

Roadway Safety Assessment:
Old Gun Road
Chesterfield County, Virginia

Prepared for:
**VDOT Richmond District
and
Chesterfield County**



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December 19, 2023

1.0 INFORMATION USED IN THE RSA

Information used for this Roadway Safety Assessment (RSA) included the following:

- Aerial photography (provided by Nearmap)
- 48-hour speed data (collected by VDOT at two locations on Old Gun Road)
- Existing signs inventory and documentation
- Intersection sight distance evaluations
- Road curvature evaluation
- Five-year crash data summarized from January 1, 2018 through December 31, 2022 and shown on maps
- Field review notes and photos taken along the study segment during morning of Wednesday, June 21, 2023 and the afternoon of Sunday, June 25, 2023
- Field review with VDOT and Chesterfield County in the afternoon of Friday, July 21, 2023
- As a follow-up to the field review with the RSA team Kimley-Horn took additional photos and measured sight distance on Monday, August 7, 2023

2.0 RSA PURPOSE

On April 11, 2023, a crash occurred on Old Gun Road (Route 673), located in Chesterfield County, Virginia that resulted in the deaths of both vehicle occupants. A crash description is included in the Crash Analysis section of this report. This fatal crash began the VDOT Road Safety Assessment (RSA) process, subsequently resulting in multiple meetings with the RSA team members and a detailed analysis by the RSA team to review existing roadway conditions and crash trends on Old Gun Road. The limits of the RSA were from Robious Road (Route 711) to the City of Richmond corporate limits.

An RSA is defined as a formal safety performance examination of an existing or future road by an independent, multidisciplinary team to identify opportunities for improvement in safety for all road users. This RSA report documents RSA team meeting discussions, including study area field review observations, roadway characteristics, and crash trends. The purpose of this study is to identify and determine what, if any, short-, intermediate-, and long-term safety measures could be implemented in the corridor to reduce the number and severity of crashes on Old Gun Road.

3.0 EXISTING CONDITIONS AND FIELD OBSERVATIONS

Field observations on Old Gun Road were conducted by the team on the following dates:

- Wednesday, June 21, 2023
- Sunday, June 25, 2023
- Friday, July 21, 2023 (the entire RSA team visited)
- Monday, August 7, 2023

The field team documented potential roadway and roadside features that could potentially contribute to crashes in the corridor, including roadway geometry, traffic control devices, roadside features, and other roadway characteristics. The following report subsections include a study area description, traffic control devices, geometric conditions, and traffic conditions within the study segment.

3.1 Site Description

The segment of Old Gun Road analyzed in this RSA includes an approximate 3.3-mile roadway segment in Chesterfield County that spans from Robious Road to just south of Arsenal Drive at the City of Richmond corporate limits. The posted speed limit in the study segment is 35 mph. The Old Gun Road segment (approximately 1.1 miles) between the City of Richmond corporate limits to West Huguenot Road is in the City of Richmond with a posted speed limit of 25 mph. The City-maintained portion of the roadway is not included in this RSA. The study area is shown in **Figure 1**.

Old Gun Road is a two-lane, two-way undivided road with lane widths varying from 9 to 11 feet and is classified as a major collector. Centerline pavement markings delineate the two directions of travel which vary in quality including some sections that are in poor conditions. There are no passing zones nor edge lines pavement markings. The shoulder width ranges from zero to four feet, which creates an unforgiving condition for drivers who depart the road. Additionally, the road is also characterized by steep slopes, close fixed objects (e.g., mailboxes, culverts, ditches), minimal guardrail, little to no shoulder recovery areas, and sharp curves. The clear zone required is 10-14 feet, however, there are existing fixed objects located within the clear zone at many locations. Guardrail is present along the east side of the road between Reeds Bluff Lane and Oak Glade Drive. There are approximately 27 driveways located along the roadway per mile. There are multiple horizontal curves that also include vertical curvature, which create the need for curve advisory signs.

The Robious Road intersection is the only signalized intersection in the study area. Land uses in the corridor is primarily single-family residential with a few commercial properties close to Robious Road. The Virginia Power Boat Association is located to the north along the study area.

A portion of Old Gun Road between Robious Road and Cherokee Road (Route 704) is designated on the U.S. Bicycle Route 1 network. However, there are no marked bike lanes on the road. The U.S. Bicycle Route 1 network path within the study area is shown in **Figure 2**.



Figure 1: Study Area Location Map

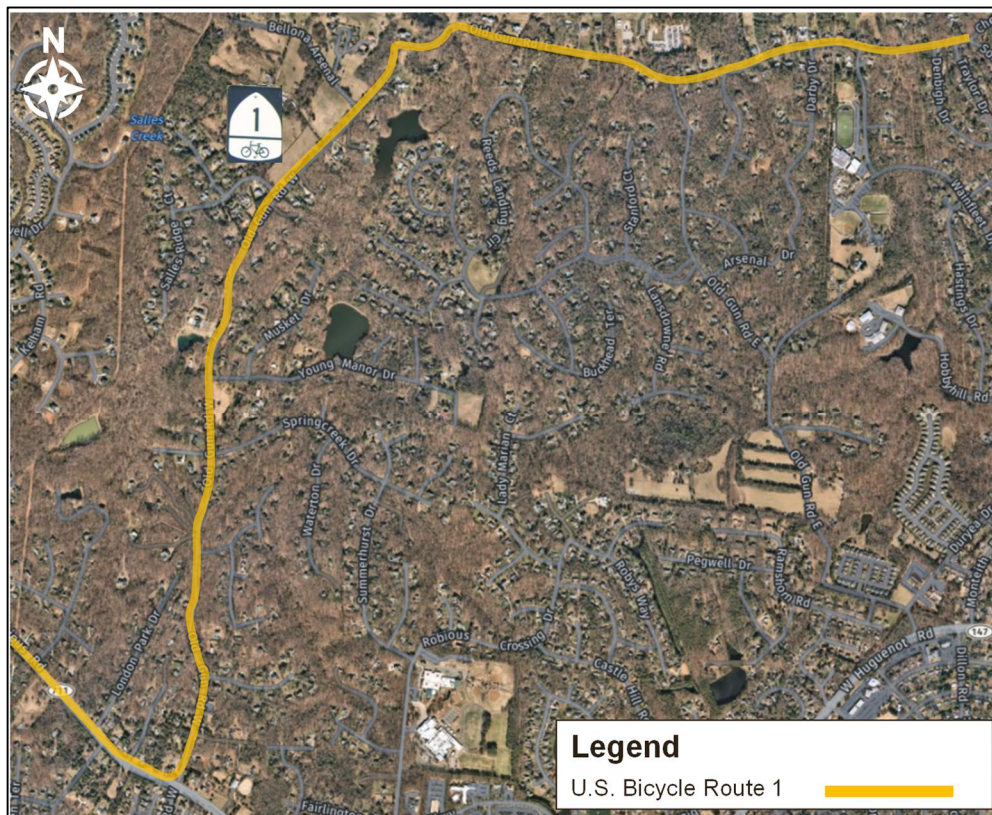


Figure 2: U.S. Bicycle Route 1 Path

3.2 Traffic Control Devices

Along Old Gun Road, there are various signs to warn drivers of upcoming intersections (W2-2), sharp turn curves (W1-1), winding road ahead (W1-4 and W1-5), and curve warning chevrons (W1-8). Additional signs include Signal Ahead (W3-3), horizontal alignment (W1-6), and Reduced Speed Ahead (R2-5a). The speed limit is posted three times from west to east and once from east to west. Some signs are impeded by roadside overgrown vegetation and are noted in later sections of this RSA. Existing signs were reviewed during the field observations and are shown in each direction in **Figure 3** and **Figure 4**.



Figure 3: Existing Eastbound Signs



Figure 4: Existing Westbound Signs

There are several two-way, stop-controlled intersections in the corridor, all of which require the minor street approach to stop. Some signs were documented as nonexistent at private minor street approaches or were not MUTCD compliant (Bellona Arsenal Road, Reeds Landing Road, and Iron Forge Drive) as shown in **Photograph 1**. Old Gun Road intersects Robious Road at a signalized intersection; however, the crashes at this intersection were not documented in this RSA. There are no crosswalks to facilitate pedestrians crossing along Old Gun Road and no pedestrians were observed during field review observations.



Photograph 1: Non-Compliant and Deficient Minor Street Signs

3.3 Geometric Conditions

Intersection sight distance was evaluated at each minor street approach serving multiple residences, including both public and private roads to determine sight distance adequacy. According to VDOT Road Design Manual intersection sight distance requirements for 35 mph two-lane roads, the minimum sight distance is 390 feet and the stopping sight distance is 250 feet per AASHTO. The following information summarizes the sight distance evaluation of each minor street.

- **Silbyrd Drive, SR 802 (Public Road)**
 - Looking north: vegetation blocks sight distance (approximately 320 ft)
 - Looking south: sight distance sufficient (>390 ft)
- **Reeds Bluff Lane, SR 4229 (Public Road)**
 - Both directions: sight distance sufficient (>390 ft)
- **Oak Glade Drive, SR 1255 (Public Road)**
 - Looking north: sight distance sufficient (>390 ft)
 - Looking south: vertical curve obstructs sight distance
- **Springcreek Drive, SR 1065 (Public Road)**
 - Looking north: overhanging branches block sight distance
 - Looking south: sight distance sufficient (>390 ft)
- **Capwell Drive (Public Road)**
 - Looking north: shrub blocking sight distance
 - Looking south: sight distance sufficient (>390 ft)
- **Young Manor Drive, SR 1020 (Public Road)**
 - Looking north: trees block sight distance (approximately 360 ft)
 - Looking south: sight distance sufficient (>390 ft)
- **Iron Forge Drive (Private Road)**
 - Both directions: sight distance sufficient (>390 ft)
- **Bellona Arsenal Road (Private Road)**
 - Both directions: sight distance sufficient (>390 ft)
- **Cherokee Road, SR 704 (Public Road)**
 - Looking north: vertical curve obstructs sight distance (approximately 320 feet)
 - Looking south: sight distance sufficient (>390 ft)
- **Hinshaw Drive, SR 1434 (Public Road)**
 - Looking north: trees block sight distance
 - Looking south: sight distance sufficient (>390 ft)
- **Reeds Landing Road (Private Road)**
 - Both directions: sight distance sufficient (>390 ft)
- **Arsenal Drive, SR 883 (Public Road)**
 - Both directions: sight distance sufficient (>390 ft)

Intersections requiring vegetative trimming in order to meet sight distance are noted in **Appendix C**.

Based on the sight distance evaluation, multiple intersecting roads do not meet sight distance requirements. In general, vegetative overgrowth on private property contributed to reducing the available sight distance at the minor street approaches. These characteristics

are consistent with the roads that contain narrow travel lanes with minimal shoulder width in certain segments and adjacent fixed objects within the clear zone.

The study team collected and reviewed the ball bank data to determine the impact of horizontal curves along the road. A summary of the ball bank data is shown in **Figure 5** and **Figure 6**. Based on the data collected, the study team determined that approximately 18% of the roadway has curves with a ball bank angle of $>15^\circ$, corresponding to advisory speeds between 25-30 mph and approximately 51% of the roadway has curves with a ball bank angle of $>10^\circ$, corresponding to advisory speeds greater than 35 mph.

3.4 Traffic Conditions

The study team used the VDOT Pathways for Planning tool to assist in the collection of traffic conditions on Old Gun Road, including historical traffic volumes and estimates of future growth in the corridor. For the ten years between 2013 and 2022, Old Gun Road has an average annual daily traffic (AADT) ranging from 1,150 to 1,596. The Pathways for Planning online application tool was used to estimate the future AADT along Old Gun Road which contains estimates up to the year 2050. Therefore, the future AADT in 2050 along Old Gun Road is estimated to be 1,725. No turning movement counts were collected at intersections in the study segment.

Speed data (48 hours) was collected at two locations on Old Gun Road: 1. between Iron Forge Drive and Bellona Arsenal Road and 2. west of Cherokee Road starting at 12 pm on Monday, June 12, 2023 and ending at 12 pm on Wednesday, June 14, 2023. The weather during data collection was mostly sunny with minimal precipitation. Complete speed data results are included in **Appendix A**. The following graphics summarize the existing ball bank data results.

- **Between Iron Forge Drive and Bellona Arsenal Road**
 - 85th percentile speed (westbound): 41 mph
 - 85th percentile speed (eastbound): 42 mph
 - Combined 10 mph pace: 30-39 mph
- **West of Cherokee Road**
 - 85th percentile speed (westbound): 44 mph
 - 85th percentile speed (eastbound): 44 mph
 - Combined 10 mph pace: 35-44 mph

The posted speed limit is 35 mph. Based on the speed data collected, vehicles traveled in the corridor between 6 to 9 mph over the posted speed limit (~28%). The speed data results indicate that a majority of vehicles travel above the posted speed limit. Public education outreach has been conducted via the In Memory Of Campaign since the fatal crash that triggered this RSA. The campaign strives to discourage speeding, driving under the influence, distracting driving, and promote wearing a seat belt.

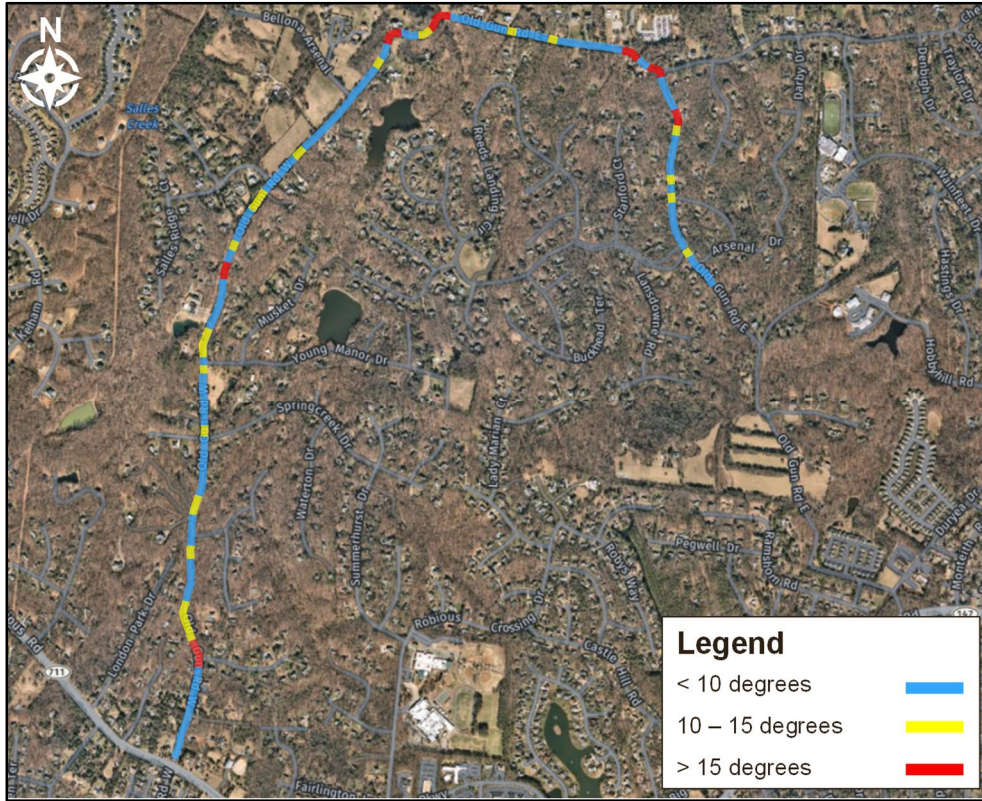


Figure 5: Recorded Eastbound Ball Bank Data

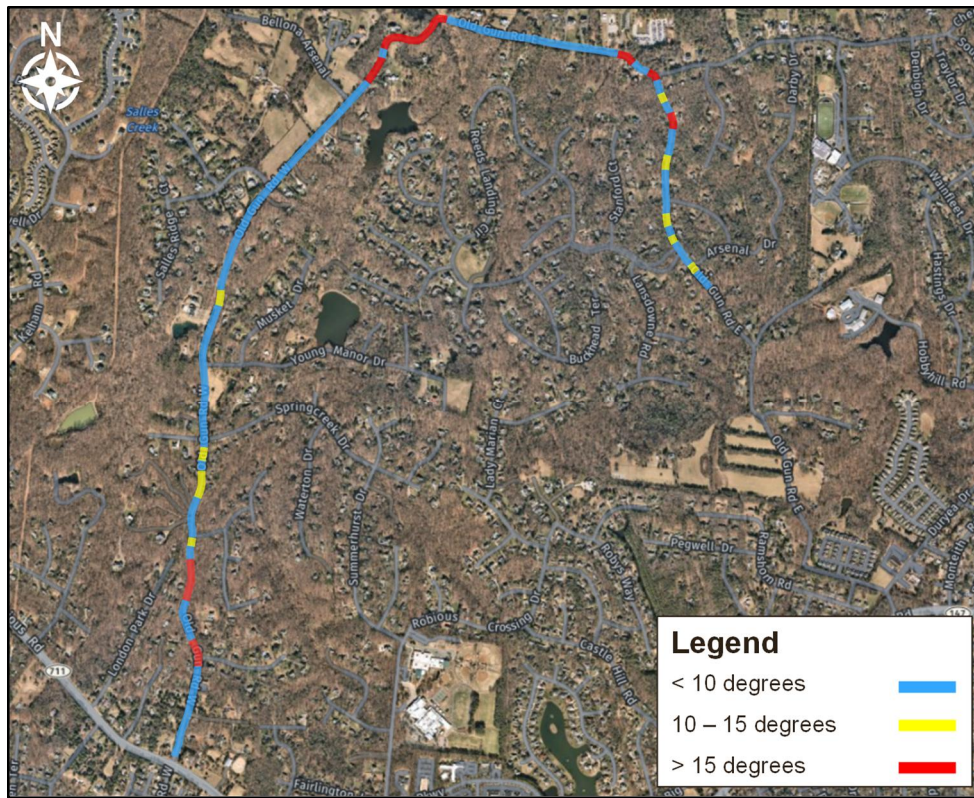


Figure 6: Recorded Westbound Ball Bank Data

4.0 SPEED FEEDBACK DISPLAY SIGN ANALYSIS

Per guidance in the IIM TE 374.1, implementation of pole mounted speed display (PMSD) signs is recommended when either of the following criteria are applicable to the subject roadway:

1. The roadway is residential and/or pedestrian oriented with no more than two lanes (one lane per travel direction) with a posted speed limit of 40 mph or less where the 85th percentile speed exceeds the posted speed limit by at least 10 MPH for the travel direction(s) and time period of concern or (see note below);
2. Other non-residential locations deemed appropriate by the Regional Traffic Engineer such as to encourage compliance for advisory speed conditions (at a curve etc.) or to address locations with identified, speed-related safety concerns.

Note that based on speed data summarized in the previous section, the 85th percentile speeds vary between 6 – 9 mph over the posted speed limit which does not meet the PMSD sign warrant criteria (10 mph over). However, the posted speed limit along Old Gun Road is 35 mph and the roadway is a 2-lane facility which is applicable to PMSD sign implementation. Additionally, characteristics along Old Gun Road include extensive roadway curvature which results in off-road crashes. Historically, there are documented roadway departure crashes including crashes involving drivers operating vehicles at excessive speeds resulting in higher crash severities and speed related safety concerns. PMSD signs serve the purposes to discourage speeding including increase driver awareness for potentially unforgiving roadway characteristics.

To mitigate future speeding and off-road related crashes, PMSD signs are recommended in both travel directions within straight sections of the roadway before potentially unforgiving roadway curvature is encountered. There were 6 reported roadway departure crashes since 2016 within the curved roadway section just north of Silbyrd Drive. Based on this crash pattern, a possible placement for PMSD signs is just north of Silbyrd Drive near 2801 Old Gun Road on the right side the road facing northbound traffic and just west of 4120 Old Gun Road on the right side of the road facing westbound traffic. Proposed PMSD sign placement is documented in **Appendix C**.

5.0 CRASH ANALYSIS

Crash data within the study segment was obtained from 2018 through 2022 to understand the crash patterns and frequency of typical crashes that occur on Old Gun Road. The following sections summarize the crash data reviewed as part of this RSA.

5.1 Crash History Summary

Between 2018 and 2022, a total of 38 crashes occurred along Old Gun Road within the study segment limits. Documentation of the crash location by crash type is shown in **Figure 7**. The following summarizes the crash data statistics and trends.

- The most frequent crash type was fixed object (25 crashes, 66%). The second most frequent crash type was angle (5 crashes, 13%). A complete summary of crashes by type is in **Table 1**.
- There were 25 crashes (66%) that resulted in property damage only. There were 5 crashes (13%) that resulted in a severe injury. A complete summary of crashes by severity is in **Table 2**.
- There were 26 crashes (68%) that occurred during daylight lighting conditions. A complete summary of crashes by lighting condition is shown in **Table 3**.
- Thirty-one crashes (82%) were reported not occurring at an intersection.
- There were 12 crashes (32%) that involved a young driver.
- Seventeen crashes (45%) were reported along a curved roadway alignment.
- The most frequent time crashes occurred was from 3 to 6 pm during which nine crashes (24%) occurred. A complete summary of crashes by time of day is in **Table 4**.
- There were 27 crashes (71%) that occurred on dry pavement and six crashes (16%) that occurred on wet pavement.

Detailed crash data is provided in **Appendix B**.

Note that this RSA was triggered as a result of a fatal crash that occurred on April 11, 2023 not captured in the crash data summary. The crash resulted from a vehicle operating at a high rate of speed. The vehicle ran off the road to the right which caused the driver to overcorrect before exiting the roadway and crashing into a driveway culvert. The driver of vehicle was documented not wearing a restraint while the passenger was documented wearing a restraint. The crash occurred during daylight lighting conditions and dry roadway surface conditions south of Springcreek Drive.

There was an additional fatal crash reported in 2016 within the study segment not captured in the crash data summary. The crash resulted in a speeding vehicle departing the roadway and striking a tree. Occupants were documented not wearing a safety restraint. The crash occurred during daylight lighting conditions and dry roadway surface conditions south of Iron Forge Drive.

6.0 FIELD OBSERVATIONS AND CRASH DATA ASSESSMENT

The historical crash data was used to determine relationships between crash patterns and existing roadway characteristics. The following summarizes the crash trends as related to the documented field observations along Old Gun Road.

6.1 Fixed-Object Crashes Contributing Factors

There were a total of 25 fixed object crashes (66%) within the study segment. The location of the fixed object crashes were documented throughout the corridor as shown in **Figure 7** and resulted in severities ranging from severe injuries to property damage only. Based on the roadside characteristics documented, fixed objects are located adjacent to the roadway throughout the study segment. There are steep slopes, close fixed objects (e.g., mailboxes, culverts, ditches), minimal guardrail, little to no shoulder recovery areas, sharp curves, and windy roadway curvature creating unforgiving conditions for vehicles that depart the road. Documentation of roadway features is shown in **Photograph 2** and **Photograph 3**. The photographs display existing roadside features that would result in fixed object crashes.

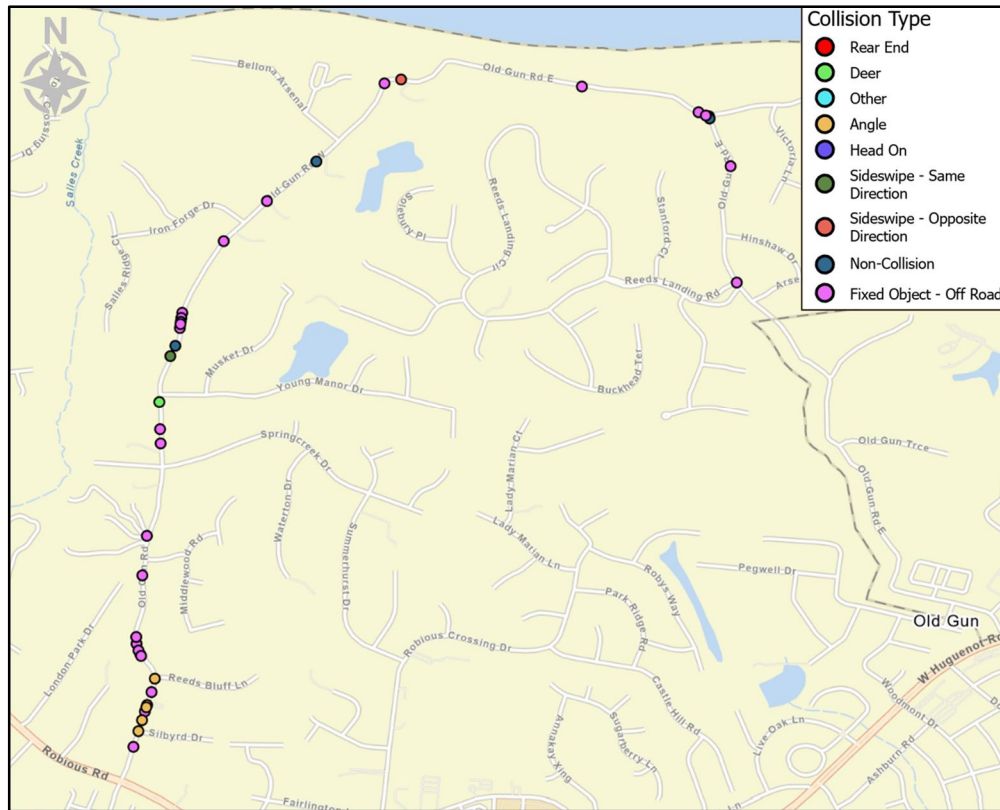


Figure 7: Crash Location by Type

Table 1: Crashes by Type

Year	Angle	Head On	Sideswipe-Same Direction	Sideswipe-Opposite Direction	Non-Collision	Fixed Object	Deer	Other	Total
2018	1	1	1	0	1	7	0	0	11
2019	2	0	0	0	0	3	0	0	5
2020	1	0	0	1	1	5	0	0	8
2021	1	0	0	0	0	8	0	1	10
2022	0	0	0	0	1	2	1	0	4
Total	5	1	1	1	3	25	1	1	38

Table 2: Crashes by Severity

Year	K Fatal	A Severe Injury	B Minor Injury	C Possible Injury	O Property Damage Only	Total
2018	0	1	3	0	7	11
2019	0	1	3	0	1	5
2020	0	3	0	0	5	8
2021	0	0	2	0	8	10
2022	0	0	0	0	4	4
Total	0	5	8	0	25	38

Table 3: Crashes by Lighting Condition

Year	Daylight	Dawn	Dusk	Dark-Roadway Lighted	Dark-Roadway Not Lighted	Total
2018	6	1	2	0	2	11
2019	5	0	0	0	0	5
2020	6	0	0	1	1	8
2021	7	0	0	0	3	10
2022	2	0	0	0	2	4
Total	26	1	2	1	8	38

Table 4: Crashes by Time of Day

Time	Total
12 AM – 3 AM	2
3 AM – 6 AM	2
6 AM – 9 AM	4
9 AM – 12 PM	5
12 PM – 3 PM	7
3 PM – 6 PM	9
6 PM – 9 PM	7
9 PM – 12 AM	2
Total	38



Photograph 2: General Roadside Features



Photograph 3: General Roadside Features

The RSA team members noted the following observations during the field review.

- Some stop signs were non-MUTCD compliant due to deficient sign size and mounting height
- No striping exists on private roads
- Some private roads do not have stop signs on the minor-street approach
- Some speed limit signs are obstructed by vegetation
- There are a deficient number of curve warning signs in the northbound direction

- Some three-leg intersection warning signs (W2-2) are incorrectly applied and should instead display a four-leg intersection warning sign (W2-1)
- Trees are located close to the roadway including vegetation overgrowth that impacts the clear zone
- Vehicles will periodically traverse over the centerline pavement markings when navigating curves

Additional field review photo documentation is shown in **Photograph 4** to **Photograph 7**.



Photograph 4: Roadway profile near Oak Glade Drive



Photograph 5: Roadway profile near Cherokee Road



Photograph 6: Roadway curvature near Reeds Bluff Lane



Photograph 7: Sloped pavement edge near Young Manor Drive

7.0 SUGGESTED AND PRIORITIZED IMPROVEMENTS

Based on the existing roadway conditions, historical crash data analysis, and field review observations, a series of improvements along Old Gun Road have been identified and are categorized in the following sections. Each improvement falls under short-term, intermediate-term, or long-term improvements based on both its relative expected price and time to both start and finish implementation.

7.1 Short-Term Improvements

The Virginia Transportation Research Council (VTRC) publication, *Systemic Low-Cost Countermeasures for an Unsignalized Intersection Safety Improvements* contains a detailed

list of low-cost, short-term improvements that can be installed at unsignalized intersections to reduce crash frequency and improve safety. These improvements are tiered from 1 to 3, with tier 3 providing the most safety measures. Each tier is marginally more expensive than the last, which may be a consideration under tighter budget constraints. The following list documents the features of a Tier 1 unsignalized intersection.

- Advance intersection ahead warning signs on free approaches
- Advance Stop Ahead warning signs on stop approach
- Properly spaced and placed stop bar and double yellow centerline striping
- At T intersections, double arrow warning signs
- Appropriately colored reflective strips on warning and stop sign posts
- Removal of foliage or parking that limits sight distance

Proposed additional and modified signs on Old Gun Road as part of Tier 1 improvements are illustrated in **Figure 8** and **Figure 9**.

Additional short-term improvement recommendations include the following:

- Install LED speed feedback signs to discourage speeding
- Install Stop Ahead warning signs
- Install retroreflective strips on curve warning and chevron sign supports to enhance driver awareness
- Implement proposed signing and striping improvements at Cherokee Road and Old Gun Road intersection
- Continued education to the public should be carried out
- Continued enforcement should be carried out



Proposed short-term improvements are shown in intersections sketches in **Appendix C**.

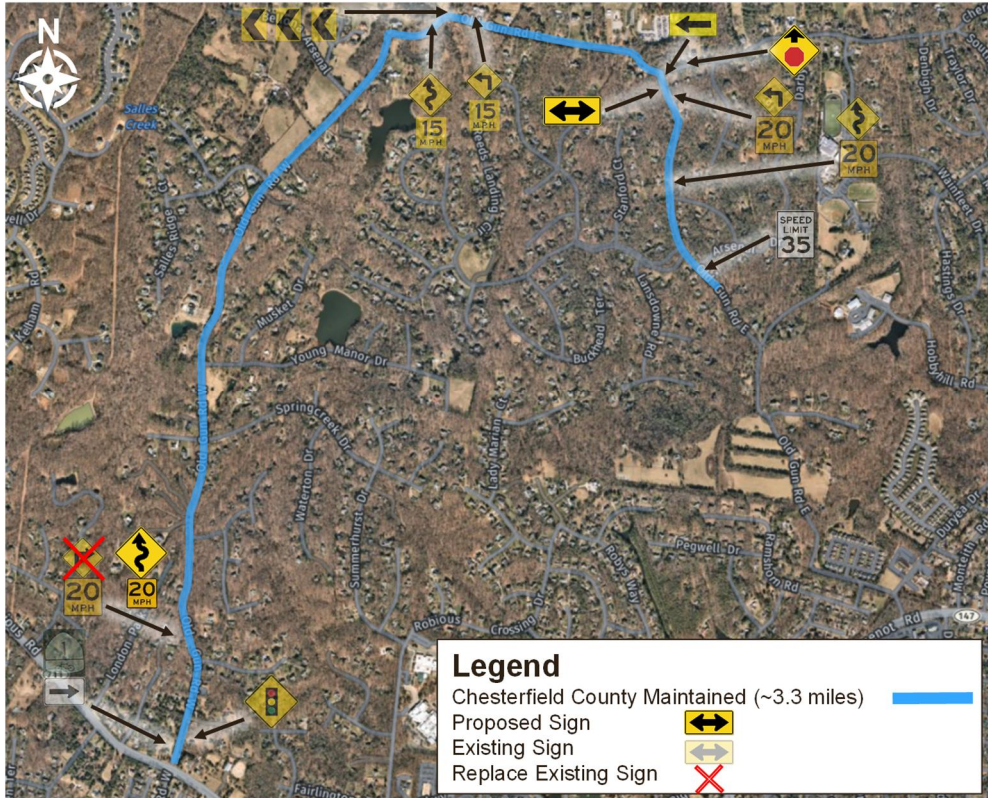


Figure 8: Westbound Sign Modifications

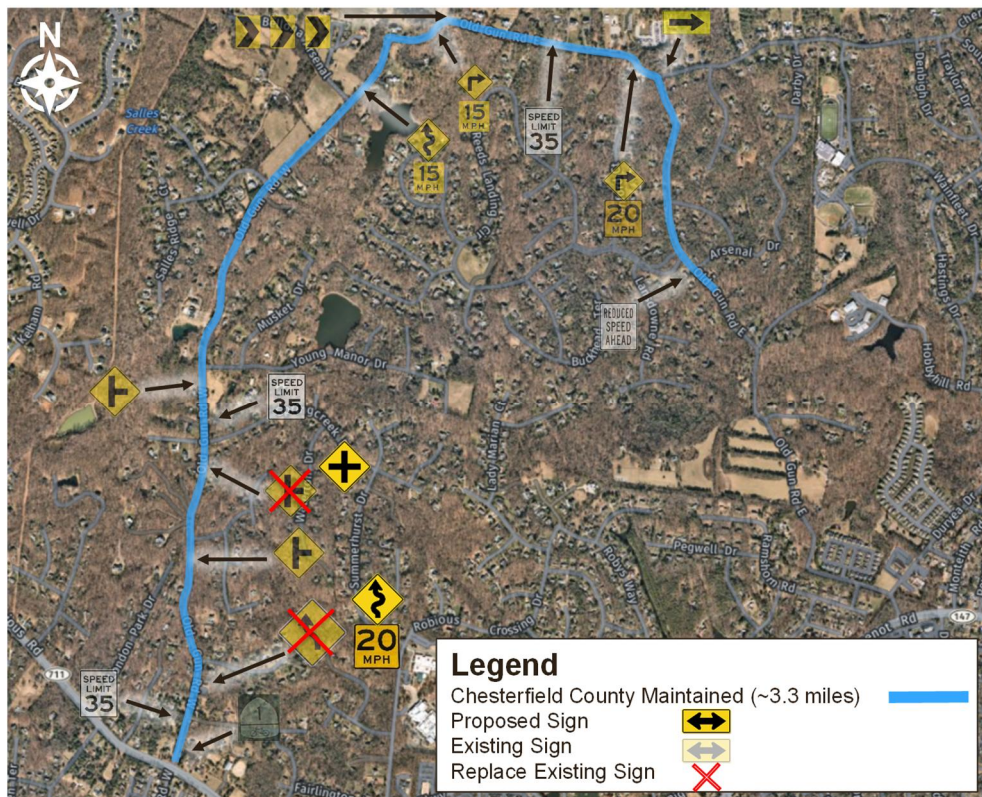


Figure 9: Eastbound Sign Modifications

7.2 Intermediate-Term Improvements

The study team identified two intermediate-term countermeasures. Intermediate-term improvements take longer to implement than short-term improvements but are often less expensive to implement than long-term improvements. The first proposed intermediate improvement includes the removal of obstructions within the roadway clear zone, which includes the removal of foliage within five feet of either edge of the roadway and ensuring all signs are visible.

The second intermediate improvement includes the implementation of a pavement shoulder wedge on the road shoulders where it fits. Data from previous studies shows that vehicles reentering the roadway following roadway departure have a higher likelihood of severe injury or a fatality, since the vertical pavement edge erodes over time. The pavement shoulder wedge involves repaving the shoulder to include a 30-degree slope into the backfill so that as the backfill erodes, any vehicles departing the roadway would be able to reenter the roadway. The pavement shoulder wedge is statistically effective at reducing run-off-the-road crashes by approximately 20%. As part of the pavement shoulder wedge improvement, the road will need to be milled and overlaid. The estimated cost for the intermediate-term improvements is \$5,138,394 and results in a benefit-cost ratio of 1.35. Detailed intermediate-term improvement cost estimates including B/C ratio estimates are included in **Appendix D**.

7.3 Long-Term Improvements

Long-term improvements typically consist of improvements with higher implementation costs than intermediate-term improvements and also take longer to implement. There were two long-term improvement recommendations identified to improve safety along Old Gun Road, including constructing shoulders and widening the roadway. Full-width shoulders, which provide room for recovery once vehicles depart the road, do not exist in most of the corridor. Constructing shoulders and widening Old Gun Road could improve driver safety by providing a roadside recovery area thereby reducing the potential for off-road, fixed-object crashes along the corridor. Long-term improvements will likely involve the taking of extensive amounts of right-of-way, which may not be cost effective or feasible. The estimated cost for the long-term improvements is estimated between \$12,000,000 to \$15,000,000. Long-term improvement cost estimates are included in **Appendix D**.

A complete summary of the safety challenges and recommendations is provided in **Table 5**.

8.0 CONCLUSIONS

The potential measures that can be anticipated to enhance safety along Old Gun Road were described in this report. Fixed-object crashes were documented as the leading crash type in the study segment. VDOT, in cooperation with Chesterfield County, should investigate the priority and feasibility of implementing short-, intermediate-, and long-term safety measures to determine what recommendations would be most beneficial and feasible to implement to improve road user safety. The proposed safety recommendations for implementation are outlined in **Table 5**.

Table 5: Summary of Safety Issues and Recommendations

Issue		Short-Term Recommendations
1	Speeding	<ul style="list-style-type: none"> • Install LED speed feedback signs • Provide continued education to drivers • Provide continued speeding enforcement
2	Missing Signs	<ul style="list-style-type: none"> • Install a two-direction large arrow sign (W1-7) at certain minor-streets approaches to Old Gun Road • Install a Stop Ahead (W3-1) sign on the westbound approach of Cherokee Road • Install retroreflective strips on curve warning and chevron sign supports • Replace three-leg approach warning signs (W2-2) with four-leg approach warning signs (W2-1) where applicable in both directions • Install supplemental warning speed (W13-1P) signs below curve warning signs, where applicable, in the northbound direction • Upgrade non-compliant MUTCD sign to standard signs in 2 locations • Install stop signs, where applicable, on minor street approaches • Replace a roadway curve warning sign (W1-4) in the northbound direction with a modified roadway alignment curve warning sign (W1-5) • Remove vegetation obstructing the stop sign on Cherokee Road
3	Missing Pavement Markings	<ul style="list-style-type: none"> • Improve striping at the intersection of Old Gun Road and Cherokee Road including centerline pavement markings
Issue		Intermediate-Term Recommendations
1	Clear Zone Obstructions	<ul style="list-style-type: none"> • Remove vegetative overgrowth and fixed objects within five feet of the edge of the pavement
2	Off-Road Crashes	<ul style="list-style-type: none"> • Implement pavement shoulder wedges along the edge of pavement
Issue		Long-Term Recommendations
1	Off-Road Crashes	<ul style="list-style-type: none"> • Build up the shoulders, where feasible, throughout the study area • Widen the roadway, where feasible, throughout the study area

Appendix A

Speed Data

Default Report Title
 Use Preferences to Define Titles

Site Code: 1
 Station ID: 673
 Location 1: 37.554044,-77.607213
 Location 2:
 Location 3:
 Location 4:
 Direction: West, None Specified

Comment 1:
 Comment 2:
 Comment 3:
 Comment 4:
 Latitude: 0.000000
 Longitude: 0.000000

6/12/2023	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	*	*	*	*	*	*	*	*	*	*	*	*	*	0
1:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
2:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
3:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
4:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
5:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
6:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
7:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
8:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
9:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
10:00	0	3	3	8	10	11	1	0	0	0	0	0	0	36
11:00	0	1	0	3	17	11	1	1	0	0	0	0	0	34
12:00 PM	0	0	3	4	15	6	12	0	0	1	0	0	0	41
1:00	0	0	2	1	12	13	6	0	0	0	0	0	0	34
2:00	1	1	1	5	10	8	0	2	0	0	0	0	0	28
3:00	0	0	1	7	24	13	8	0	0	0	0	0	0	53
4:00	5	1	1	5	14	12	7	2	0	0	0	0	0	47
5:00	0	0	1	2	13	16	8	1	0	0	0	0	0	41
6:00	0	1	3	3	4	8	7	2	1	0	0	0	0	29
7:00	1	0	0	3	12	8	9	0	0	0	0	0	0	33
8:00	0	0	0	3	10	4	1	2	0	0	0	0	0	20
9:00	0	0	0	1	5	1	2	0	0	0	0	0	0	9
10:00	0	0	0	0	1	0	2	0	0	0	0	0	0	3
11:00	0	0	0	0	2	1	0	2	1	0	0	0	0	6
Total	7	7	15	45	149	112	64	12	2	1	0	0	0	414

Default Report Title
 Use Preferences to Define Titles

Site Code: 1
 Station ID: 673
 Location 1: 37.554044,-77.607213
 Location 2:
 Location 3:
 Location 4:
 Direction: West, None Specified

Comment 1:
 Comment 2:
 Comment 3:
 Comment 4:
 Latitude: 0.000000
 Longitude: 0.000000

6/13/2023	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	2
1:00	0	0	0	0	0	0	1	0	0	0	0	0	0	1
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
4:00	0	0	0	0	0	1	0	0	0	0	0	0	0	1
5:00	0	1	0	0	2	0	1	1	0	0	0	0	0	5
6:00	0	0	0	2	1	4	2	0	0	0	0	0	0	9
7:00	0	0	2	0	5	9	3	1	1	0	0	0	0	21
8:00	0	0	1	6	16	21	5	4	1	0	0	0	0	54
9:00	1	1	0	2	11	16	6	1	0	0	0	0	0	38
10:00	0	1	0	5	5	18	6	1	0	0	0	0	0	36
11:00	1	0	0	1	7	11	6	0	0	0	0	0	0	26
12:00 PM	1	1	2	6	15	8	11	2	0	0	0	0	0	46
1:00	0	1	0	3	19	11	8	1	1	0	0	0	0	44
2:00	0	1	0	1	15	16	7	0	0	0	0	0	0	40
3:00	2	0	1	3	22	20	8	3	1	0	0	0	0	60
4:00	0	0	2	2	12	18	8	3	1	0	0	0	0	46
5:00	0	0	3	3	28	32	12	5	0	0	0	0	0	83
6:00	0	3	2	4	4	13	6	2	0	0	0	0	0	34
7:00	0	1	2	4	1	6	4	1	0	0	0	0	0	19
8:00	1	1	1	6	13	18	5	0	0	0	0	0	0	45
9:00	0	0	1	1	2	8	1	0	0	0	0	0	0	13
10:00	0	0	0	0	2	3	1	0	0	1	0	0	0	7
11:00	0	0	0	0	2	1	1	0	0	0	0	0	1	5
Total	6	11	17	50	183	235	102	25	5	1	0	0	1	636

Default Report Title
 Use Preferences to Define Titles

Site Code: 1
 Station ID: 673
 Location 1: 37.554044,-77.607213
 Location 2:
 Location 3:
 Location 4:
 Direction: West, None Specified

Comment 1:
 Comment 2:
 Comment 3:
 Comment 4:
 Latitude: 0.000000
 Longitude: 0.000000

6/14/2023	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	1
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	1	4	4	0	0	0	0	0	0	0	9
5:00	0	1	0	0	1	1	0	0	0	0	0	0	0	3
6:00	0	0	0	0	3	2	1	1	1	0	0	0	0	8
7:00	0	0	0	1	6	6	6	2	0	0	0	0	0	21
8:00	0	0	2	5	15	12	5	1	1	0	0	0	0	41
9:00	1	3	0	2	15	22	6	3	0	0	0	0	0	52
10:00	0	2	1	1	11	14	3	0	0	0	0	0	0	32
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
12:00 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	0
1:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
2:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
3:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
4:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
5:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
6:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
7:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
8:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
9:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
Total	1	6	3	10	56	61	21	7	2	0	0	0	0	167
Grand Total	14	24	35	105	388	408	187	44	9	2	0	0	1	1217

Stats	Percentile	15th	50th	85th	95th
	Speed	30	35	41	45
	Mean Speed (Average)	35.3			
	10 MPH Pace Speed	30-39			
	Number in Pace	790			
	Percent in Pace	64.9%			
	Number > 45 MPH	56			
	Percent > 45 MPH	4.6%			

Default Report Title
 Use Preferences to Define Titles

Site Code: 1
 Station ID: 673
 Location 1: 37.554044,-77.607213
 Location 2:
 Location 3:
 Location 4:
 Direction: East, None Specified

Comment 1:
 Comment 2:
 Comment 3:
 Comment 4:
 Latitude: 0.000000
 Longitude: 0.000000

6/12/2023	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	*	*	*	*	*	*	*	*	*	*	*	*	*	0
1:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
2:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
3:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
4:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
5:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
6:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
7:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
8:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
9:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
10:00	1	3	0	4	5	12	3	1	0	0	0	0	0	29
11:00	0	2	1	1	11	14	11	4	0	0	0	0	0	44
12:00 PM	0	0	0	2	6	13	5	2	1	0	0	0	0	29
1:00	1	0	0	2	8	11	4	1	0	0	0	0	0	27
2:00	0	2	4	8	6	17	12	0	0	0	0	0	0	49
3:00	0	0	1	3	4	21	6	1	2	0	0	0	0	38
4:00	2	1	1	1	7	15	6	3	0	0	0	0	0	36
5:00	0	0	1	1	10	16	17	3	0	0	0	0	0	48
6:00	1	0	0	3	11	10	6	1	0	0	0	0	0	32
7:00	1	0	3	1	9	5	5	4	0	0	0	0	0	28
8:00	1	1	0	0	5	11	5	0	0	0	0	0	0	23
9:00	0	0	0	1	1	5	0	0	0	0	0	0	0	7
10:00	0	0	0	2	1	2	0	0	0	0	0	0	0	5
11:00	0	0	0	0	1	0	1	0	0	0	0	0	0	2
Total	7	9	11	29	85	152	81	20	3	0	0	0	0	397

Default Report Title
 Use Preferences to Define Titles

Site Code: 1
 Station ID: 673
 Location 1: 37.554044,-77.607213
 Location 2:
 Location 3:
 Location 4:
 Direction: East, None Specified

Comment 1:
 Comment 2:
 Comment 3:
 Comment 4:
 Latitude: 0.000000
 Longitude: 0.000000

6/13/2023	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	1
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	1	0	0	0	0	0	0	1
5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00	0	0	0	1	1	5	3	0	1	0	0	0	0	11
7:00	0	0	1	1	4	6	6	2	0	0	0	0	0	20
8:00	0	0	0	3	9	39	6	4	0	0	0	0	0	61
9:00	0	1	0	1	9	20	8	3	0	0	0	0	0	42
10:00	1	0	0	8	6	15	2	1	0	0	0	0	0	33
11:00	0	0	0	1	5	13	10	4	0	0	0	0	0	33
12:00 PM	0	1	1	2	9	16	8	0	0	0	0	0	0	37
1:00	0	0	1	6	14	14	6	0	1	0	0	0	0	42
2:00	0	0	1	3	12	18	18	2	0	0	0	0	0	54
3:00	0	0	2	0	10	19	10	1	0	0	0	0	0	42
4:00	0	0	0	2	13	18	12	2	1	0	0	0	0	48
5:00	0	0	0	1	10	23	14	4	0	0	0	0	0	52
6:00	0	1	1	2	13	13	10	0	0	0	0	0	0	40
7:00	2	1	1	3	7	12	4	3	1	0	0	0	0	34
8:00	1	0	1	1	7	8	3	3	0	0	0	0	0	24
9:00	0	0	0	0	5	7	3	1	0	0	0	0	0	16
10:00	0	0	0	0	1	4	0	0	0	0	0	0	0	5
11:00	0	0	0	0	0	0	1	1	0	0	0	0	0	2
Total	4	4	9	35	135	251	125	31	4	0	0	0	0	598

Default Report Title
 Use Preferences to Define Titles

Site Code: 1
 Station ID: 673
 Location 1: 37.554044,-77.607213
 Location 2:
 Location 3:
 Location 4:
 Direction: East, None Specified

Comment 1:
 Comment 2:
 Comment 3:
 Comment 4:
 Latitude: 0.000000
 Longitude: 0.000000

6/14/2023	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	1
1:00	0	0	0	0	0	0	1	0	0	0	0	0	0	1
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	1	0	1	0	1	0	0	0	0	0	3
4:00	0	0	0	0	1	1	0	0	0	0	0	0	0	2
5:00	0	0	0	0	1	0	2	0	0	0	0	0	0	3
6:00	0	0	0	0	1	1	1	0	0	0	0	0	0	3
7:00	0	0	0	2	6	7	6	1	0	0	0	0	0	22
8:00	4	2	0	2	12	21	13	4	1	0	0	0	0	59
9:00	0	0	0	3	2	15	9	4	0	0	0	0	0	33
10:00	0	0	1	0	11	18	5	1	0	0	0	0	0	36
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
12:00 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	0
1:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
2:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
3:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
4:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
5:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
6:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
7:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
8:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
9:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
Total	4	2	1	8	35	64	37	11	1	0	0	0	0	163
Grand Total	15	15	21	72	255	467	243	62	8	0	0	0	0	1158
Stats	Percentile		15th	50th	85th	95th								
	Speed		31	37	42	45								
	Mean Speed (Average)		36.6											
	10 MPH Pace Speed		31-40											
	Number in Pace		720											
	Percent in Pace		62.2%											
	Number > 45 MPH		70											
	Percent > 45 MPH		6.0%											

Default Report Title
 Use Preferences to Define Titles

Site Code: 1
 Station ID: 673
 Location 1: 37.554044,-77.607213
 Location 2:
 Location 3:
 Location 4:
 Direction: Combined

Comment 1:
 Comment 2:
 Comment 3:
 Comment 4:
 Latitude: 0.000000
 Longitude: 0.000000

6/12/2023	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	*	*	*	*	*	*	*	*	*	*	*	*	*	0
1:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
2:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
3:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
4:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
5:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
6:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
7:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
8:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
9:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
10:00	1	6	3	12	15	23	4	1	0	0	0	0	0	65
11:00	0	3	1	4	28	25	12	5	0	0	0	0	0	78
12:00 PM	0	0	3	6	21	19	17	2	1	1	0	0	0	70
1:00	1	0	2	3	20	24	10	1	0	0	0	0	0	61
2:00	1	3	5	13	16	25	12	2	0	0	0	0	0	77
3:00	0	0	2	10	28	34	14	1	2	0	0	0	0	91
4:00	7	2	2	6	21	27	13	5	0	0	0	0	0	83
5:00	0	0	2	3	23	32	25	4	0	0	0	0	0	89
6:00	1	1	3	6	15	18	13	3	1	0	0	0	0	61
7:00	2	0	3	4	21	13	14	4	0	0	0	0	0	61
8:00	1	1	0	3	15	15	6	2	0	0	0	0	0	43
9:00	0	0	0	2	6	6	2	0	0	0	0	0	0	16
10:00	0	0	0	2	2	2	2	0	0	0	0	0	0	8
11:00	0	0	0	0	3	1	1	2	1	0	0	0	0	8
Total	14	16	26	74	234	264	145	32	5	1	0	0	0	811

Default Report Title
 Use Preferences to Define Titles

Site Code: 1
 Station ID: 673
 Location 1: 37.554044,-77.607213
 Location 2:
 Location 3:
 Location 4:
 Direction: Combined

Comment 1:
 Comment 2:
 Comment 3:
 Comment 4:
 Latitude: 0.000000
 Longitude: 0.000000

6/13/2023	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	0	0	0	1	2	0	0	0	0	0	0	0	3
1:00	0	0	0	0	0	0	1	0	0	0	0	0	0	1
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
4:00	0	0	0	0	0	1	1	0	0	0	0	0	0	2
5:00	0	1	0	0	2	0	1	1	0	0	0	0	0	5
6:00	0	0	0	3	2	9	5	0	1	0	0	0	0	20
7:00	0	0	3	1	9	15	9	3	1	0	0	0	0	41
8:00	0	0	1	9	25	60	11	8	1	0	0	0	0	115
9:00	1	2	0	3	20	36	14	4	0	0	0	0	0	80
10:00	1	1	0	13	11	33	8	2	0	0	0	0	0	69
11:00	1	0	0	2	12	24	16	4	0	0	0	0	0	59
12:00 PM	1	2	3	8	24	24	19	2	0	0	0	0	0	83
1:00	0	1	1	9	33	25	14	1	2	0	0	0	0	86
2:00	0	1	1	4	27	34	25	2	0	0	0	0	0	94
3:00	2	0	3	3	32	39	18	4	1	0	0	0	0	102
4:00	0	0	2	4	25	36	20	5	2	0	0	0	0	94
5:00	0	0	3	4	38	55	26	9	0	0	0	0	0	135
6:00	0	4	3	6	17	26	16	2	0	0	0	0	0	74
7:00	2	2	3	7	8	18	8	4	1	0	0	0	0	53
8:00	2	1	2	7	20	26	8	3	0	0	0	0	0	69
9:00	0	0	1	1	7	15	4	1	0	0	0	0	0	29
10:00	0	0	0	0	3	7	1	0	0	1	0	0	0	12
11:00	0	0	0	0	2	1	2	1	0	0	0	0	1	7
Total	10	15	26	85	318	486	227	56	9	1	0	0	1	1234

Default Report Title
 Use Preferences to Define Titles

Site Code: 1
 Station ID: 673
 Location 1: 37.554044,-77.607213
 Location 2:
 Location 3:
 Location 4:
 Direction: Combined

Comment 1:
 Comment 2:
 Comment 3:
 Comment 4:
 Latitude: 0.000000
 Longitude: 0.000000

6/14/2023	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	2
1:00	0	0	0	0	0	0	1	0	0	0	0	0	0	1
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	1	0	1	0	1	0	0	0	0	0	3
4:00	0	0	0	1	5	5	0	0	0	0	0	0	0	11
5:00	0	1	0	0	2	1	2	0	0	0	0	0	0	6
6:00	0	0	0	0	4	3	2	1	1	0	0	0	0	11
7:00	0	0	0	3	12	13	12	3	0	0	0	0	0	43
8:00	4	2	2	7	27	33	18	5	2	0	0	0	0	100
9:00	1	3	0	5	17	37	15	7	0	0	0	0	0	85
10:00	0	2	2	1	22	32	8	1	0	0	0	0	0	68
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
12:00 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	0
1:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
2:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
3:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
4:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
5:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
6:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
7:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
8:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
9:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
Total	5	8	4	18	91	125	58	18	3	0	0	0	0	330
Grand Total	29	39	56	177	643	875	430	106	17	2	0	0	1	2375
Stats	Percentile		15th	50th	85th	95th								
	Speed		31	36	42	45								
	Mean Speed (Average)		35.9											
	10 MPH Pace Speed		30-39											
	Number in Pace		1504											
	Percent in Pace		63.3%											
	Number > 45 MPH		126											
	Percent > 45 MPH		5.3%											

Default Report Title
 Use Preferences to Define Titles

Site Code: 2
 Station ID: 673
 Location 1: 37.550303,-77.618857
 Location 2:
 Location 3:
 Location 4:
 Direction: West, None Specified

Comment 1:
 Comment 2:
 Comment 3:
 Comment 4:
 Latitude: 0.000000
 Longitude: 0.000000

6/12/2023	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	*	*	*	*	*	*	*	*	*	*	*	*	*	0
1:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
2:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
3:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
4:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
5:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
6:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
7:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
8:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
9:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
10:00	0	0	0	1	3	10	2	1	0	0	0	0	0	17
11:00	0	0	0	3	8	17	8	1	1	0	0	0	0	38
12:00 PM	0	1	2	5	7	15	10	4	0	1	0	0	0	45
1:00	0	1	1	3	4	15	14	2	0	0	0	0	0	40
2:00	0	0	2	7	5	10	5	0	0	0	0	0	0	29
3:00	0	0	0	4	23	18	14	2	0	0	0	0	0	61
4:00	0	0	0	1	14	20	12	1	0	0	0	0	0	48
5:00	0	0	2	2	8	11	18	3	1	0	0	0	0	45
6:00	0	0	0	2	5	4	6	3	1	0	0	1	0	22
7:00	0	0	1	3	7	11	7	3	1	0	0	0	0	33
8:00	0	0	0	1	7	5	5	1	0	0	0	0	0	19
9:00	0	0	0	0	2	2	3	0	1	0	0	0	0	8
10:00	0	0	0	0	0	1	1	0	1	0	0	0	0	3
11:00	0	0	0	0	1	2	1	0	0	1	1	0	0	6
Total	0	2	8	32	94	141	106	21	6	2	1	1	0	414

Default Report Title
 Use Preferences to Define Titles

Site Code: 2
 Station ID: 673
 Location 1: 37.550303,-77.618857
 Location 2:
 Location 3:
 Location 4:
 Direction: West, None Specified

Comment 1:
 Comment 2:
 Comment 3:
 Comment 4:
 Latitude: 0.000000
 Longitude: 0.000000

6/13/2023	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	0	0	0	0	1	1	0	0	0	0	0	0	2
1:00	0	0	0	0	0	0	1	0	0	0	0	0	0	1
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	1	0	0	0	0	0	0	0	1
4:00	0	0	0	0	0	0	1	0	0	0	0	0	0	1
5:00	0	0	0	0	3	0	1	0	1	0	0	0	0	5
6:00	0	0	0	1	1	2	4	2	0	1	0	0	0	11
7:00	0	0	0	1	3	3	9	0	1	0	0	0	0	17
8:00	0	0	0	1	10	28	13	6	0	1	0	0	0	59
9:00	0	0	0	2	7	15	13	5	0	0	0	0	0	42
10:00	0	0	0	2	11	8	8	4	3	0	0	0	0	36
11:00	0	0	0	3	8	12	3	6	0	0	0	0	0	32
12:00 PM	3	2	2	7	4	16	11	3	2	0	0	0	0	50
1:00	0	0	0	1	10	16	11	5	0	0	0	0	0	43
2:00	0	1	0	2	9	10	9	5	0	0	0	0	0	36
3:00	0	0	0	2	15	24	13	7	2	0	0	0	0	63
4:00	0	0	0	10	15	12	7	5	2	1	0	0	0	52
5:00	0	0	0	6	12	38	22	5	1	0	0	0	0	84
6:00	0	0	0	4	7	12	6	2	1	0	0	0	0	32
7:00	0	1	0	3	3	7	2	1	1	0	0	0	0	18
8:00	0	0	0	6	9	13	14	2	0	0	0	0	0	44
9:00	0	0	0	1	5	2	5	1	0	0	0	0	0	14
10:00	0	0	0	0	1	1	0	3	0	0	0	0	0	5
11:00	0	0	0	0	0	2	0	1	0	0	0	0	1	4
Total	3	4	2	52	133	223	154	63	14	3	0	0	1	652

Default Report Title
 Use Preferences to Define Titles

Site Code: 2
 Station ID: 673
 Location 1: 37.550303,-77.618857
 Location 2:
 Location 3:
 Location 4:
 Direction: West, None Specified

Comment 1:
 Comment 2:
 Comment 3:
 Comment 4:
 Latitude: 0.000000
 Longitude: 0.000000

6/14/2023	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	1
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	2	5	2	0	0	0	0	0	0	9
5:00	0	0	0	0	2	0	1	0	0	0	0	0	0	3
6:00	0	0	0	0	0	3	2	2	1	2	0	0	0	10
7:00	0	0	0	1	3	6	6	5	0	0	0	0	0	21
8:00	0	2	3	5	7	16	8	2	0	1	0	0	0	44
9:00	0	0	4	5	13	13	15	5	0	0	0	0	0	55
10:00	0	0	0	5	5	11	6	3	0	0	0	0	0	30
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
12:00 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	0
1:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
2:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
3:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
4:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
5:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
6:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
7:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
8:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
9:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
Total	0	2	7	16	32	54	41	17	1	3	0	0	0	173
Grand Total	3	8	17	100	259	418	301	101	21	8	1	1	1	1239

Stats	Percentile	15th	50th	85th	95th
	Speed	32	38	44	48
	Mean Speed (Average)	37.9			
	10 MPH Pace Speed	35-44			
	Number in Pace	718			
	Percent in Pace	57.9%			
	Number > 45 MPH	133			
	Percent > 45 MPH	10.7%			

Default Report Title
 Use Preferences to Define Titles

Site Code: 2
 Station ID: 673
 Location 1: 37.550303,-77.618857
 Location 2:
 Location 3:
 Location 4:
 Direction: East, None Specified

Comment 1:
 Comment 2:
 Comment 3:
 Comment 4:
 Latitude: 0.000000
 Longitude: 0.000000

6/12/2023	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	*	*	*	*	*	*	*	*	*	*	*	*	*	0
1:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
2:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
3:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
4:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
5:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
6:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
7:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
8:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
9:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
10:00	0	0	1	2	3	6	4	2	0	0	0	0	0	18
11:00	2	0	1	2	5	12	16	7	1	0	0	0	0	46
12:00 PM	0	0	1	3	4	11	8	4	1	0	0	0	0	32
1:00	0	0	2	3	3	14	10	1	1	0	0	0	0	34
2:00	0	1	2	2	6	15	16	7	0	0	0	0	0	49
3:00	0	0	2	4	10	11	8	5	1	0	0	0	0	41
4:00	1	1	0	2	8	18	12	6	2	0	0	0	0	50
5:00	0	0	0	7	2	20	11	9	1	0	0	0	0	50
6:00	0	0	0	2	2	13	13	4	2	0	0	0	0	36
7:00	0	1	0	0	7	12	5	4	1	0	0	0	0	30
8:00	0	0	1	2	2	6	9	3	0	0	0	0	0	23
9:00	0	0	0	0	2	1	2	1	0	0	0	0	0	6
10:00	0	0	0	1	0	3	1	0	0	0	0	0	0	5
11:00	0	0	0	0	0	1	1	0	0	0	0	0	0	2
Total	3	3	10	30	54	143	116	53	10	0	0	0	0	422

Default Report Title
 Use Preferences to Define Titles

Site Code: 2
 Station ID: 673
 Location 1: 37.550303,-77.618857
 Location 2:
 Location 3:
 Location 4:
 Direction: East, None Specified

Comment 1:
 Comment 2:
 Comment 3:
 Comment 4:
 Latitude: 0.000000
 Longitude: 0.000000

6/13/2023	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	1
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
5:00	0	0	0	1	1	0	0	0	0	0	0	0	0	2
6:00	0	0	1	3	2	2	0	1	1	0	0	0	0	10
7:00	0	1	1	1	4	7	3	2	0	0	0	0	0	19
8:00	0	0	0	4	13	20	20	7	0	2	0	0	0	66
9:00	0	1	2	3	6	17	11	2	0	0	0	0	0	42
10:00	0	0	0	2	6	11	11	4	0	0	0	0	0	34
11:00	0	0	4	0	4	11	18	1	0	0	0	0	0	38
12:00 PM	2	0	1	0	5	7	15	4	1	0	0	0	0	35
1:00	0	0	0	1	8	19	18	3	0	0	0	0	0	49
2:00	0	1	0	3	8	19	19	6	0	0	0	0	0	56
3:00	1	1	1	3	4	12	15	3	1	0	0	0	0	41
4:00	0	0	1	3	6	19	12	6	4	0	0	0	0	51
5:00	0	0	3	1	7	15	21	9	1	0	0	0	0	57
6:00	0	0	2	0	9	15	10	6	1	1	0	0	0	44
7:00	0	0	2	1	8	8	13	4	2	0	0	0	0	38
8:00	0	0	0	0	2	10	3	7	1	0	0	0	0	23
9:00	0	0	0	2	3	3	8	1	0	0	0	0	0	17
10:00	0	0	0	0	1	1	1	1	0	0	0	0	0	4
11:00	0	0	0	0	0	0	0	1	1	0	0	0	0	2
Total	3	4	18	29	97	197	198	68	13	3	0	0	0	630

Default Report Title
 Use Preferences to Define Titles

Site Code: 2
 Station ID: 673
 Location 1: 37.550303,-77.618857
 Location 2:
 Location 3:
 Location 4:
 Direction: East, None Specified

Comment 1:
 Comment 2:
 Comment 3:
 Comment 4:
 Latitude: 0.000000
 Longitude: 0.000000

6/14/2023	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	1
1:00	0	0	0	0	0	0	1	0	0	0	0	0	0	1
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	1	0	1	1	1	0	0	0	0	0	4
4:00	0	0	0	0	0	0	1	0	0	0	0	0	0	1
5:00	0	0	0	0	0	0	1	1	0	0	0	0	0	2
6:00	0	0	6	0	1	0	1	0	0	0	0	0	0	8
7:00	0	0	0	1	3	10	6	0	0	0	0	0	0	20
8:00	1	1	1	8	11	20	12	4	1	0	0	0	0	59
9:00	0	2	1	3	6	11	7	4	0	0	0	0	0	34
10:00	0	0	1	3	6	13	8	4	0	0	0	0	0	35
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
12:00 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	0
1:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
2:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
3:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
4:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
5:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
6:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
7:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
8:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
9:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
Total	1	3	9	16	27	55	39	14	1	0	0	0	0	165
Grand Total	7	10	37	75	178	395	353	135	24	3	0	0	0	1217

Stats	Percentile	15th	50th	85th	95th
	Speed	32	39	44	48
	Mean Speed (Average)	38.3			
	10 MPH Pace Speed	35-44			
	Number in Pace	745			
	Percent in Pace	61.2%			
	Number > 45 MPH	162			
	Percent > 45 MPH	13.3%			

Default Report Title
 Use Preferences to Define Titles

Site Code: 2
 Station ID: 673
 Location 1: 37.550303,-77.618857
 Location 2:
 Location 3:
 Location 4:
 Direction: Combined

Comment 1:
 Comment 2:
 Comment 3:
 Comment 4:
 Latitude: 0.000000
 Longitude: 0.000000

6/12/2023	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	*	*	*	*	*	*	*	*	*	*	*	*	*	0
1:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
2:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
3:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
4:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
5:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
6:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
7:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
8:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
9:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
10:00	0	0	1	3	6	16	6	3	0	0	0	0	0	35
11:00	2	0	1	5	13	29	24	8	2	0	0	0	0	84
12:00 PM	0	1	3	8	11	26	18	8	1	1	0	0	0	77
1:00	0	1	3	6	7	29	24	3	1	0	0	0	0	74
2:00	0	1	4	9	11	25	21	7	0	0	0	0	0	78
3:00	0	0	2	8	33	29	22	7	1	0	0	0	0	102
4:00	1	1	0	3	22	38	24	7	2	0	0	0	0	98
5:00	0	0	2	9	10	31	29	12	2	0	0	0	0	95
6:00	0	0	0	4	7	17	19	7	3	0	0	1	0	58
7:00	0	1	1	3	14	23	12	7	2	0	0	0	0	63
8:00	0	0	1	3	9	11	14	4	0	0	0	0	0	42
9:00	0	0	0	0	4	3	5	1	1	0	0	0	0	14
10:00	0	0	0	1	0	4	2	0	1	0	0	0	0	8
11:00	0	0	0	0	1	3	2	0	0	1	1	0	0	8
Total	3	5	18	62	148	284	222	74	16	2	1	1	0	836

Default Report Title
 Use Preferences to Define Titles

Site Code: 2
 Station ID: 673
 Location 1: 37.550303,-77.618857
 Location 2:
 Location 3:
 Location 4:
 Direction: Combined

Comment 1:
 Comment 2:
 Comment 3:
 Comment 4:
 Latitude: 0.000000
 Longitude: 0.000000

6/13/2023	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	0	0	0	0	2	1	0	0	0	0	0	0	3
1:00	0	0	0	0	0	0	1	0	0	0	0	0	0	1
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	1	0	0	0	0	0	0	0	1
4:00	0	0	0	1	0	0	1	0	0	0	0	0	0	2
5:00	0	0	0	1	4	0	1	0	1	0	0	0	0	7
6:00	0	0	1	4	3	4	4	3	1	1	0	0	0	21
7:00	0	1	1	2	7	10	12	2	1	0	0	0	0	36
8:00	0	0	0	5	23	48	33	13	0	3	0	0	0	125
9:00	0	1	2	5	13	32	24	7	0	0	0	0	0	84
10:00	0	0	0	4	17	19	19	8	3	0	0	0	0	70
11:00	0	0	4	3	12	23	21	7	0	0	0	0	0	70
12:00 PM	5	2	3	7	9	23	26	7	3	0	0	0	0	85
1:00	0	0	0	2	18	35	29	8	0	0	0	0	0	92
2:00	0	2	0	5	17	29	28	11	0	0	0	0	0	92
3:00	1	1	1	5	19	36	28	10	3	0	0	0	0	104
4:00	0	0	1	13	21	31	19	11	6	1	0	0	0	103
5:00	0	0	3	7	19	53	43	14	2	0	0	0	0	141
6:00	0	0	2	4	16	27	16	8	2	1	0	0	0	76
7:00	0	1	2	4	11	15	15	5	3	0	0	0	0	56
8:00	0	0	0	6	11	23	17	9	1	0	0	0	0	67
9:00	0	0	0	3	8	5	13	2	0	0	0	0	0	31
10:00	0	0	0	0	2	2	1	4	0	0	0	0	0	9
11:00	0	0	0	0	0	2	0	2	1	0	0	0	1	6
Total	6	8	20	81	230	420	352	131	27	6	0	0	1	1282

Default Report Title
 Use Preferences to Define Titles

Site Code: 2
 Station ID: 673
 Location 1: 37.550303,-77.618857
 Location 2:
 Location 3:
 Location 4:
 Direction: Combined

Comment 1:
 Comment 2:
 Comment 3:
 Comment 4:
 Latitude: 0.000000
 Longitude: 0.000000

6/14/2023	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	2
1:00	0	0	0	0	0	0	1	0	0	0	0	0	0	1
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	1	0	1	1	1	0	0	0	0	0	4
4:00	0	0	0	0	2	5	3	0	0	0	0	0	0	10
5:00	0	0	0	0	2	0	2	1	0	0	0	0	0	5
6:00	0	0	6	0	1	3	3	2	1	2	0	0	0	18
7:00	0	0	0	2	6	16	12	5	0	0	0	0	0	41
8:00	1	3	4	13	18	36	20	6	1	1	0	0	0	103
9:00	0	2	5	8	19	24	22	9	0	0	0	0	0	89
10:00	0	0	1	8	11	24	14	7	0	0	0	0	0	65
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
12:00 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	0
1:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
2:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
3:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
4:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
5:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
6:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
7:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
8:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
9:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	0
Total	1	5	16	32	59	109	80	31	2	3	0	0	0	338
Grand Total	10	18	54	175	437	813	654	236	45	11	1	1	1	2456

Stats	Percentile	15th	50th	85th	95th
	Speed	32	38	44	48
	Mean Speed (Average)	38.1			
	10 MPH Pace Speed	35-44			
	Number in Pace	1463			
	Percent in Pace	59.6%			
	Number > 45 MPH	295			
	Percent > 45 MPH	12.0%			

Appendix B

Crash Data

DOCUMENT_N	CRASH_YEAR	CRASH_DT	CRASH_MILI	CRASH_SEVE	COLLISION_	WEATHER_CO	LIGHT_COND	ROADWAY_SU	ROADWAY_AL	FIRST_HARM
180725092	2018	3/12/2018	1620	O	9. Fixed Object - Off Road	6. Snow	2. Daylight	3. Snowy	4. Grade - Curve	5. Guard Rail
181195131	2018	4/29/2018	545	B	9. Fixed Object - Off Road	1. No Adverse Condition (Clear/Cloudy)	1. Dawn	1. Dry	2. Curve - Level	28. Ran Off Road
183015108	2018	10/27/2018	1900	O	3. Head On	1. No Adverse Condition (Clear/Cloudy)	5. Darkness - Road Not Lighted	1. Dry	1. Straight - Level	20. Motor Vehicle In Transport
180985145	2018	4/8/2018	1356	B	8. Non-Collision	1. No Adverse Condition (Clear/Cloudy)	2. Daylight	1. Dry	1. Straight - Level	28. Ran Off Road
180335207	2018	1/30/2018	1505	B	9. Fixed Object - Off Road	1. No Adverse Condition (Clear/Cloudy)	2. Daylight	1. Dry	2. Curve - Level	2. Trees
180095354	2018	1/4/2018	1700	O	4. Sideswipe - Same Direction	1. No Adverse Condition (Clear/Cloudy)	3. Dusk	3. Snowy	1. Straight - Level	20. Motor Vehicle In Transport
181495337	2018	5/28/2018	956	O	9. Fixed Object - Off Road	1. No Adverse Condition (Clear/Cloudy)	2. Daylight	1. Dry	2. Curve - Level	14. Ditch
181975070	2018	7/15/2018	2210	O	9. Fixed Object - Off Road	1. No Adverse Condition (Clear/Cloudy)	5. Darkness - Road Not Lighted	1. Dry	1. Straight - Level	28. Ran Off Road
181455269	2018	5/15/2018	937	A	9. Fixed Object - Off Road	1. No Adverse Condition (Clear/Cloudy)	2. Daylight	1. Dry	3. Grade - Straight	2. Trees
180755101	2018	3/12/2018	1620	O	9. Fixed Object - Off Road	6. Snow	2. Daylight	3. Snowy	4. Grade - Curve	14. Ditch
182865326	2018	10/13/2018	1722	O	2. Angle	1. No Adverse Condition (Clear/Cloudy)	3. Dusk	1. Dry	5. Hillcrest - Straight	20. Motor Vehicle In Transport
190455293	2019	2/13/2019	1258	B	9. Fixed Object - Off Road	1. No Adverse Condition (Clear/Cloudy)	2. Daylight	1. Dry	1. Straight - Level	28. Ran Off Road
190225398	2019	1/22/2019	1449	B	2. Angle	1. No Adverse Condition (Clear/Cloudy)	2. Daylight	1. Dry	1. Straight - Level	20. Motor Vehicle In Transport
192565318	2019	9/12/2019	1808	O	9. Fixed Object - Off Road	1. No Adverse Condition (Clear/Cloudy)	2. Daylight	1. Dry	3. Grade - Straight	37. Equipment Failure (Tire, etc)
192225110	2019	8/10/2019	1010	A	2. Angle	1. No Adverse Condition (Clear/Cloudy)	2. Daylight	1. Dry	2. Curve - Level	20. Motor Vehicle In Transport
190495163	2019	2/18/2019	815	B	9. Fixed Object - Off Road	5. Rain	2. Daylight	2. Wet	2. Curve - Level	2. Trees
202645216	2020	9/20/2020	400	O	9. Fixed Object - Off Road	1. No Adverse Condition (Clear/Cloudy)	5. Darkness - Road Not Lighted	1. Dry	1. Straight - Level	7. Tunnel, Bridge, Underpass, Culvert, etc.
201665033	2020	6/12/2020	1458	A	9. Fixed Object - Off Road	1. No Adverse Condition (Clear/Cloudy)	2. Daylight	1. Dry	1. Straight - Level	33. Explosion or Fire
201095167	2020	4/18/2020	1456	A	5. Sideswipe - Opposite Direction	1. No Adverse Condition (Clear/Cloudy)	2. Daylight	1. Dry	4. Grade - Curve	20. Motor Vehicle In Transport
203425451	2020	12/4/2020	10	O	9. Fixed Object - Off Road	1. No Adverse Condition (Clear/Cloudy)	4. Darkness - Road Lighted	1. Dry	4. Grade - Curve	3. Utility Pole
203365277	2020	12/1/2020	1554	A	2. Angle	1. No Adverse Condition (Clear/Cloudy)	2. Daylight	1. Dry	3. Grade - Straight	18. Mailbox
202905271	2020	10/16/2020	1632	O	9. Fixed Object - Off Road	1. No Adverse Condition (Clear/Cloudy)	2. Daylight	2. Wet	3. Grade - Straight	15. Other Fixed Object
203235172	2020	11/13/2020	1210	O	8. Non-Collision	1. No Adverse Condition (Clear/Cloudy)	2. Daylight	8. Natural Debris	2. Curve - Level	28. Ran Off Road
202875305	2020	10/13/2020	1720	O	9. Fixed Object - Off Road	1. No Adverse Condition (Clear/Cloudy)	2. Daylight	1. Dry	4. Grade - Curve	4. Fence Or Post
212815275	2021	10/8/2021	750	O	2. Angle	1. No Adverse Condition (Clear/Cloudy)	2. Daylight	1. Dry	1. Straight - Level	20. Motor Vehicle In Transport
213035062	2021	10/30/2021	2335	B	9. Fixed Object - Off Road	5. Rain	5. Darkness - Road Not Lighted	2. Wet	2. Curve - Level	2. Trees
211285029	2021	5/7/2021	1816	O	9. Fixed Object - Off Road	5. Rain	2. Daylight	2. Wet	2. Curve - Level	2. Trees
212335092	2021	8/17/2021	1037	O	16. Other	1. No Adverse Condition (Clear/Cloudy)	2. Daylight	1. Dry	1. Straight - Level	1. Bank Or Ledge
213125048	2021	11/3/2021	2045	O	9. Fixed Object - Off Road	1. No Adverse Condition (Clear/Cloudy)	5. Darkness - Road Not Lighted	1. Dry	2. Curve - Level	2. Trees
211685030	2021	6/16/2021	1430	O	9. Fixed Object - Off Road	1. No Adverse Condition (Clear/Cloudy)	2. Daylight	1. Dry	4. Grade - Curve	1. Bank Or Ledge
213445104	2021	12/10/2021	810	O	9. Fixed Object - Off Road	1. No Adverse Condition (Clear/Cloudy)	2. Daylight	1. Dry	4. Grade - Curve	2. Trees
211195224	2021	4/29/2021	821	O	9. Fixed Object - Off Road	1. No Adverse Condition (Clear/Cloudy)	2. Daylight	1. Dry	1. Straight - Level	3. Utility Pole
210725039	2021	3/12/2021	1623	B	9. Fixed Object - Off Road	1. No Adverse Condition (Clear/Cloudy)	2. Daylight	1. Dry	1. Straight - Level	2. Trees
211995033	2021	7/18/2021	2030	O	9. Fixed Object - Off Road	1. No Adverse Condition (Clear/Cloudy)	5. Darkness - Road Not Lighted	7. Other	1. Straight - Level	3. Utility Pole
220835319	2022	3/24/2022	1846	O	9. Fixed Object - Off Road	1. No Adverse Condition (Clear/Cloudy)	2. Daylight	2. Wet	2. Curve - Level	2. Trees
223145434	2022	11/10/2022	1800	O	10. Deer	1. No Adverse Condition (Clear/Cloudy)	5. Darkness - Road Not Lighted	1. Dry	1. Straight - Level	23. Animal
222215205	2022	8/9/2022	1030	O	8. Non-Collision	1. No Adverse Condition (Clear/Cloudy)	2. Daylight	1. Dry	3. Grade - Straight	30. Overturn (Rollover)
220685038	2022	3/8/2022	130	O	9. Fixed Object - Off Road	5. Rain	5. Darkness - Road Not Lighted	2. Wet	3. Grade - Straight	5. Guard Rail

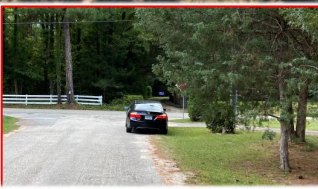
Appendix C
Short-Term Detailed Intersection
Recommendation Sketches



Replace wooden post with square tube post

Old Gun Rd







STOP



Shrub blocking sight distance

Silbyrd Dr

Legend

- Proposed retroreflective strips on signposts 
- Proposed double yellow striping 
- Proposed stop bar 
- Proposed sign 
- Existing sign 
- Tree trimming needed 








***Pavement marking on Silbyrd Drive only installed after repaving**



Old Gun Rd



Legend

- Proposed retroreflective strips on signposts 
- Proposed double yellow striping 
- Proposed stop bar 
- Proposed sign 
- Existing sign 
- Replace existing sign 
- Tree trimming needed 












Old Gun Rd

Oak Glade Dr

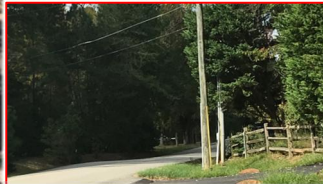
Legend

- Proposed retroreflective strips on signposts 
- Proposed double yellow striping 
- Proposed stop bar 
- Proposed sign 
- Existing sign 
- Replace existing sign 
- Tree trimming needed 










Legend

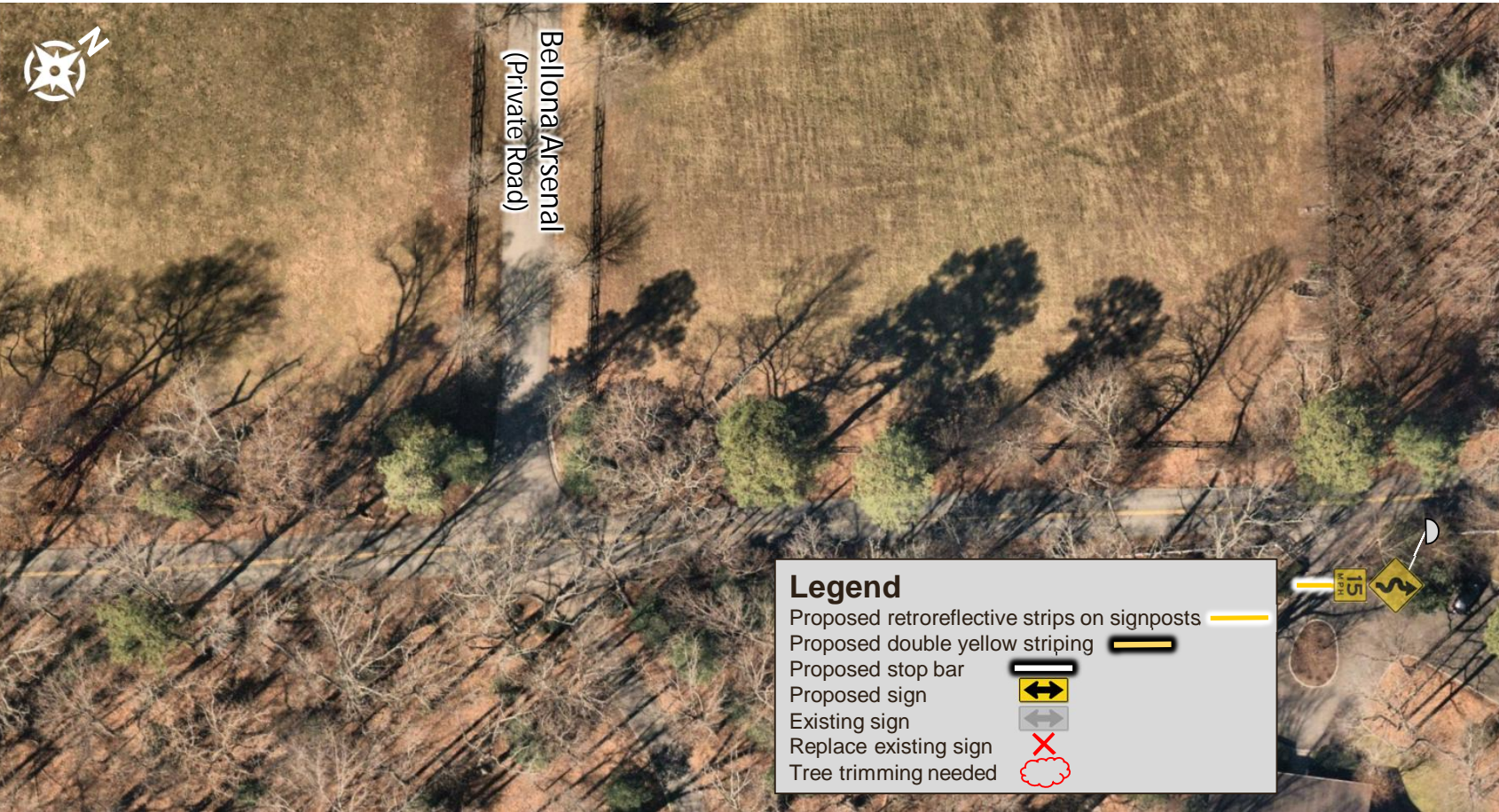
- Proposed retroreflective strips on signposts
- Proposed double yellow striping
- Proposed stop bar
- Proposed sign
- Existing sign
- Replace existing sign
X
- Tree trimming needed












Legend

- Proposed retroreflective strips on signposts 
- Proposed double yellow striping 
- Proposed stop bar 
- Proposed sign 
- Existing sign 
- Replace existing sign 
- Tree trimming needed 



Bellona Arsenal
(Private Road)








Legend

- Proposed retroreflective strips on signposts 
- Proposed double yellow striping 
- Proposed stop bar 
- Proposed sign 
- Existing sign 
- Replace existing sign 
- Tree trimming needed 

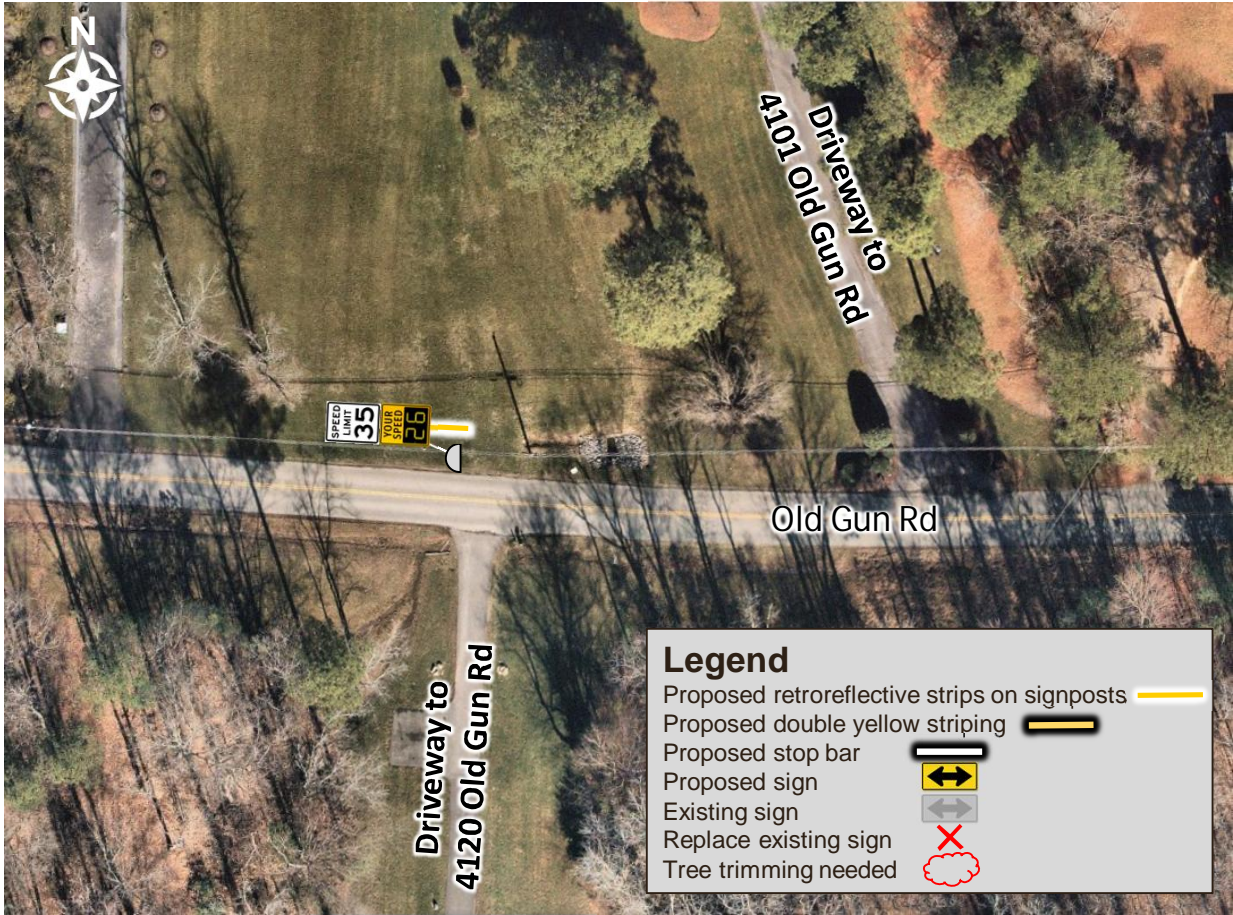




Legend

- Proposed retroreflective strips on signposts 
- Proposed double yellow striping 
- Proposed stop bar 
- Proposed sign 
- Existing sign 
- Replace existing sign 
- Tree trimming needed 










Old Gun Rd

Hinshaw Dr

Legend

- Proposed retroreflective strips on signposts 
- Proposed double yellow striping 
- Proposed stop bar 
- Proposed sign 
- Existing sign 
- Replace existing sign 
- Tree trimming needed 



Trees block sight distance





Old Gun Rd

Reeds Landing Rd
(Private Road)

Reeds Landing Rd
(Private Road)

Arsenal Dr

100'



Trees block speed limit sign

Legend

- Proposed retroreflective strips on signposts
- Proposed double yellow striping
- Proposed stop bar
- Proposed sign
- Existing sign
- Replace existing sign
- Tree trimming needed

Appendix D

Cost Estimates

Intermediate-Term Cost Estimate

Old Gun Road
Opinion of Probable Project Costs - 9/2023
Non-inflated Costs are in FY2023 Dollars

Item	VDOT Item Code	Description	Unit	Quantity	Unit Cost	Extension
Mobilization Items						
1		Mobilization	LS	1	\$ 201,000	\$ 201,000
2		CN Surveying	LS	1	\$ 20,000	\$ 20,000
		MOBILIZATION SUB-TOTAL				\$ 221,000
Maintenance of Traffic (MOT) Items						
3		Maintenance of Traffic	LS	1	\$ 151,000	\$ 151,000
		MAINTENANCE OF TRAFFIC (MOT) SUB-TOTAL				\$ 151,000
		Allowances for Unknown Items (Lack of Granularity)	LS	1	\$ -	\$ -
		Unidentified Risk	LS	1	\$ -	\$ -
Roadway Items						
4	16360	ASPHALT CONC. TY. SM-12.5E	TON	4474	\$ 104.65	\$ 468,210
5	16522	FLEXIBLE PAVEMENT PLANING 0" - 2"	SY	36784	\$ 1.62	\$ 59,600
6	16368	PAVEMENT SHOULDER WEDGE PREP	LF	19606	\$ 0.20	\$ 3,930
7	00110	CLEARING AND GRUBBING	LS	1	\$ 50,000	\$ 50,000
8	16242	AGGR. BASE MATL. TY. I OR II NO. 21A or 21B	TON	1470	\$ 38	\$ 55,860
9						\$ -
10						\$ -
11						\$ -
12						\$ -
13						\$ -
14						\$ -
15						\$ -
16						\$ -
17						\$ -
18						\$ -
		ROADWAY SUB-TOTAL				\$ 637,600
		Allowance for Unknown Items (Lack of Granularity)	LS	1	\$ -	\$ -
		Unidentified Risk	LS	1	\$ -	\$ -
Hydraulics Items						
19		Storm Sewer Pipe 18"	LF			\$ -
20		Drop Inlets and Manholes	EA			\$ -
21		Underdrain UD-2	LF			\$ -
22		Bioretention Basin	EA			\$ -
23		SWM/BMP Facilities	LS			\$ -
24		Underdrain UD-4	LF			\$ -
25		Underdrain UD-2	LF			\$ -
26		Allowance - Erosion and Sediment Control	LS			\$ -
		HYDRAULICS SUB-TOTAL				\$ -
		Allowance for Unknown Items (Lack of Granularity)	LS		\$ -	\$ -
		Unidentified Risk	LS		\$ -	\$ -
In-Plan Utilities Items						
27		In-Plan (Wet) Utilities	LS		\$ -	\$ -
		IN-PLAN UTILITIES SUB-TOTAL				\$ -
		Allowance for Unknown Items (Lack of Granularity)	LS		\$ -	\$ -
		Unidentified Risk	LS		\$ -	\$ -
Traffic Items						
28	54032	TYPE B CLASS I PVMT LINE MRKG 4"	LF	69696	\$ 1.13	\$ 78,756
29			EA			\$ -
30			EA			\$ -
31			LS			\$ -
		TRAFFIC SUB-TOTAL				\$ 78,756
		Allowance for Unknown Items (Lack of Granularity)	LS	1	\$ -	\$ -
		Unidentified Risk	LS	1	\$ -	\$ -

Structures/Bridges Items						
32			LS		\$ -	\$ -
		STRUCTURES/BRIDGES SUB-TOTAL				\$ -
		Allowance for Unknown Items (Lack of Granularity)	LS		\$ -	\$ -
		Unidentified Risk	LS		\$ -	\$ -
Earthwork/Materials Items						
33	00120	Regular Excavation	CY	726	\$ 45.05	\$ 32,720
34	27102	REGULAR SEED	LB	45	\$ 41.16	\$ 1,860
		EARTHWORK/MATERIALS SUB-TOTAL				\$ 34,580
		Allowance for Unknown Items (Lack of Granularity)	LS	1	\$ 10,380	\$ 10,380
		Unidentified Risk	LS	1		\$ -
Sound Wall Items						
35		Sound Walls	SF	0		\$ -
		SOUND WALL SUB-TOTAL				\$ -
		Allowance for Unknown Items (Lack of Granularity)	LS		\$ -	\$ -
		Unidentified Risk	LS		\$ -	\$ -
Other Items						
36		Landscaping	LS			\$ -
37		Roadside Development	LS			\$ -
		OTHER SUB-TOTAL				\$ -
		Allowance for Unknown Items (Lack of Granularity)	LS	1	\$ -	\$ -
		Unidentified Risk	LS	1	\$ -	\$ -
		MAJOR ITEMS SUBTOTAL				\$ 1,122,936
Construction Totals						
		Allowance for Unknown Items (Lack of Granularity)	LS	1	\$ 10,380	\$ 10,380
		Construction Contract Total				\$ 1,133,316
		Unidentified Risk - Roadway	LS	1	\$ -	\$ -
		Unidentified Risk - Bridge	LS		\$ -	\$ -
		Construction Total (Before CEI and Requirements)				\$ 1,133,320
		Incidental Claims & Work Orders (5%)	LS	1	\$ -	\$ -
		Contract Requirements (Incentive/Disinsentive) (5%)	LS	1	\$ -	\$ -
		Construction Engineering & Inspection (20%)	LS	1	\$ 226,663	\$ 226,663
		CEI & Work Order Total				\$ 226,663

Total Construction Phase (in FY2023 Dollars) \$ 1,359,990

Preliminary Engineering						
		Preliminary Engineering				\$ 271,998
		Preliminary Engineering Contingency				\$ 27,200

Total Preliminary Engineering Phase (in FY2023 Dollars) \$ 299,198

Right of Way						
		Utilities				\$ -
		Utilities Contingency				\$ -
		Right of Way	LS			\$ 2,280,000
		Right of Way Contingency				\$ 228,000

Total Right of Way Phase (in FY2023 Dollars) \$ 2,508,000

Total Project Cost in FY2023 Dollars \$ 4,167,188

Inflation 3.0%

Total Project Cost in FY2029 Dollars \$ 4,976,000

Inflation to AD						
		Inflation on PE				\$ 58,071
		Inflation on RW				\$ 486,779
		Inflation on CN				\$ 263,961
		Total Inflation on Project				\$ 808,812

Inflated Project Total (matches EstWkbk) \$ 4,976,000

Safety Improvement Proposal (FY23-27)

[View Read-Me File for methodology for considering multiple CMFs](#)

PROJECT INFORMATION

Agency	Project Sponsor	Address		City	State	Zip
VDOT	Robert Vilak	2430 Pine Forest Rd		Colonial Heights	VA	23834
Email Address	Phone	Priority Number	State Milepoint	VDOT District	VDOT Region	
robert.vilak@vdot.virginia.gov	804.609.5258	N/A	N/A	Richmond	Central	
Program Type	Project Type	Functional Class Code	Area Location Code	Fed. Sys. Code	Study Period Begins	Study Period Ends
Regular	Segment	Rural Collector	Small Urban (5,000 - 49,999)	Non-NHS	5/1/2018	4/30/2023
County	Safety Proposal Location / Route		System	Traffic Control	From / Major Road	To / Cross Street
Chesterfield	Old Gun Road (Route 673) <small>(Include Name)</small>		Secondary	No Traffic Control	Robious Road	City of Richmond corporate limits <small>(RMS Node-Offset If Applicable)</small>

STEP 1 :: CRASH HISTORY (Define crashes by type and severity)

APPLICABLE CRASH TYPE AND SEVERITY

Crash Type Categories	All	Crash Severity						Automated Check	Link to SHSP
		All	Fatal (K)	Incapacitating Injury (A)	Minor Injury (B+C)	Property Damage (O)	Not specified		
Total Crashes	All	34	1	5	5	23	0	Yes	
Primary Crash Categories (sum of all 3 must equal total crashes)									
Roadway Departure or Intersection	Cross median	0	0	0	0	0	0	Yes	
	Fixed object	23	1	2	4	16	0	Yes	
	Head on	1	0	0	0	1	0	Yes	
	Non-Collision	2	0	0	0	2	0	Yes	
	Sideswipe	1	0	1	0	0	0	Yes	✓
	Angle	5	0	2	1	2	0	Yes	
	Left turn	0	0	0	0	0	0	Yes	
	Right turn	0	0	0	0	0	0	Yes	
	Rear end	0	0	0	0	0	0	Yes	
Non-Motorized	Pedestrian	0	0	0	0	0	0	Yes	
	Bicycle	0	0	0	0	0	0	Yes	
Other Crash Types	Animal	1	0	0	0	1	0	Yes	
	Other	1	0	0	0	1	0	Yes	
Secondary Crash Categories									
Environmental Factors	Nighttime	9	0	0	1	8	0	Yes	
	Wet weather	6	0	0	2	4	0	Yes	
Number of Vehicles	Single vehicle	26	1	2	4	19	0	Yes	
	Multiple vehicle	8	0	3	1	4	0	Yes	
Driver Behavior	Speed related	8	1	1	2	4	0	Yes	
	Unbelted	4	1	3	0	0	0	Yes	✓
	Alcohol related	2	0	1	0	1	0	Yes	
Automated Check (i.e., does total crashes match the sum of RD, INT, and NM crash types?)									
	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
	Number of years in crash history:		5	Discount Rate:		3%			

[View Read-Me File for methodology for considering multiple CMFs](#)

STEP 2 :: COST (Compute the economic cost of each improvement)

Proposed Improvement	Service Life	PE Cost + \$5000 (*)	Right-of-Way & Utility Cost	Construction Cost	Total Construction Cost (PV)	Contingency (10%)	Annual Maintenance	Maintenance Cost (PV)	Total Cost (PV)
Add shoulder wedge/safety edge	15	\$357,269	\$2,994,779	\$1,623,951	\$4,975,999	\$162,395	\$0	\$0	\$5,138,394
					\$0	\$0	\$0	\$0	\$0
					\$0	\$0		\$0	\$0

STEP 3 :: BENEFIT (Compute the economic benefit of each improvement)

Proposed Improvement	CMF Value	Applicable Crash Type	Applicable Crash Severity Type	Include CMF in Final Analysis? (Yes/No)	Reference Link to CMF ID from CMF Clearinghouse	Other Notes
Add shoulder wedge/safety edge	0.79	Fixed object	All	Yes		
0						
0						

STEP 4 :: B/C RATIO (Compute the B/C ratio for specific combinations of CMFs)

Proposed Improvement	Include in Analysis? (Yes/No)	Present Value of Benefit	Present Value of Cost	B/C by CMF	B/C Ratio	Annual Estimated Lives Saved and Injuries Prevented	Other Notes
Add shoulder wedge/safety edge	Yes	\$6,925,628	\$5,138,394	1.35		1	1. VDOT District and Central Office personnel charge review and administration time to project managed by localities. Safety Projects not managed by VDOT shall include a minimum of \$5,000 for VDOT PE costs.
0	Yes	\$0	\$0	#DIV/0!	1.35	0	
0	Yes	\$0	\$0	#DIV/0!		0	

PROJECT SCHEDULE (AFTER STIP APPROVAL)

Begin PE	Target Advert.	Begin Construction	Estimated Complete Date	Type of Plan	Project Administered By

SIGNATURE OF SPONSOR

Please submit an electronic copy of this spreadsheet and a scanned digital copy with signature to HSPProgram@virginiadot.org. Paper copies of reference materials may be mailed Attn: HSP BCR Improvement Proposal Mr. Raymond Khoury, P.E., State Traffic Engineer, Virginia Department of Transportation 1401 East Broad Street, Richmond, Virginia 23219.

Name (Print): _____
Signature: _____ Date: _____

Long-Term Cost Estimate

Old Gun Road
Opinion of Probable Project Costs - 9/2023
Non-inflated Costs are in FY2023 Dollars

Item	VDOT Item Code	Description	Unit	Quantity	Unit Cost	Extension
Mobilization Items						
1		Mobilization	LS	1	\$ 292,000	\$ 292,000
2		CN Surveying	LS	1	\$ 56,000	\$ 56,000
		MOBILIZATION SUB-TOTAL				\$ 348,000
Maintenance of Traffic (MOT) Items						
3		Maintenance of Traffic	LS	1	\$ 449,000	\$ 449,000
		MAINTENANCE OF TRAFFIC (MOT) SUB-TOTAL				\$ 449,000
		Allowances for Unknown Items (Lack of Granularity)	LS	1	\$ -	\$ -
		Unidentified Risk	LS	1	\$ -	\$ -
Roadway Items						
4	16360	ASPHALT CONC. TY. SM-12.5E	TON	6158	\$ 104.65	\$ 644,440
5	16522	FLEXIBLE PAVEMENT PLANING 0" - 2"	SY	52272	\$ 1.62	\$ 84,690
6	16368	PAVEMENT SHOULDER WEDGE PREP	LF	19606	\$ 0.20	\$ 3,930
7	00110	CLEARING AND GRUBBING	LS	1	\$ 500,000	\$ 500,000
8	16242	AGGR. BASE MATL. TY. I OR II NO. 21A or 21B	TON	23527	\$ 38	\$ 894,030
9						\$ -
10						\$ -
11						\$ -
12						\$ -
13						\$ -
14						\$ -
15						\$ -
16						\$ -
17						\$ -
18						\$ -
		ROADWAY SUB-TOTAL				\$ 2,127,090
		Allowance for Unknown Items (Lack of Granularity)	LS	1	\$ -	\$ -
		Unidentified Risk	LS	1	\$ -	\$ -
Hydraulics Items						
19		Storm Sewer Pipe 18"	LF			\$ -
20		Drop Inlets and Manholes	EA			\$ -
21		Underdrain UD-2	LF			\$ -
22		Bioretention Basin	EA			\$ -
23		SWM/BMP Facilities	LS			\$ -
24		Underdrain UD-4	LF			\$ -
25		Underdrain UD-2	LF			\$ -
26		Allowance - Erosion and Sediment Control	LS			\$ -
		HYDRAULICS SUB-TOTAL				\$ -
		Allowance for Unknown Items (Lack of Granularity)	LS		\$ -	\$ -
		Unidentified Risk	LS		\$ -	\$ -
In-Plan Utilities Items						
27		In-Plan (Wet) Utilities	LS		\$ -	\$ -
		IN-PLAN UTILITIES SUB-TOTAL				\$ -
		Allowance for Unknown Items (Lack of Granularity)	LS		\$ -	\$ -
		Unidentified Risk	LS		\$ -	\$ -
Traffic Items						
28	54032	TYPE B CLASS I PVMT LINE MRKG 4"	LF	69696	\$ 1.13	\$ 78,756
29			EA			\$ -
30			EA			\$ -
31			LS			\$ -
		TRAFFIC SUB-TOTAL				\$ 78,756
		Allowance for Unknown Items (Lack of Granularity)	LS	1	\$ -	\$ -
		Unidentified Risk	LS	1	\$ -	\$ -

Structures/Bridges Items						
32			LS		\$ -	\$ -
		STRUCTURES/BRIDGES SUB-TOTAL				\$ -
		Allowance for Unknown Items (Lack of Granularity)	LS		\$ -	\$ -
		Unidentified Risk	LS		\$ -	\$ -
Earthwork/Materials Items						
33	00120	Regular Excavation	CY	726	\$ 45.05	\$ 32,720
34	27102	REGULAR SEED	LB	45	\$ 41.16	\$ 1,860
		EARTHWORK/MATERIALS SUB-TOTAL				\$ 34,580
		Allowance for Unknown Items (Lack of Granularity)	LS	1	\$ 10,380	\$ 10,380
		Unidentified Risk	LS	1		\$ -
Sound Wall Items						
35		Sound Walls	SF	0		\$ -
		SOUND WALL SUB-TOTAL				\$ -
		Allowance for Unknown Items (Lack of Granularity)	LS		\$ -	\$ -
		Unidentified Risk	LS		\$ -	\$ -
Other Items						
36		Landscaping	LS			\$ -
37		Roadside Development	LS			\$ -
		OTHER SUB-TOTAL				\$ -
		Allowance for Unknown Items (Lack of Granularity)	LS	1	\$ -	\$ -
		Unidentified Risk	LS	1	\$ -	\$ -
		MAJOR ITEMS SUBTOTAL				\$ 3,037,426
Construction Totals						
		Allowance for Unknown Items (Lack of Granularity)	LS	1	\$ 10,380	\$ 10,380
		Construction Contract Total				\$ 3,047,806
		Unidentified Risk - Roadway	LS	1	\$ -	\$ -
		Unidentified Risk - Bridge	LS		\$ -	\$ -
		Construction Total (Before CEI and Requirements)				\$ 3,047,810
		Incidental Claims & Work Orders (5%)	LS	1	\$ -	\$ -
		Contract Requirements (Incentive/Disinsentive) (5%)	LS	1	\$ -	\$ -
		Construction Engineering & Inspection (20%)	LS	1	\$ 609,561	\$ 609,561
		CEI & Work Order Total				\$ 609,561

Total Construction Phase (in FY2023 Dollars) \$ 3,657,380

Preliminary Engineering						
		Preliminary Engineering				\$ 731,476
		Preliminary Engineering Contingency				\$ 73,148

Total Preliminary Engineering Phase (in FY2023 Dollars) \$ 804,624

Right of Way						
		Utilities				\$ -
		Utilities Contingency				\$ -
		Right of Way	LS			\$ 4,600,000
		Right of Way Contingency				\$ 460,000

Total Right of Way Phase (in FY2023 Dollars) \$ 5,060,000

Total Project Cost in FY2023 Dollars \$ 9,522,004

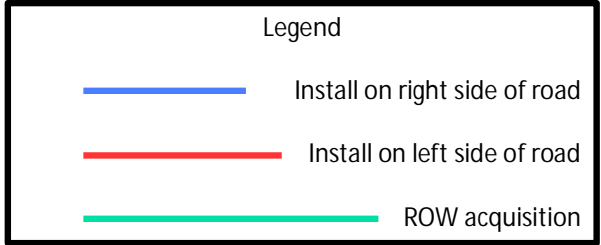
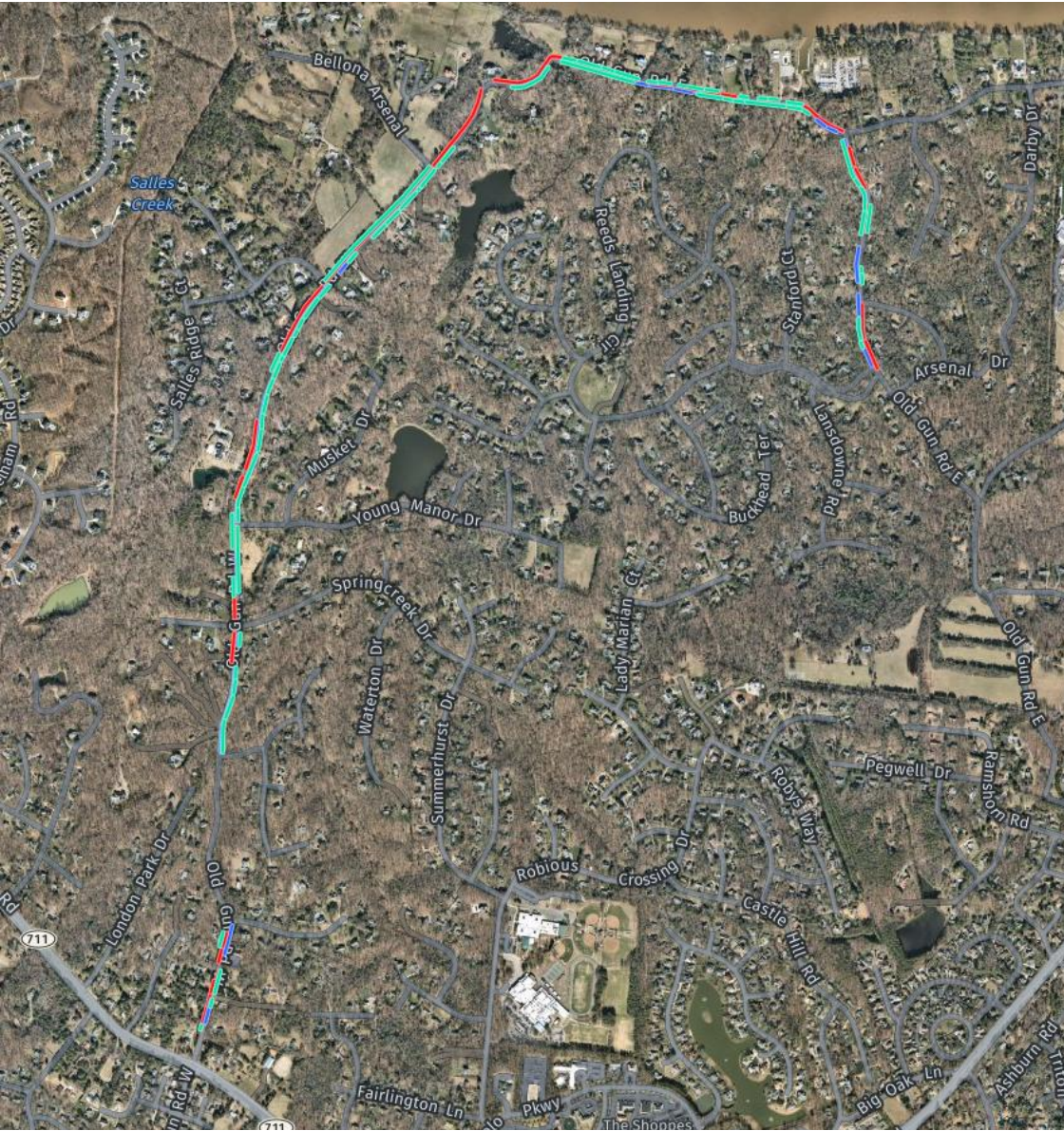
Inflation 3.0%

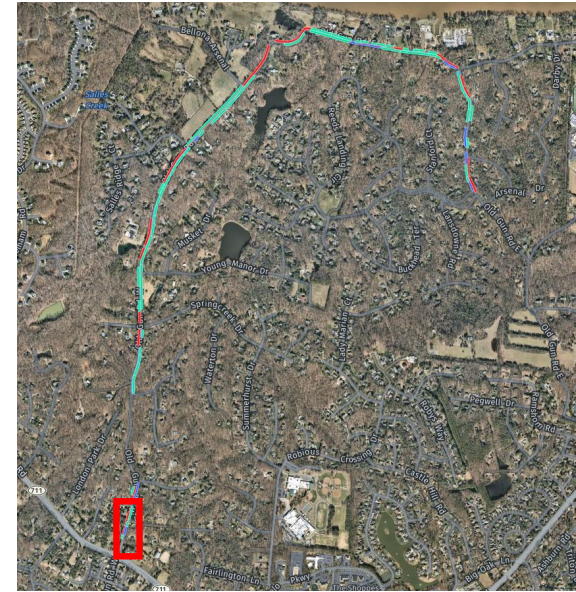
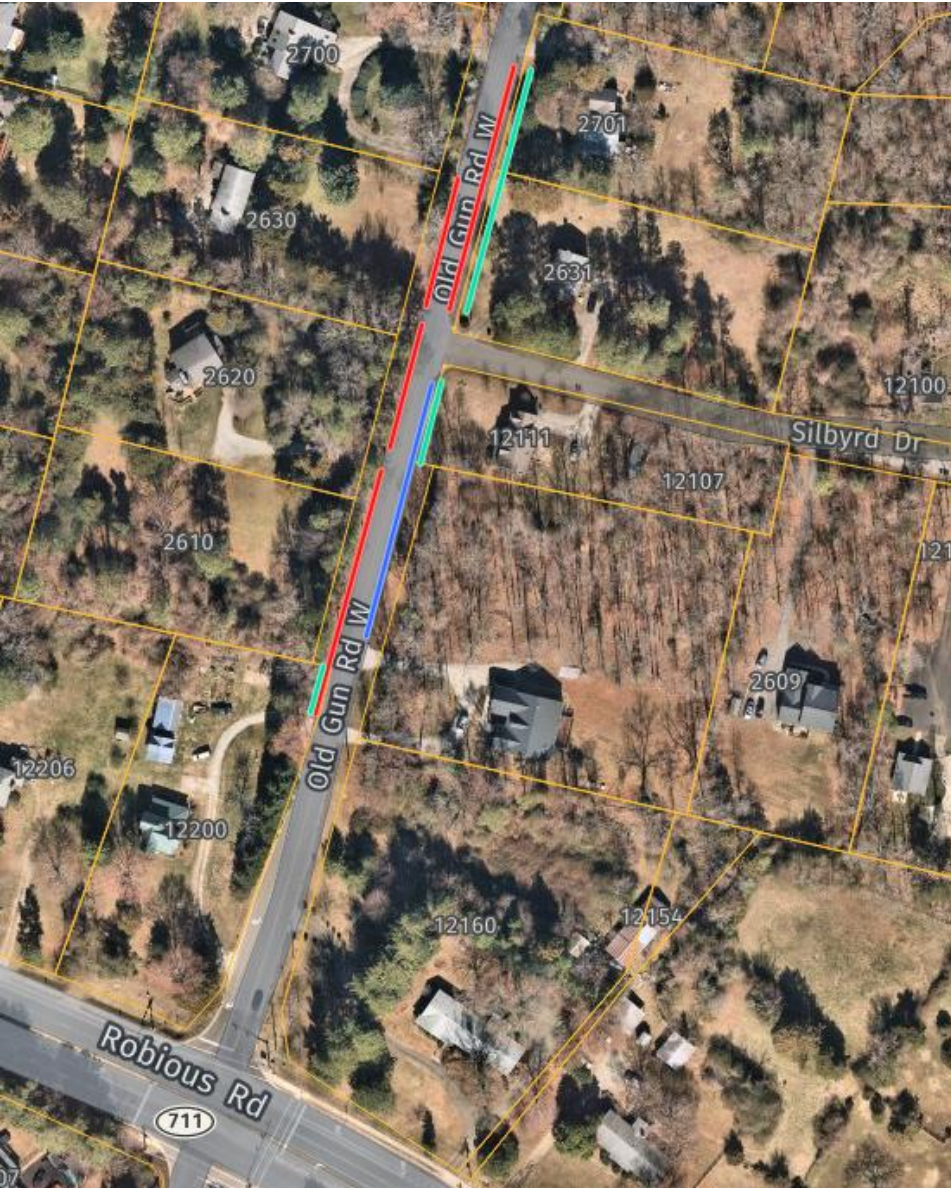
Total Project Cost in FY2033 Dollars \$ 12,797,000

Inflation to AD						
		Inflation on PE				\$ 276,742
		Inflation on RW				\$ 1,740,336
		Inflation on CN				\$ 1,257,919
		Total Inflation on Project				\$ 3,274,996

Inflated Project Total (matches EstWkbbk) \$ 12,797,000

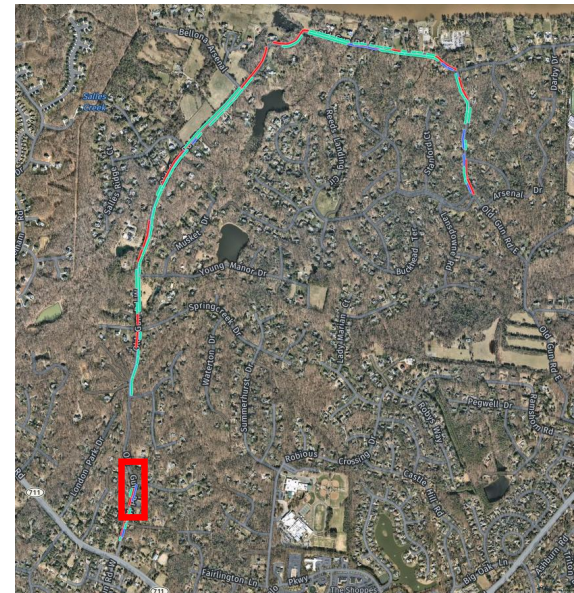
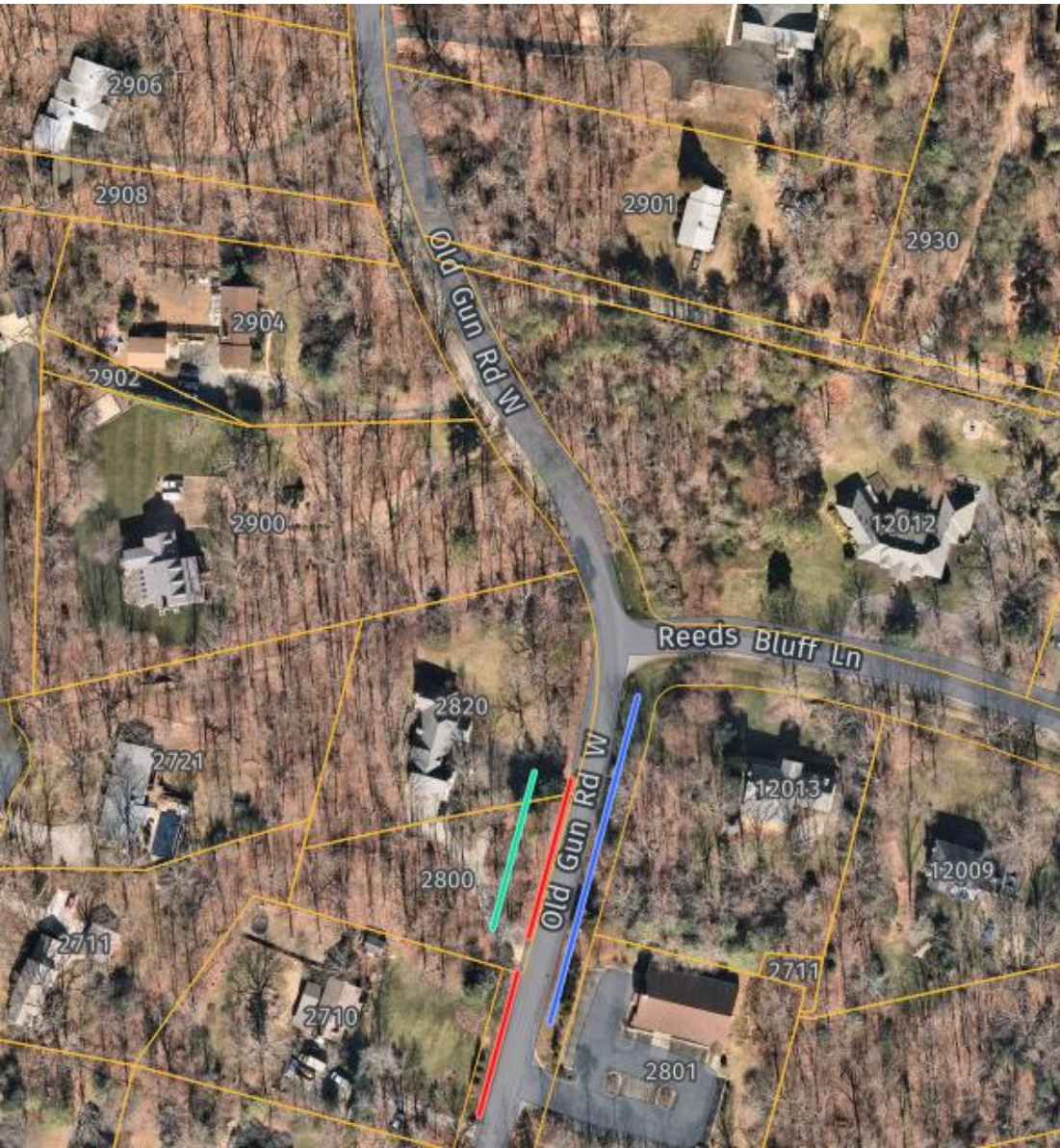
Proposed Shoulder Wedge Implementation Documentation





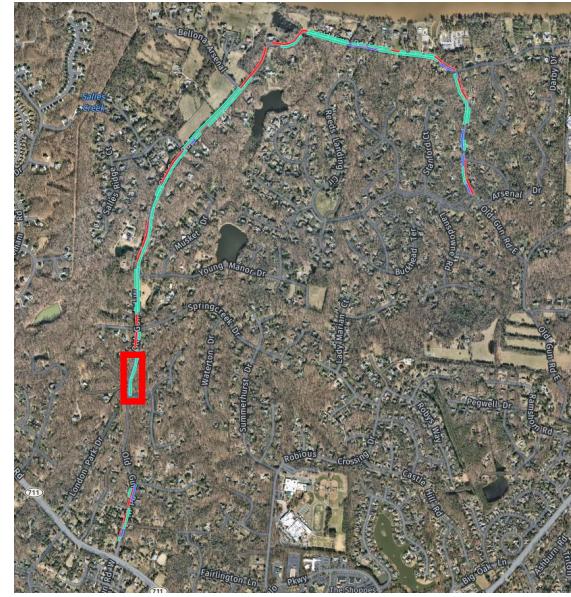
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- Install on right side of road
- Install on left side of road
- ROW acquisition



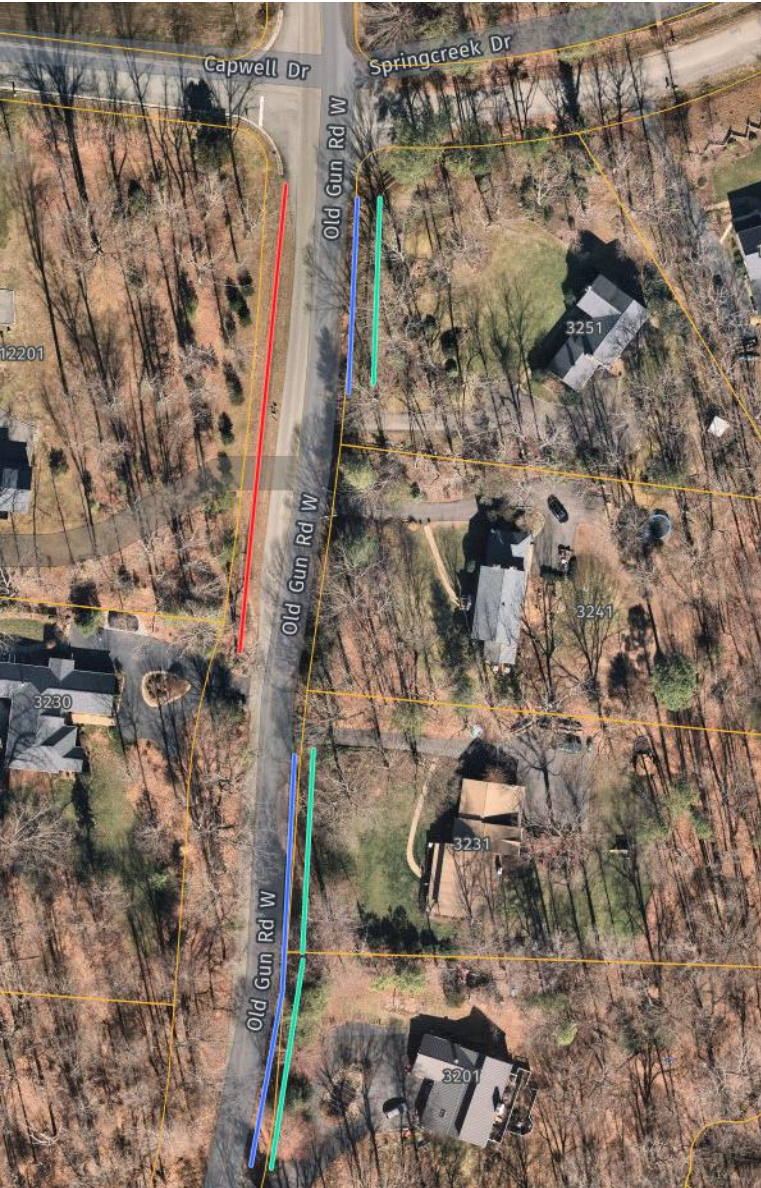
Legend

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- ROW acquisition



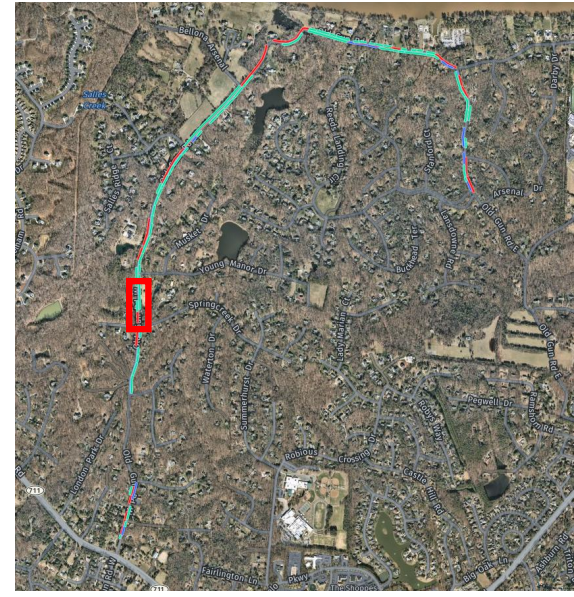
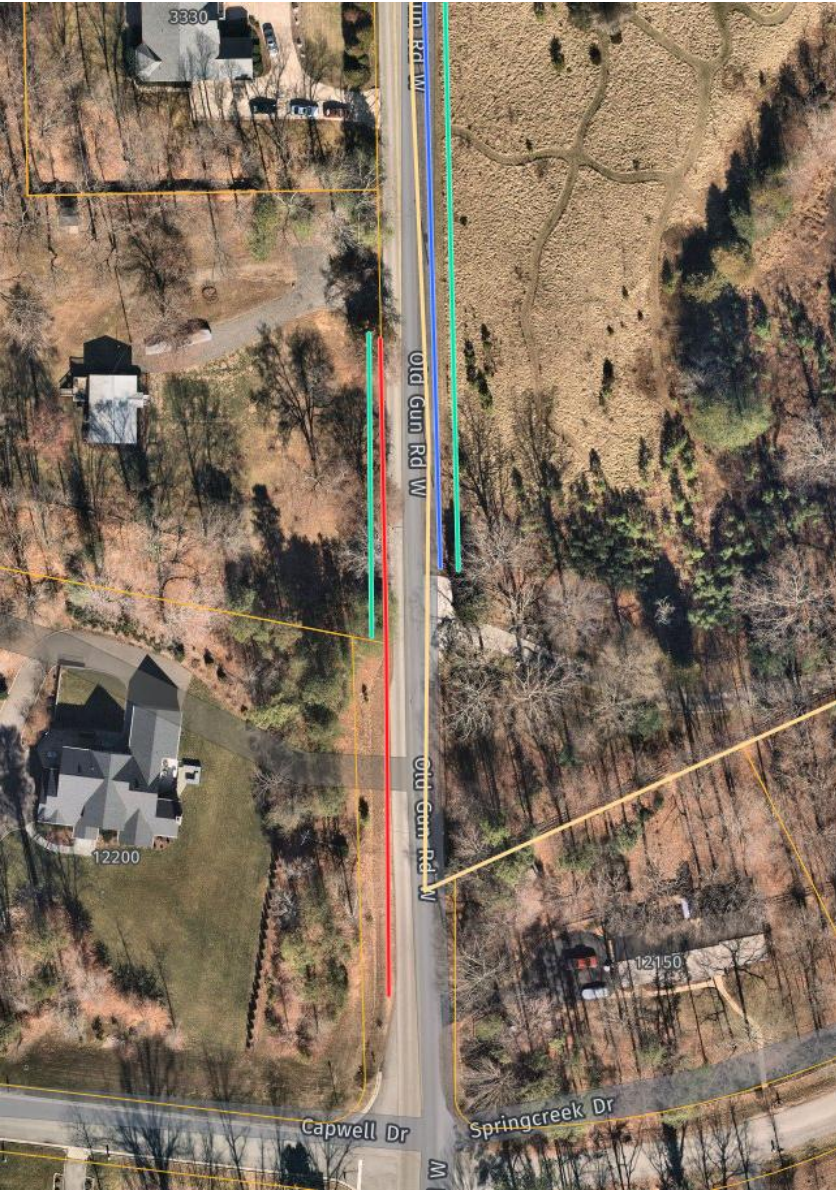
Legend

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- Install on left side of road
- ROW acquisition



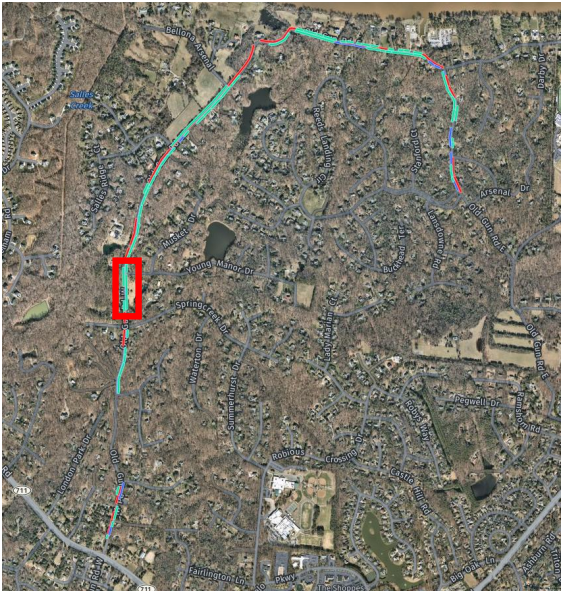
Legend

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- Install on left side of road
- ROW acquisition



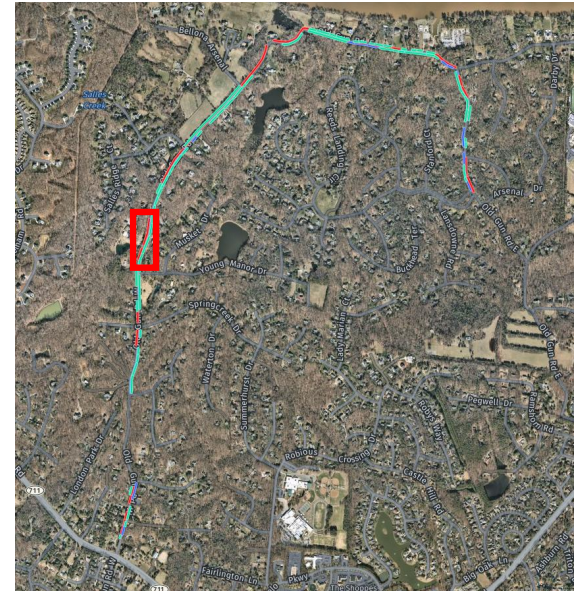
Legend

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- Install on left side of road
- ROW acquisition



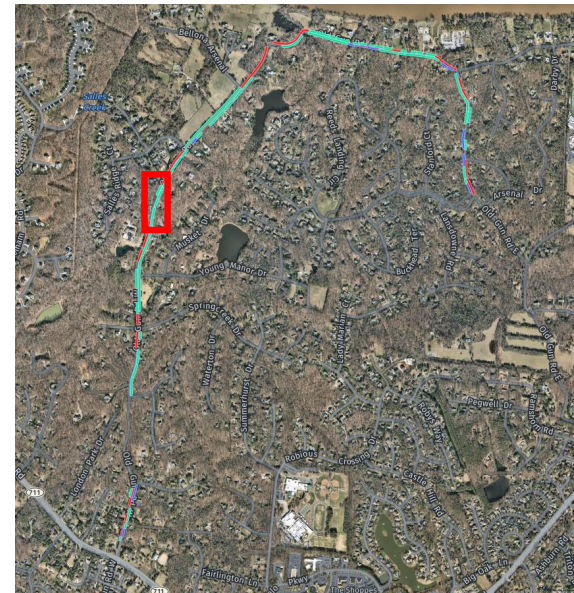
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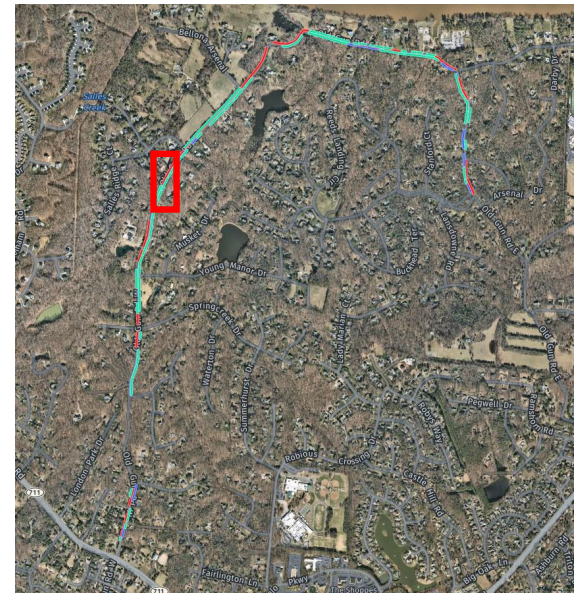
Legend

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- Install on left side of road
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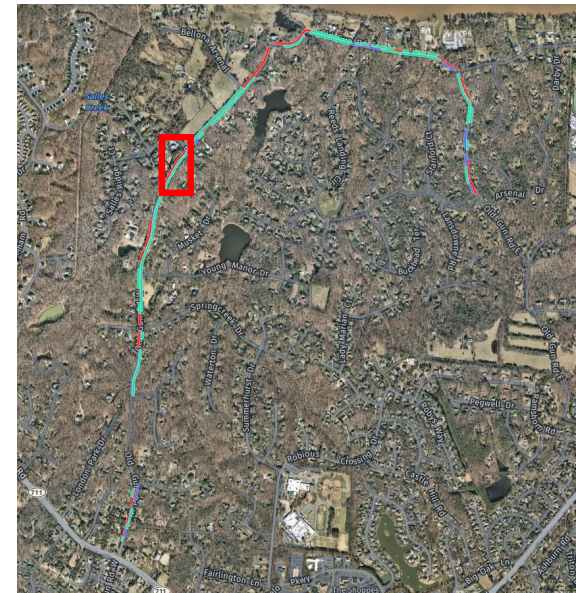
Legend

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- Install on left side of road
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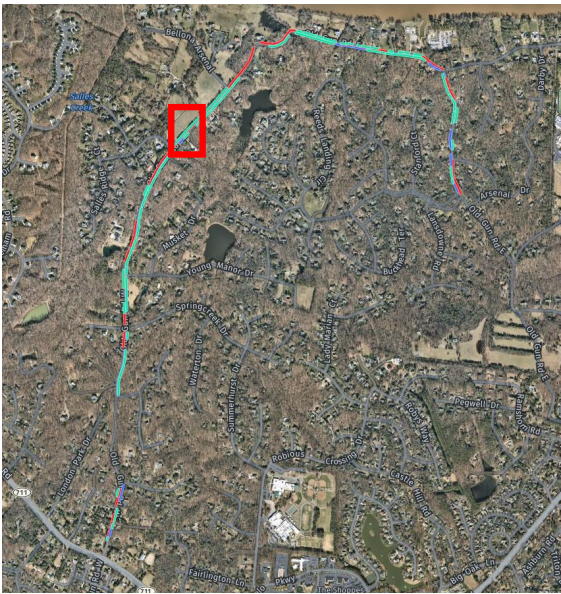
Legend

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- Install on left side of road
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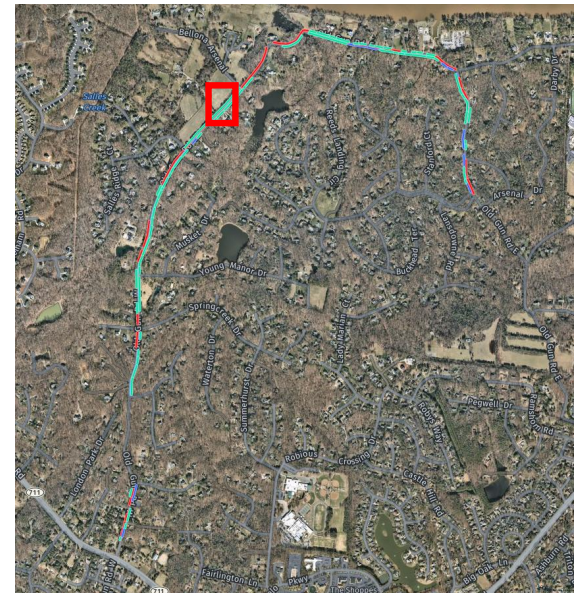
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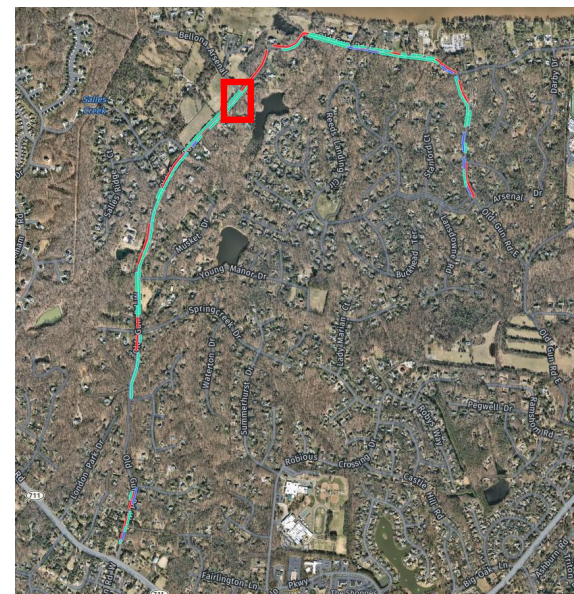
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- Install on left side of road
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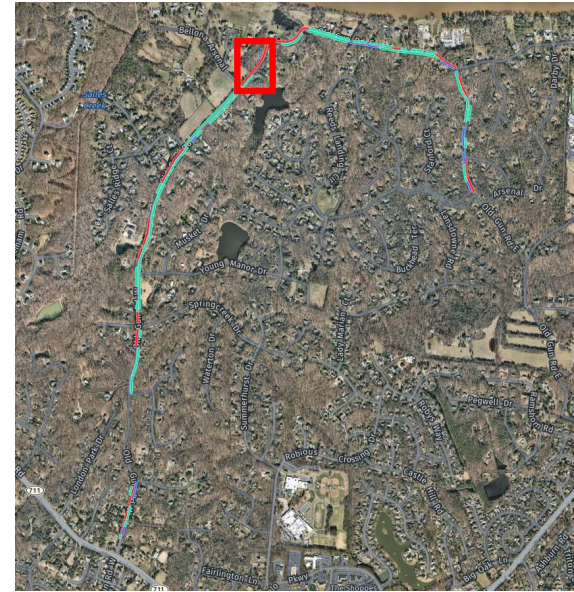
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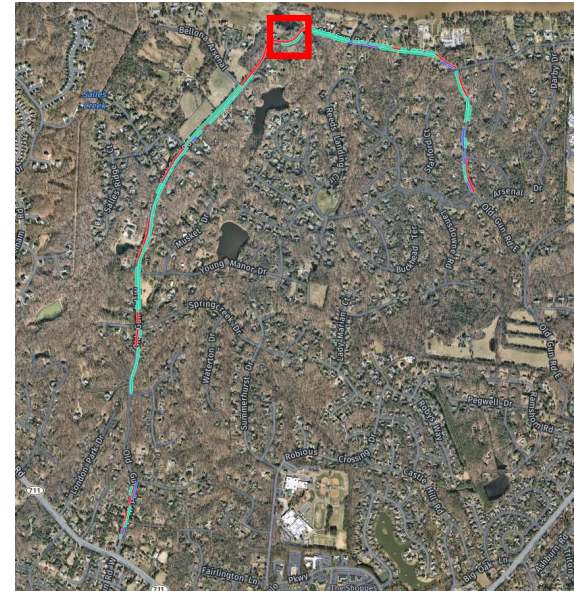
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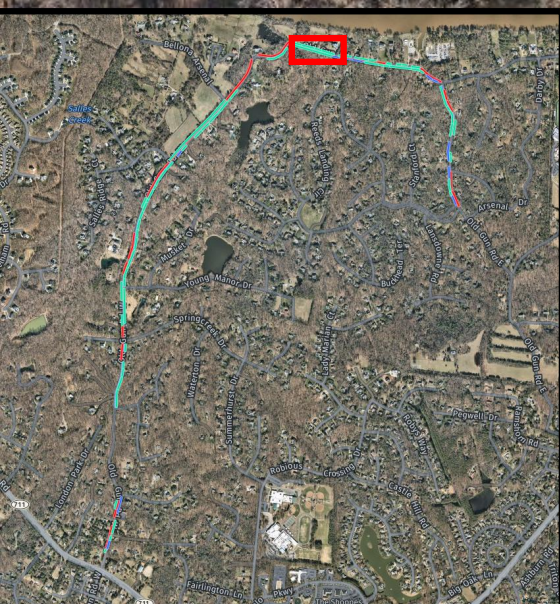
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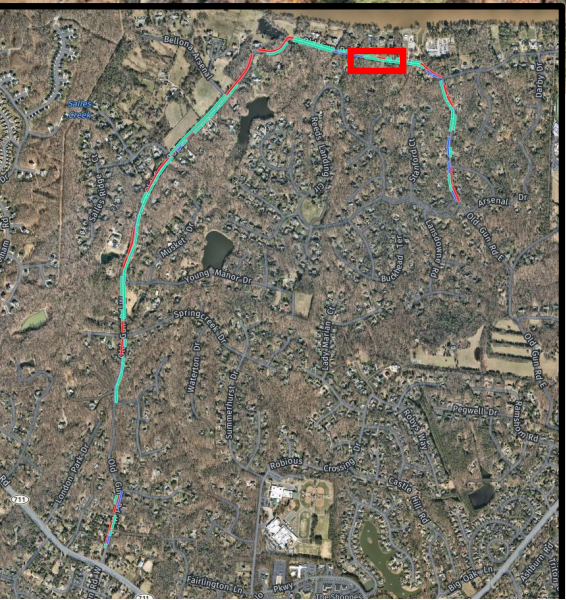
Legend

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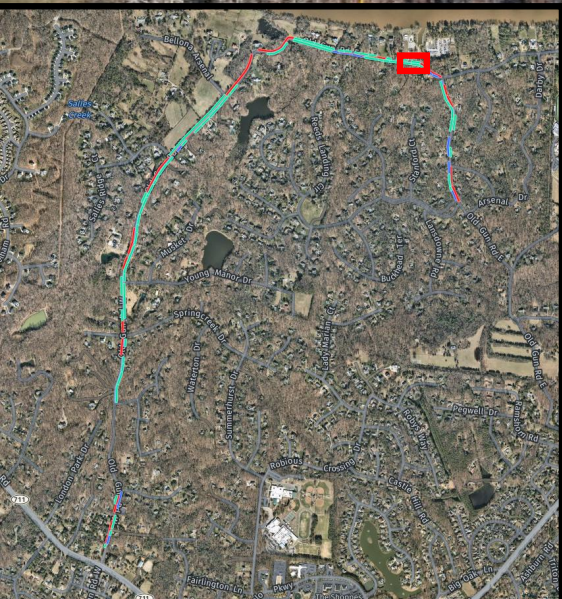
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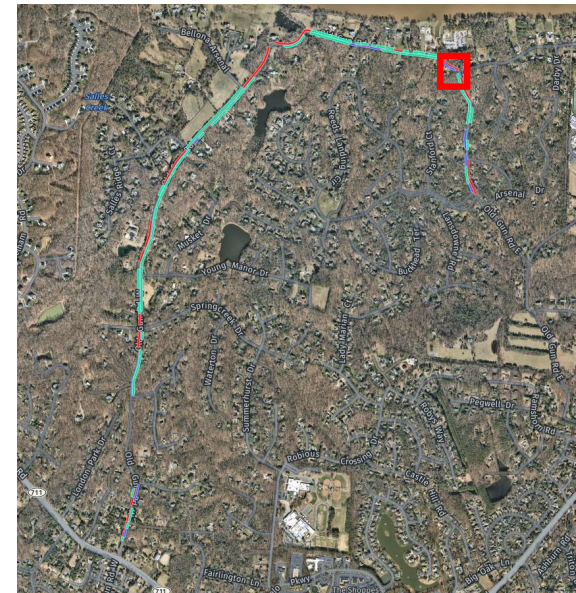
Legend

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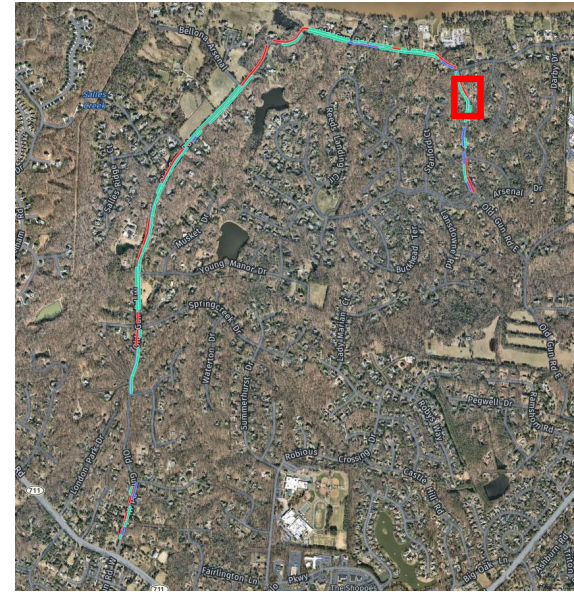
Legend

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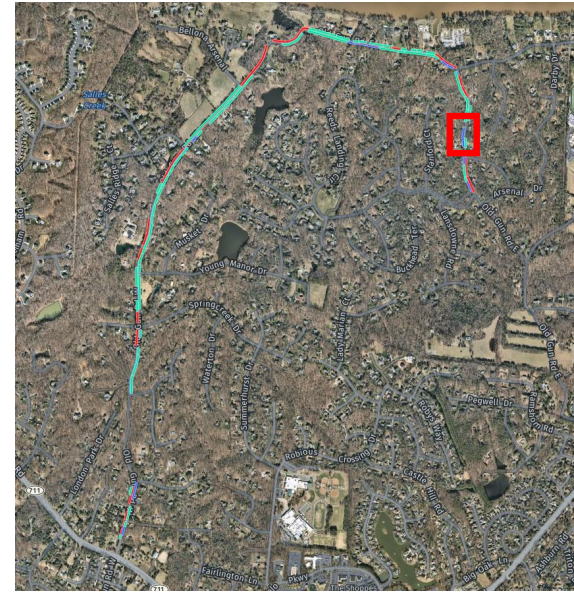
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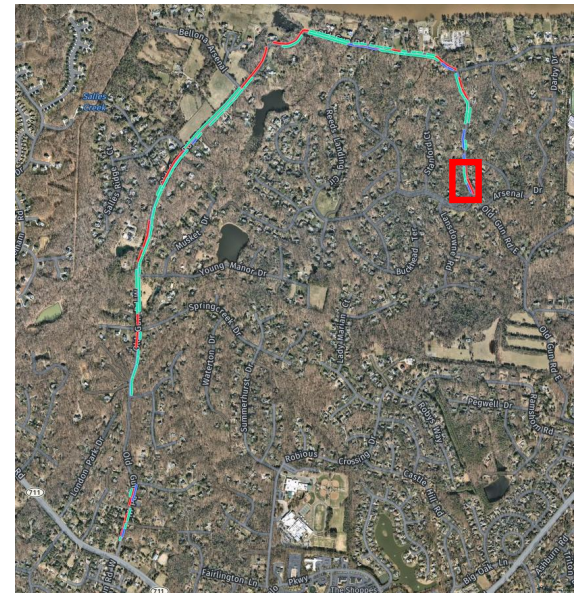
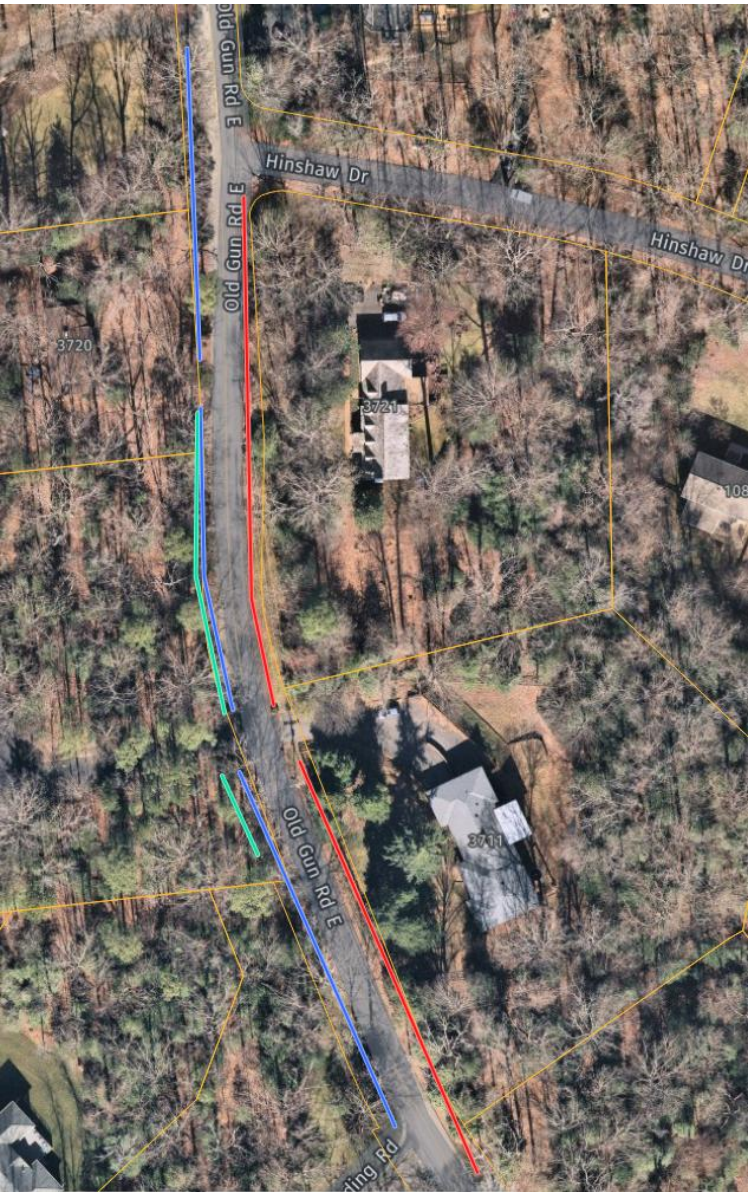
Legend

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- Install on left side of road
- ROW acquisition



Legend

-  Install on right side of road
-  Install on left side of road
-  ROW acquisition



Legend

- Install on right side of road
- Install on left side of road
- ROW acquisition