BACKGROUND

**Project Objective**
The goal of this project is to develop a safe, accessible, and continuous pedestrian access network along Tripleseven Road for Countryside Elementary School’s pedestrians as part of the Safe Routes to School (SRTS) Program.

**Project Overview**
The project is located in Sterling, Virginia within the Countryside community. The project consists of a sidewalk network that will tie into an existing trail system that resides behind Countryside subdivision. The proposed sidewalk system will follow adjacent to the southbound traffic of Tripleseven Road. Pedestrian traffic will then cross Tripleseven Road using a high visibility crosswalk. Once across, a sidewalk with ramps will advance walkers to another crosswalk leading across Heather Glen Road. A series of sidewalks will then travel along the Northbound side along Tripleseven Road, crossing Glade Street and then terminating at the southeastern quadrant of the intersection of Tripleseven Road and Glade Street. Approximately 520 LF, 6’ wide concrete sidewalk with curb and gutter is proposed with a series of ADA compliant ramps where necessary.

**Existing Roadway Characteristics:**
Tripleseven Road (Route 777)
- Posted speed: 35 mph (Reduces to 25 mph @ Station 16+40.00)
- Right of Way Width: Varies
- Two lanes, varying in width between 11.5’ and 12.1’
- AADT = 3900 (2019)
- Sidewalks – non-existent
- Percentage of Truck Traffic: 1.67%

Refer to Figures 1 through 4 on pages 3 and 4 for existing condition images and conditions.

**Establish Design Criteria versus proposed and existing criteria:**

**Existing Criteria:**
Existing Criteria – Buffer Strip Width
Per VDOT Road Design Manual – Appendix A(1) – Page A(1)-70. Buffer Strips shall be 4 feet for posted speeds greater than 25 mph. Buffer strips 3-foot-wide may be utilized for posted speeds 25 mph and less.

**Proposed Criteria:**
Proposed Criteria – Buffer Strip Width
The proposed sidewalk is adjacent to the curb with no buffer strip due to Right of Way constraints and impacts to existing fences, trees, and utilities (refer to Figure 1 on sheet 3). The improvements create a safer pedestrian environment while improving ADA accessibility as there was no existing pedestrian infrastructure. Currently the pedestrian traffic uses the Tripleseven Road existing shoulder/ditch lines to navigate along Tripleseven Road to access the existing trail.
Figures 1 & 2: Pictures (above) from the east side of Tripleseven Road (Rte. 777) where the utilities reside including underground telecom (handhole box), overhead utility poles and a drainage ditch. All the utilities run parallel to Tripleseven Road. Looking west (left) and east (right). Poles and utility hand holes would require relocation. (Approximate stations 13+65 for Fig.1 and 14+27 for Fig.2)

Figure 3: Picture (above) shows an existing 18” double barrel culvert in close proximity (within approximately 4.8’) to the east side of Tripleseven Road (Rte. 777); looking northwest toward Tripleseven Road (NB). (Approximate station 13+96 for Fig.3)
Figure 4: Pictures (above) where the double barrel culvert outfalls into a ditch which is surrounded by a large berm and retaining wall. (Approximate station 14+00 for Fig.4)
Reasons that appropriate design criteria cannot be met:

Design criteria could not be met due to an array of issues. The primary issues are the existing dry utilities and stormwater drainage running parallel with Tripleseven Road. Due to their close proximity, there isn’t enough room to provide a buffer, the proper width of sidewalk, and clearance within the existing ROW without major utility relocations, drainage ditches/easements & additional ROW. See Figures 1, 2, 3 and 4 located on sheets 3 and 4 of this document.

In order to meet appropriate design criteria, the proposed design would violate the constraints mentioned above. At stations 12+00 to 14+60, as many as 5 utility poles, 1 underground utility box, 1 pedestal, additional storm pipe and extensions, and 1 sign will need to be relocated as the proposed sidewalk would run right through the current locations. The existing drainage system will need to be extended, as well as a retaining wall to be added at the current road outfall. From Stations 12+00 to 14+60 and 15+50 to 16+75, the standard buffer cannot be met without additional ROW and easements. The existing site is relatively flat and will need regrading as well to allow for better runoff practices and drainage. See Figures 5 & 6 on sheet 8 for typical sections and see Exhibit 1 on sheet 9 for the project impacts.

Accident History:
There has been one (1) accident reported within the project limits in the last three years (2018-2021). Refer to the crash map below (Figure 4a). The crash did not have any fatalities or reported injuries. The proposed improvements will not have any adverse effects on vehicular accidents within the area. Crash records and data were obtained from VDOT online database.

- Fixed Object – Off Road
  *Incident 181915014 – Driver failed to maintain control of passenger vehicle. Crash severity was PDO (Property Damage Only).*

![Figure 4a: Crash Map](not to scale)
**Justification for the proposed criteria:**
The design has complied with the American with Disability Act for slopes, widths, clearances, and ramp locations. The proposed sidewalk is adjacent to the curb with no buffer strip due to Right of Way constraints and impacts to existing drainage, dry utilities, landscaping, and grading. In addition, a larger 6’ wide sidewalk has been proposed which exceeds the minimum 5’ sidewalk. This project does not include funding for utility relocations and any additional ROW, which would be needed.

A small portion of the project will be converted into a lower speed roadway as the posted speed will be 25 mph, see Exhibit 1, the intersection with Glade Street at stations 11+25 & 12+90, see sheet 9 for the speed reduction signs. The improvements create a safer pedestrian environment than what exists today. The improvements include adding ADA compliant sidewalks, curb and gutter, and ramps.

At stations 15+12 to 17+00, though the design provides temporary construction easement (TCE), to properly tie-in the grading for the adjusted offset of the ditch due to the buffer, regardless if the design has a buffer or not, if a buffer is required at this section even more temporary Construction Easement will be needed. The additional TCE can be seen on Exhibit 1.

**Any Mitigation that will be provided to further support or justify the request:**
The design does comply with the American with Disability Act for slopes, widths, clearances, and ramp locations. There will not be any existing or proposed signs in the substandard buffer area. The speed limit decreases from a 35-mph speed limit to a 25-mph speed limit at station 16+40 as well. Another method of mitigation will be 6’ sidewalks that are being proposed.
Cost to meet standard verses project costs:
As shown in the table below, the additional cost to meet VDOT criteria would total to $195,156.00. The total cost of the project as designed is estimated to be $641,612.49, thus the combined price after mitigating restraints would be $836,768.49.

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<th>Engineers Estimate to Mitigate Constraints and meet VDOT criteria</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Cost to Mitigate</th>
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Proposed Typical Sections

Figure 5:

TRIPLESEVEN ROAD – PEDESTRIAN IMPROVEMENTS
TYPICAL SECTION
STA. 12+18.64 TO 14+35.02

Figure 6:

TRIPLESEVEN ROAD – PEDESTRIAN IMPROVEMENTS
TYPICAL SECTION
STA. 15+53.06 TO 16+75.21
BERKELEY COURT
SECTION T-1-B
COUNTRYSIDE
TRIPLE SEVEN ROAD

5' SIDEWALK
5' SIDEWALK
TIE-IN TO EXISTING SIDEWALK.

CONNECT TO EXISTING TRAIL

RELOCATE SIGN
RELOCATE UTILITY POLES BETWEEN STA 12+52 AND STA 14+42 (TYP.)
SEE FIGURE 1 AND 2, SHEET 3

EXTEND STORM STA 13+96 SEE FIGURE 3 SHEET 3
EX. RIGHT OF WAY
PROP. RETAINING WALL SEE FIGURE 4 SHEET 4

EX. OVERHEAD POWER LINE (EASEMENT UNKNOWN)
EX. HONK R/W
EX. TOTAL MONUMENT MARK
PROP. MONUMENT MARK
EX. TIE-IN

EXTEND STORM AND ADD ADDITIONAL MANHOLE

PROP. DRAINAGE EASEMENT
PROP. TEMPORARY CONSTRUCTION EASEMENT

PROPOSED RIGHT OF WAY
PROPOSED MANHOLE
ABN. PROPOSED MANHOLE

EX. RIGHT OF WAY
PROP. MANHOLE
PROP. TEMPORARY CONSTRUCTION EASEMENT

EX. OBJECT EASEMENT (A.B. "PRIVATE"

EX. RIGHT OF WAY
PROP. TEMPORARY CONSTRUCTION EASEMENT

PROP. TEMPORARY CONSTRUCTION EASEMENT

PROP. TEMPORARY CONSTRUCTION EASEMENT

PROP. TEMPORARY CONSTRUCTION EASEMENT

PROP. TEMPORARY CONSTRUCTION EASEMENT

RELOCATE SIDEWALK
RELOCATE SIDEWALK

PUBLIC ACCESS EASEMENT

LEGEND

PROPOSED SIDEWALK, CURB & GUTTER
PROPOSED RIGHT OF WAY
LIMITS OF CLEARING
ADDITIONAL TEMPORARY CONSTRUCTION EASEMENT NEEDED
UTILITY POLE RELOCATION

GRAPHIC SCALE
0 20 40 60
1 INCH = 20 FEET

VA. STATE GRID NAD 83 NORTH

0

1 INCH = 900 FEET