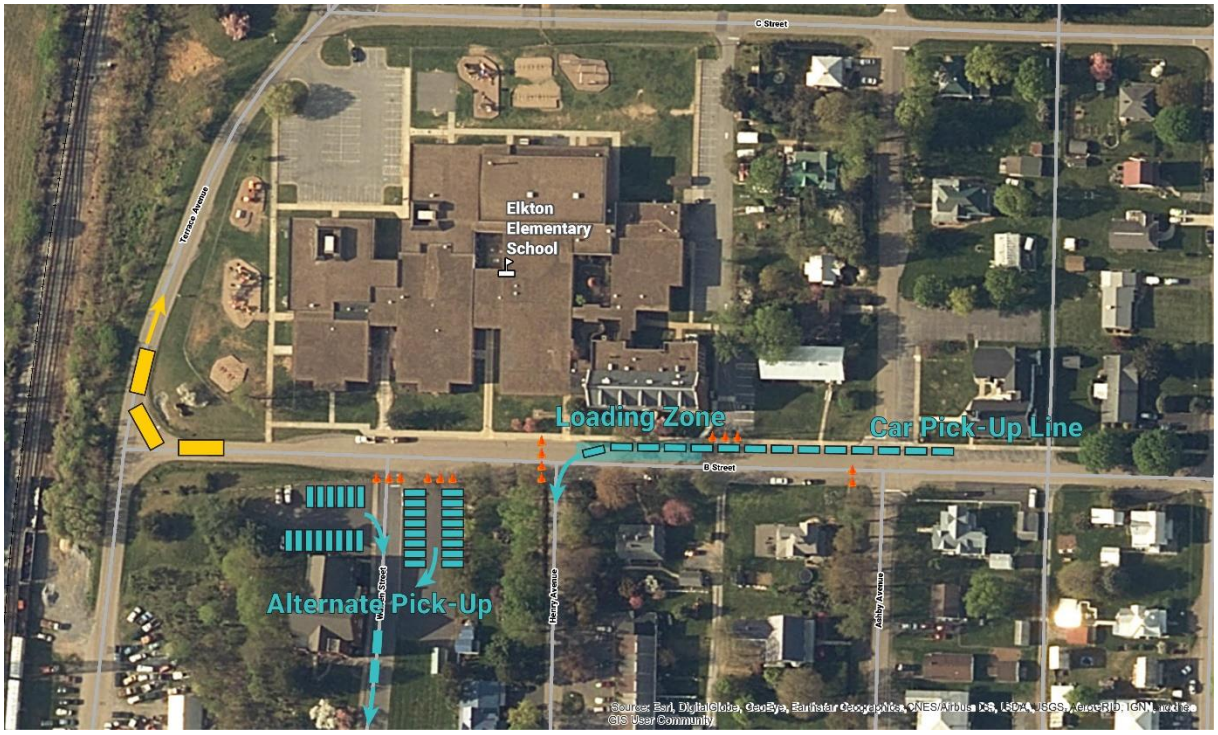

Figure 7: Dismissal Process – Step 2 – Car Pick-Up

Walkers and car riders are dismissed at 3:12 p.m. once the buses have departed. Walkers in grades PreK-1 must be signed out by parents. With the bus lane free, access to the main entrance along B Street is opened to cars. Staff who were assisting with bus loading now manage the car pick-up area, allowing two to four cars to enter at a time. Once students are loaded, cars must turn left onto Henry Avenue (Figure 7). In lieu of waiting in the pick-up queue, many parents park in the Elkton United Methodist Church parking lot or along Ashby Avenue. A school resource officer is often on hand to help assist with dismissal.

Team observations included:

- The bus loading process was well organized and students seemed well aware of where to go.
- Staff were visible and in control of process.
- Several students walk from school to the dance studio located immediately east of Elkton Elementary School.
- Cars backing up along B Street towards Stuart Ave (US 340), block north-south roads including Hill Avenue.
- Drivers park both at an angle and parallel to B Street which limits their line of sight
- Students and parents cross B Street to reach cars in Elkton United Methodist Church parking lot, where there is no crosswalk.

Following the dismissal observation, the three Walkabout groups reconvened and evaluated surrounding infrastructure (Figure 6**Error! Reference source not found.**), and discussed potential programs to support walking and bicycling. A p op-up sidewalk along Terrace Avenue was installed for Walkabout participants to discuss connectivity to Stonewall Memorial Park (Appendix F).

The group's observations and recommendations are presented below. See Appendix E for reference photographs.

Key Barriers and Issues

The key barriers and issues identified by the Walkabout Team and Virginia SRTS Program staff are listed below. Location specific issues and recommendations are listed on the following pages. For additional information on key roadways mentioned in barriers and issues discussion, including speed limits and annual average daily traffic (AADT), see Appendix B.

- **Sidewalks** – There is a limited sidewalk network which primarily connects to retail and industrial uses at the southern portion of Elkton along Spotswood Avenue and Rockingham Avenue. There is limited connectivity to Stonewall Memorial Park and areas east of Stuart Avenue (US 340).
- **Marked Pedestrian Crossings** – There are very few marked pedestrian crossings in the Town of Elkton. The crossings that do exist include either a pedestrian signal or crosswalk, but not both. There are no crosswalks connecting to Stonewall Memorial Park or across Stuart Avenue (US 340) north of Spotswood Avenue.
- **Curb Ramps** – Most curb ramps lack detectable warning strips, landing pads, and other standards specified by the Public Rights-of-Way Accessibility Guidelines.
- **Education and Encouragement** – Most parents and students do not seem to see walking or biking to school as a viable option, despite limited safety concerns, the close proximity of many students, and wide streets with low volumes.
- **Walker Dismissal** – Walkers are released last after all other students and may create a disincentive to walk.

Infrastructure (Engineering) Recommendations

A map of the infrastructure recommendations for Elkton Elementary School is provided in Figure 8 below. This map is followed by tables detailing the issues and recommendations at each location. A glossary of engineering terms is provided in Appendix C and key policies supporting the recommendations are highlighted in Appendix D.

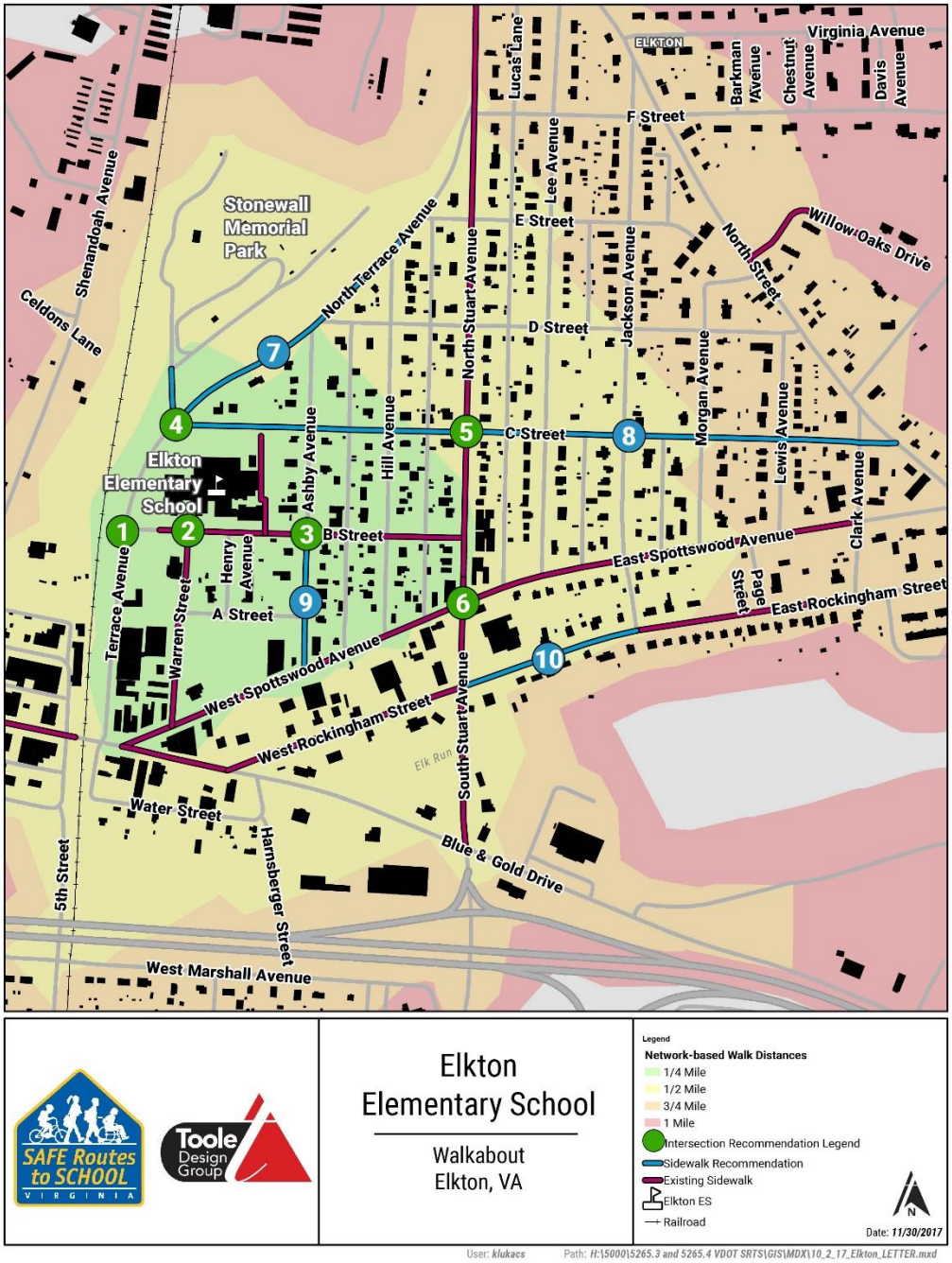

Figure 8: Infrastructure Recommendations Map

	B Street and Terrace Avenue		
Map ID	**Issue**	**Recommendation**	Timeframe[4]
1	**Inadequate signage** – B Street is a westbound one-way street from Ashby Avenue to Terrace Avenue except on Sunday, when the restriction is lifted in order to allow vehicular access to Elkton United Methodist Church. The wide turn radius and the offset "Do Not Enter – Except Sundays" signage has led to vehicles mistakenly driving east on B Street on several occasions according to school officials.	Relocate the "Do Not Enter – Except Sundays" sign to be closer to Terrace Avenue. Add "School Zone" pavement markings.	Short
1	**Intersection Geometry –** The large curb radius at this intersection makes the existing "Do Not Enter – Except Sundays" signage difficult to see for drivers on Terrace Avenue.	Reconstruct the Southeast intersection corner with a much smaller radius, such as 25'. The northeast corner radius could be reduced to 25' while still accommodating the school bus movement. *Note: An AutoTURN assessment indicates that a 15' radius on the Southeast corner would still accommodate a 40-foot school bus turning left from B Street to Terrace Avenue. See Figure 32 for AutoTURN movement information.*	Short-Medium

[4] Timeframe:
Short – within 2 years
Medium – between 2 and 5 years
Long – More than 5 years
Ongoing – as appropriate based on other work

	B Street and Warren Street		
Map ID	**Issue**	**Recommendation**	Timeframe
2	**Lack of marked crosswalks -** There are no marked crosswalks across B Street at this intersection. The high usage of the Elkton United Methodist Church parking lot for parent pick-ups and the existing sidewalk on the west side of Warren Street results in numerous crossings each school day during the morning and afternoon.	Add crosswalk at Warren Street to improve access to Elkton United Methodist Church parking lot and the existing sidewalk on the west side of Warren Street to enable safe crossing of B Street.	Short
2	**Lack of sidewalk connectivity -** The sidewalk running along the west side of Warren Street ends several feet before reaching B Street. Pedestrians walk in the street or in the grass as a result.	Continue sidewalk on west side of Warren Street north to B Street.	Short

	B Street and Ashby Avenue		
Map ID	**Issue**	**Recommendation**	Timeframe
3	**Lack of ADA curb ramps -** The existing curb ramps lack detectable warning strips and landing pads, per ADA PROWAG guidance.	Reconstruct curb ramps to meet ADA standards.	Short
3	**Long Crossing Distance -** The existing intersection corners have a wide curb radius which creates a long crossing distance for pedestrians.	Construct curb extensions on the North side of B Street at Ashby Avenue to reduce the existing crossing distance.	Short
3	**Lack of marked crosswalks -** There are currently no crosswalks for students to cross B Street to Ashby Avenue.	Provide a pedestrian crossing and "School Crossing" signs for this crossing of B Street which will align with a curb ramp at the Northwest corner of this intersection.	Short

	C Street and Terrace Avenue		
Map ID	**Issue**	**Recommendation**	**Timeframe**
4	**Asymmetrical intersection geometry** – The wide turn radius on all corners of the existing intersection creates a long crossing distance.	Reconstruct intersection corners to make the Stonewall Memorial Park driveway and C Street perpendicular to Terrace Avenue and reduce corner radii. (See Figure 33)	Short
4	**Lack of marked crosswalks -** There are currently no marked crosswalks for students to access Stonewall Memorial Park from the school.	Stripe crosswalks to connect the recommended sidewalk (See recommendation #8) with Stonewall Memorial Park.	Short
4	**Lack of Sidewalk -** There is currently no sidewalk along C Street, Terrace Avenue, or the Stonewall Memorial Park entrance limiting safe access to the park.	Continue sidewalk from this intersection into Stonewall Memorial Park (See recommendation #7).	Short-Medium

	C Street and Stuart Avenue (US 340)		
Map ID	**Issue**	**Recommendation**	**Timeframe**
5	**Lack of marked crosswalks** – The closest marked crosswalk to Elkton Elementary School providing access across Stuart Avenue (US 340) is at Spotswood Avenue, two blocks to the south.	**Lack of marked crosswalks** Add high visibility crosswalk at C Street and Stuart Avenue to connect with recommended sidewalk (See recommendation #8).	Short
5	**Long Crossing Distance -** Wide travel lanes of 17' on Stuart Avenue (US 340) create a long crossing distance for pedestrians.	Consider installing curb extensions on North Stewart Avenue to reduce crossing distances and to act as a traffic calming feature.	Short

	West Spotswood Avenue and Stuart Avenue (US 340)		
Map ID	**Issue**	**Recommendation**	**Timeframe**
6	**Lack of pedestrian signals** – While the intersection of Stuart Avenue (US 340) and Spotswood Avenue does have a marked crosswalk and a traffic signal, there are no pedestrian signals. It can be difficult for students to see the traffic signal, which is much higher than where pedestrian signals would be located.	Add pedestrian signals per the current MUTCD.	Medium
6	**Lack of ADA compliant curb ramps** – The existing curb ramps lack detectable warning strips and landing pads, per PROWAG guidance.	Reconstruct all curb ramps to meet ADA standards.	Short

North Terrace Avenue between C Street and Stonewall Memorial Park Stairs			
Map ID	**Issue**	**Recommendation**	**Timeframe**
7	**Lack of sidewalks –** There is currently no sidewalk connection between Elkton ES and Stonewall Memorial Park.	Install sidewalk along North side of Terrace Avenue to Stonewall Memorial Park via entrance and steps.	Medium

C Street between North Terrace Avenue and North Street			
Map ID	**Issue**	**Recommendation**	**Timeframe**
8	**Lack of sidewalks –** There is currently no convenient east-west connection for students living east of Stuart Ave (US 340).	Add sidewalk along South side of C Street from Terrace Avenue to North Street.	Short

Ashby Avenue between B Street and West Spotswood Avenue			
Map ID	**Issue**	**Recommendation**	**Timeframe**
9	**Lack of sidewalks –** There are sidewalks on Spotswood Avenue and B Street but no direct connection from Ashby Avenue.	Add sidewalk along West side of Ashby Avenue from B Street to W Spotswood Avenue	Short-Medium

East Rockingham Street between Stuart Avenue and Jackson Avenue			
Map ID	**Issue**	**Recommendation**	**Timeframe**
10	**Lack of sidewalks –** There is currently a gap in the sidewalk network along Rockingham Avenue.	Add sidewalk along South side of East Rockingham Street from South Stuart Avenue to Jackson Avenue.	Short-Medium

Programmatic Recommendations

SRTS programmatic recommendations are designed to work in conjunction with each other and the infrastructure recommendations and to instill safe walking, bicycling and driving practices. The recommendations are organized according to the four "E's" of Safe Routes to School: Education, Encouragement, Enforcement, and Evaluation.[5]

Education

Integrate pedestrian and bicycle safety education into the school curriculum. Pedestrian and bicycle safety education should occur in advance of major walk or bike to school events so students are adequately prepared and have an opportunity to practice the skills they have learned. Two pedestrian safety resources are listed below. Both are free:

- The *Child Pedestrian Safety Curriculum* was developed by the National Highway Traffic Safety Administration. The curriculum emphasizes skills practice and includes take home tip sheets for parents in English and Spanish. https://www.nhtsa.gov/pedestrian-safety/child-pedestrian-safety-curriculum
- The *Pedestrian Safer Journey* curriculum was developed by the Federal Highway Administration and features videos, quizzes and additional resources for educators teaching pedestrian safety. http://www.pedbikeinfo.org/pedsaferjourney/el_en.html

Incorporate information on walking and bicycling to school in communication with parents. Inform parents that Elkton Elementary School supports walking and bicycling to school and educate parents about the academic and health benefits of walking and biking. Learn about their experiences walking and bicycling to school with their children and includes these in communication, as appropriate.

Provide parents and guardians with safe driving information and materials that stress the importance of driving safely in school zones and being alert for pedestrians and bicyclists during arrival and dismissal. These materials can be provided during back-to-school nights, health and safety fairs, and Safe Routes to School events. Several organizations offer free materials on their websites:

- The National Center for Safe Routes to School has a helpful list of "Driving Tips Around Schools: Keeping Children Safe." http://apps.saferoutesinfo.org/lawenforcement/resources/driving_tips.cfm
- The Federal Highway Administration has an entire website devoted to reducing distracted driving, including information and free downloadable materials. http://www.distraction.gov/content/take-action/downloads.html
- The National Safety Council also has a page dedicated to distracted driving resources. Find it here http://www.nsc.org/learn/NSC-Initiatives/Pages/distracted-driving-resources.aspx
- The Virginia Safe Routes to School Program has a Zone In, Not Out school zone safety program which includes a safe driver pledge kit and yard signs. Resources are available on the Virginia SRTS website: http://www.virginiadot.org/programs/srsm_srts_zone_in_not_out.asp.

[5] The fifth E is Engineering, included in this report under Infrastructure Recommendations.

Continue conducting bicycle rodeos. Bicycle rodeos include activities designed to develop bicycle safety skills. Bicycle safety education is particularly important in advance of activities that encourage biking to school, such as National Bike to School Day held in early May each year. The Rockingham County Public Schools Safe Routes to School Coordinator has helped lead bicycle rodeos in front of the school by closing off B Street.

Encouragement

Participate in International Walk to School Day. Walk to School Day is an excellent opportunity to get students walking, teach the benefits of an active lifestyle, and highlight walking and biking issues. Consider establishing a meet up location at Stonewall Memorial Park for students who cannot walk from home. Alternatively, plan a Walk at School day using Stonewall Memorial Park. Resources to help plan Walk to School Day are available on the Virginia SRTS Program website. http://www.virginiadot.org/programs/srsm_srts_all_website_resources.asp.

Help organize and support walking school buses. A walking school bus is a group of children walking to school with one or more adults. It can be as informal as two families taking turns walking their children to school or as structured as a planned route with meeting points, a timetable and a schedule of trained volunteers. The proposed sidewalk on C Street and the proposed crossing of Stuart Avenue (US 340) could form one route of the walking school bus which would help the more than 60 students living east of Stuart Avenue and within .75 miles walk to school. See the Virginia SRTS Program's webinar on walking school buses and bicycle trains.
https://www.dropbox.com/s/7kz0q0yxc603g9k/VDOT%20SRTS%20-%20Walking%20School%20Bus%20and%20Bike%20Train%20Webinar.pdf?dl=0

Establish a frequent walker program. Frequent walker programs encourage students to walk by offering incentives to students who walk frequently or by establishing a competition between classes. A simple record keeping system must be created to track student walking. The Virginia SRTS Program provides a punch card template that can be used for this purpose. http://www.virginiadot.org/programs/srsm_marketing_toolkit.asp

Improve on-campus bike parking. The existing bike parking is currently located by the front entrance on a grassy area with no cover. The existing area should be reconstructed to include a paved area, path to and from the sidewalk, and a shelter to provide coverage for the bike. Alternatively, the bike parking could be relocated to an existing paved area which could accommodate a shelter.

Release walkers first. The existing dismissal process works very well for bus riders who begin releasing at 3:02 p.m., however walkers must wait until 3:12 p.m. to be released. This 10-minute delay may be a disincentive for students who might otherwise consider walking home from school. Releasing walkers and bicyclists first not only provides an incentive to leave right away, but can also help to minimize conflicts with buses and other vehicles.

Enforcement

Implement the Zone In, Not Out school zone safety program. Resources are available on the Virginia SRTS website: http://www.virginiadot.org/programs/srsm_srts_zone_in_not_out.asp.

Figure 9: Zone In, Not Out Signage Example

Pursue crossing guard support at key intersections: B Street between Warren Street and Ashby Avenue; and Stuart Avenue (US 340) and C Street following implementation of enhanced crossing.

Evaluation

Continue conducting Student Travel Tallies to get baseline data for student travel patterns. In Virginia, schools across the state record how students are getting to school during Student Travel Tally Week a week of the school's choosing each September and October. This data can be used to assess progress toward increasing the number of students who walk and bike to school. Student Travel Tallies have been conducted in October 2015, 2016, and 2017 for Elkton Elementary School. For more information about Student Tally Week go to the Virginia SRTS Program website. http://www.virginiadot.org/programs/srsm_student_travel_tally_week.asp

Administer Parent Surveys to collect information on parents' attitudes towards walking and bicycling and reasons why they may or may not allow their children to walk or bike to school. Administering parent surveys at least once a year can help determine whether Safe Routes to School efforts are changing parents' attitudes towards walking and bicycling to school. For tips on administering Parent Surveys, see the Virginia SRTS Program's **Learn it. Do it. Live it!** tip sheet. https://www.dropbox.com/s/nl274zoliqe9w5t/Parent%20Survey_LDLv2.pdf?dl=0

Appendices

A. Walkabout Participants

Name	Organization
Wayne Printz	Mayor, Town of Elkton
Troy Shifflett	Director, Elkton Department of Public Works
Gaither Hurt	Assistant Director, Elkton Department of Public Works
Iva Meadows	PTA President, Elkton Elementary School
Chris Bryant	Principal, Elkton Elementary School
Keturah Shifflett	Assistant Principal, Elkton Elementary School
Pat Failes	Physical Education Teacher, Elkton Elementary School
Robert Williams	Safe Routes to School Coordinator, Virginia Department of Transportation
Brad Reed	Assistant District Planner (Staunton), Virginia Department of Transportation
Kyle Lawrence	Safe Routes to School Coordinator, Rockingham County Public Schools
Kyle Lukacs	Planner, Toole Design Group
Siba El-Samra	Designer, Toole Design Group

B. Road Information Table

Street Name	Speed limit (mph)	Road Width	No. of travel lanes in each direction	AADT[6]	Road Classification[7]	Network Connectivity
Spotswood Trail (Elkton western city limits to Elkton eastern city limits)	55	24′	2	9,500	Principal Arterial	East-west connection between Harrisonburg and areas east of the Shenandoah mountains.
W. Spotswood Avenue (Bus US 33 to Stuart Ave)	25	48′	1	3,600	Major Collector	East-west connection between Terrace Avenue and Stuart Avenue (US 340)
E. Spotswood Avenue (Stuart Ave to North St)	25	22′	1	3,100	Major Collector	East-west connection between North Street and Stuart Avenue (US 340)
Ashby Avenue (C St to B St)	25	20′	1	130	Local Street	North-south connection between W Spotswood Avenue and Terrace Avenue which is adjacent to Elkton ES.
S. Stuart Avenue (Bus US 33 to US 33)	35	36′	2	5,600	Minor Arterial	North-south connection with a sidewalk on west side.
N. Stuart Avenue (Bus US 33 to Shenandoah Ave)	35	35′	1	7,700	Minor Arterial	North-south connection with a sidewalk on west side.

[6] Average Annual Daily Traffic (AADT) counts from VDOT, http://www.virginiadot.org/info/resources/Traffic_2016/AADT_216_Elkton_2016.pdf

[7] Road classification from VDOT, http://www.virginiadot.org/projects/fxn_class/maps.asp

C. Glossary of Infrastructure (Engineering) Terms

The following infrastructure treatments can be used to improve the bicycle and pedestrian environment around Elkton Elementary School. Location-specific recommendations are referenced under the section, Infrastructure (Engineering) Recommendations

Crosswalks

Marked crosswalks highlight the portion of the right-of-way where motorists can expect pedestrians to cross and designate a stopping or yielding location. They also indicate to pedestrians the optimal or preferred locations to cross the street. At midblock or other uncontrolled locations, crosswalks should use a high-visibility pavement marking pattern and be accompanied with pedestrian crossing signs that meet current Manual on Uniform Traffic Control Devices (MUTCD) standards. In addition, crosswalks can be raised on a speed table to be level with the sidewalk. This design helps slow drivers, increase pedestrian visibility and make it easier for pedestrians with mobility limitations to cross the street.

Curb Ramps

Curb ramps provide access between the sidewalk and roadway for people using wheelchairs, strollers, and bicycles. Curb ramps must be installed at all intersections and midblock locations where pedestrian crossings exist, as mandated by the 1990 Americans with Disabilities Act. In most cases, a separate curb ramp for each crosswalk at an intersection should be provided rather than a single ramp at the corner for both crosswalks. Current guidelines for curb ramp designs are included in the Public Right-of-Way Accessibility Guidelines, Chapter R3: Technical Requirements. (http://www.access-boaRoadgov/guidelines-and-standards/streets-sidewalks/public-rights-of-way/proposed-rights-of-way-guidelines/chapter-r3-technical-requirements)

Crossing Islands

Crossing islands are raised median islands placed in the center of the street at intersection approaches or midblock. They allow pedestrians to cross one direction of traffic at a time by enabling them to stop partway across the street and wait for an adequate gap in traffic before crossing the second half of the street. They can reduce crashes between vehicles and pedestrians at uncontrolled crossing locations on higher volume multi-lane roadways where gaps are difficult to find, particularly for slower pedestrians, e.g. disabled, older pedestrians, and children. The application would need to be studied before implementing crossing islands on state roads.

Curb Extensions

Curb extensions extend the curb line into the roadway. They can improve the ability of pedestrians and motorists to see each other, reduce crossing distances (and thus exposure to traffic), provide additional pedestrian queuing space, and slow motor vehicle turning speeds.

High-Visibility Crosswalks

While standard crosswalks use transverse lines (two parallel lines), high-visibility crosswalks also use bar-pairs, ladders, longitudinal lines, or zebra patterns to improve detection of the crosswalk.

In-Street Pedestrian Crossing Signs

In-street pedestrian crossing signs placed in the roadway at pedestrian crossing locations warn drivers and encourage yielding.

Manual on Uniform Traffic Control Devices (MUTCD)

This document produced by the Federal Highway Administration specifies the standards that traffic signals, signs, and roadway markings must adhere to including shapes, colors, fonts, and placement. The *2011 Virginia Supplement to the MUTCD* contains standards and guidance specific to Virginia.

Pedestrian Lighting

Lighting should be provided near transit stops, commercial areas, or other locations where night-time or pre-dawn pedestrian activity is likely. Pedestrian-scale lighting such as street lamps helps illuminate the sidewalk and improves pedestrian safety and security.

Public Right-of-Way Accessibility Guidelines (PROWAG)

The United States Access Board produces guidelines to ensure all pedestrians have equal access to sidewalks and streets, including crosswalks, curb ramps, street furnishings, pedestrian signals, parking, and other components of public rights-of-way.

School Speed Limit Signs

School speed limit signs alert drivers that they are entering a school zone and need to prepare to yield to students that may be crossing the street. School speed limits vary based on local laws and typically range from 15 to 25 mph. School speed limit signs with lights that flash (flashing beacons) during arrival and dismissal times can be more effective on busy streets, however, all school speed limit zones require occasional police enforcement to ensure driver compliance. Refer to the Manual on Uniform Traffic Control Devices (MUTCD) for more guidance.

Sidewalks

Sidewalks provide pedestrians and younger bicyclists a safe place to travel that is separate from motor vehicles. It is important to provide a continuous sidewalk route, connected with high-visibility crosswalks so that pedestrians are not forced to share travel space with motor vehicles. All sidewalks should meet ADA guidelines for width and cross-slope, and include curb ramps that meet ADA guidelines at street crossings.

Traffic Calming

Traffic calming measures are designed to improve safety for motorists, pedestrians and bicyclists, usually by altering the physical design of the roadway to reduce motor vehicle speeds. Common traffic common measures include speed humps, curb extensions, chicanes, and neighborhood roundabouts.

D. Key Policies Supporting Recommendations

VDOT Crosswalk Policy VDOT IIM-TE-384.08

VDOT's crosswalk policy states that potential advantages of marked crosswalks include:

- Providing a visible reminder to motorists that pedestrians may be present.
- Directing pedestrians to the location of the recommended crossing path.
- Reducing the likelihood that drivers will encroach the intersection or block pedestrian traffic when stopping for a STOP or YIELD sign
- Designating the location of approved school crossings or crossings along recommend school routes

For marked crosswalks at stop-controlled intersections, relevant criteria are provided in Section 5.2 of the policy, including:

- The crossing is part of a walking route approximately ¼ mile or less between a residential development of moderate or heavy density and a school or recreational area,

For marked crosswalks at uncontrolled intersections, relevant criteria are provided in Section 5.3 of the policy, including:

- The crossing is on a direct route between significant pedestrian generator(s) and attractor(s), where engineering judgment determines that the crosswalk would likely see a minimum of 20 pedestrians/bicyclists using the crosswalk in an hour. That threshold may be reduced to 10 pedestrians per hour if the crossing is expected to be used by a high number of vulnerable pedestrians (pedestrians who are disabled, age 65 and over, 389 or age 15 and under), or if the reduced volume is met for three consecutive hours.
- The location is 300 feet or more from another marked crosswalk across the same road.
- Drivers will have an unrestricted view of the entire length of the crosswalk, including the waiting areas at either end of the crosswalk.
    - 25mph = 155 feet on level grade
    - 35 mph = 250 feet on level grade
- The required engineering study determines that the introduction of a marked crosswalk will not produce an unacceptable safety hazard.

[8] http://www.virginiadot.org/business/resources/IIM/TE-384_Ped_Xing_Accommodations_Unsignalized_Locs.pdf

E. Walkabout Photographs

The following photos were taken by Walkabout participants to document the Walkabout as well as supplement the report recommendations.

Figure 10: B Street and School Parking Lot Entrance

Figure 11: Main Entrance Bike Parking

Figure 12: B Street (Looking East from Ashby Avenue towards Elkton Presbyterian Church)

Figure 13: B Street (Looking West from Ashby Avenue towards Elkton Elementary School)

Figure 14: Buses stage on B Street

Figure 15: Assistant Principal (Keturah Shifflett) and Physical Education Teacher (Pat Failes) oversee bus dismissal process

Figure 16: Parent Crossing from Elkton United Methodist Church Parking Lot

Figure 17: Physical Education Teacher (Pat Failes) Places Cones to Block Vehicular Traffic

Figure 18: Pick-Up Line for Private Vehicles

Figure 19: Walker Dismissal

Figure 20: Walker Dismissal at Front Entrance

Figure 21: Walkers Head East along B Street Sidewalk

Figure 22: Walkabout Participants Head East along B Street

Figure 23: Walkabout Participants Head East along B Street

Figure 24: View of Stuart Avenue (US 340) from B Street

Figure 25: New Sidewalks and Curb Ramps along Stuart Avenue (US 340) at C Street

Figure 26: View of C Street from Stuart Avenue (US 340)

Figure 27: Pop-Up Sidewalk Demonstration at Stonewall Memorial Park

Figure 28: Walkabout Participants Discuss Pop-Up Sidewalk at Stonewall Memorial Park

Figure 29: "Do Not Enter" Signage at B Street and Terrace Avenue (Looking North from Terrace Avenue)

Figure 30: "Do Not Enter" Signage at B Street and Terrace Avenue (Looking South from Terrace Avenue)

F. Pop-Up Sidewalk

As part of the Elkton Elementary School Walkabout, a temporary sidewalk was installed along the north side of Terrace Avenue along Stonewall Memorial Park to show its potential. This pop-up was available for Walkabout participants to use and discuss its benefits. Many students currently use this park after school, as well as programming by the school's Physical Education Department. Walkabout participants agreed that a sidewalk in this location would be beneficial and expressed a desire for a sidewalk along the park entrance itself (See dashed line in Figure 32: Auto-turn Movements for B Street and Terrace AvenueFigure 31). The discussion among participants helped to inform the recommendations made in this report.

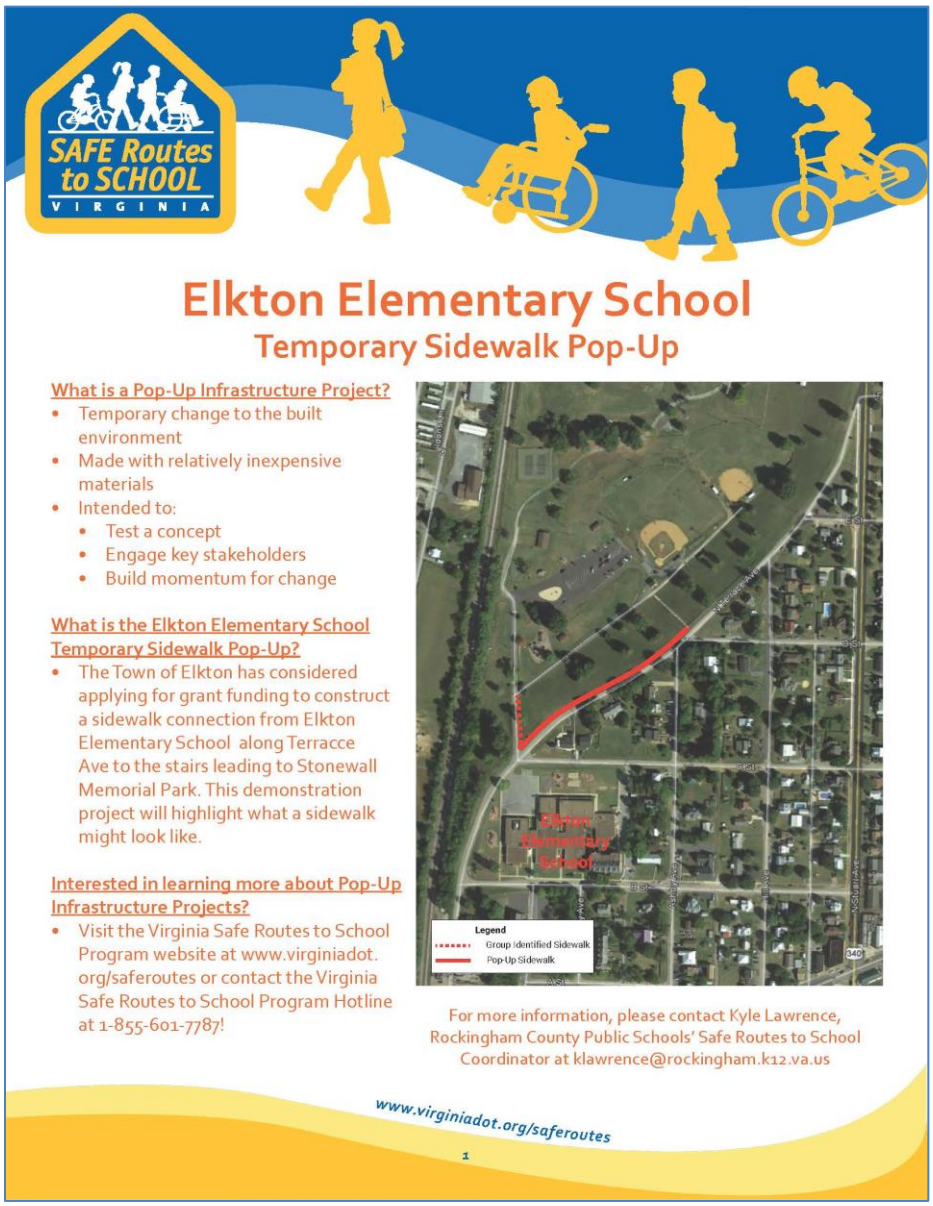

Figure 31: Elkton Elementary School Pop-Up Flyer

G. Engineering Visuals

Figure 32: Auto-turn Movements for B Street and Terrace Avenue

Figure 33: Rendering of Sidewalks and Curb Extensions at C Street and Terrace Avenue