

***Road Safety Audit-
Transportation Analysis***

**US 17 at Seeweee Road/
Fifteen Mile Landing Road
Charleston County, SC**

Prepared for:
Charleston County

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Charleston County**

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1.0 Executive Summary

This report summarizes the transportation analysis for the Road Safety Audit (RSA) performed at the intersection of US 17 at Seewee Road/Fifteen Mile Landing Road in Charleston County, South Carolina. Per the Federal Highway Administration (FHWA), an RSA “*is the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users. The FHWA works with State and local jurisdictions and Tribal Governments to integrate RSAs into the project development process for new roads and intersections, and also encourages RSAs on existing roads and intersections*” (FHWA Road Safety Audits, October 15, 2014). The RSA includes analysis of the intersection of US 17 at Seewee Road/Fifteen Mile Landing Road for transportation improvements and safety improvements, including analysis of the 2022 Existing conditions and four alternatives for the design year 2025 Build conditions.

Crash data was provided by the South Carolina Department of Public Safety (SCDPS) for the 11-year period from January 2010 through December 2021 for the intersection of US 17 at Seewee Road/Fifteen Mile Landing Road. The South Carolina Department of Transportation (SCDOT) Safety Office provided supplemental information. The majority of the crashes at the intersection were angle (46%) and rear end (24%) crashes. The one fatal crash at the intersection during the study period was an angle crash due to a driver failing to yield the right-of-way.

Currently, the unsignalized intersection of US 17 at Seewee Road/Fifteen Mile Landing Road operates acceptably during the AM, Midday, and PM peak hours.

The project team developed four conceptual alternatives for the intersection of US 17 at Seewee Road/Fifteen Mile Landing Road:

- Alternative 1: Pavement Markings/Signage Upgrades
- Alternative 2: Restriction of Mainline Left Turns
- Alternative 3: Conversion of the intersection to a Reduced Conflict Intersection (RCI)
- Alternative 4: Signalization of Intersection

The intersection is shown to operate at LOS D or better for all four alternatives in the 2025 Build conditions.

The project team developed the following projected planning level costs. These costs should be considered approximate and are for planning purposes only.

- Alternative 1: \$167,000
- Alternative 2: \$885,000
- Alternative 3: \$490,000
- Alternative 4: \$540,000

Alternative 1 is recommended in the short term to enhance safety at the intersection. Based on the results of the transportation analysis, due to a combination of its constructability, projected operations, queuing, and likelihood of decreasing the severity and frequency of angle crashes prevalent at the intersection, Alternatives 2, 3 and 4 all result in improved conditions at the intersection. The following should be considered when reviewing these alternatives.

- Alternative 2
 - The number of conflict points is reduced with the restricted movements
 - US 17 lefts would be rerouted
 - Seewee Road has the highest left-turn movement at the intersection
- Alternative 3
 - The number of conflict points is further reduced with the restricted movements
 - Side street left turns and through movements would be rerouted
- Alternative 4
 - Traffic signal would be located at an isolated rural intersection, therefore appropriate signage, striping, and lighting would be required
 - SCDOT may require the installation of a westbound left-turn lane on Seewee Road approach prior to considering signalization. With the installation of the left-turn lane, this would likely extend the timeframe of when the location is projected to meet traffic signal warrants.
 - National Cooperative Highway Research Program Report 500 – Guidance for Implementation of the AASHTO Strategic Highway Safety Plan – Volume 5: A Guide for Addressing Unsignalized Intersection Collisions (Transportation Research Board of the National Academies, 2003), notes that "before a decision to install a signal is made, adequate consideration should be given to less restrictive forms of traffic control."
 - Provides a controlled bicycle and pedestrian crossing

Further discussion with SCDOT is recommended regarding the future year improvement alternatives.

Results in this report are based solely on traffic studies and are considered input into final design considerations. The alternatives analyzed should be considered conceptual in nature. The final design will be determined by the project engineer after other design elements (such as, but not limited to, utilities, stormwater, etc.) are taken into consideration and should meet SCDOT design standards.

2.0 Introduction

This report summarizes the transportation analysis for the RSA performed at the intersection of US 17 at Seewee Road/Fifteen Mile Landing Road in Charleston County, South Carolina. Per the FHWA, an RSA “is the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users. The FHWA works with State and local jurisdictions and Tribal Governments to integrate RSAs into the project development process for new roads and intersections, and also encourages RSAs on existing roads and intersections” (FHWA Road Safety Audits, October 15, 2014). The RSA includes analysis of the intersection of US 17 at Seewee Road/Fifteen Mile Landing Road for transportation improvements and safety improvements, including analysis of the 2022 Existing conditions and four alternatives for the design year 2025 Build conditions.

3.0 Inventory

3.1 Study Area and Site Visit

The study area for the RSA includes the intersection of US 17 at Seewee Road/Fifteen Mile Landing Road.

During the preliminary site visit, the following items were observed:

- Northbound US 17 right-turn yield sign missing
- Large vehicles including trucks with boat trailers using Seewee Road
- US 17 is a high-speed rural roadway (60 miles per hour)
- Seewee Restaurant driveway is close to the intersection and has a long curb cut with head-in parking on US 17

Figure 1A (Appendix) shows the overall site location. **Figure 1B (Appendix)** shows a zoomed-in aerial of the study area intersection.

3.2 Existing Roadway Conditions

Roadways in the project vicinity include US 17, Seewee Road, and Fifteen Mile Landing Road. **Table 1** shows the SCDOT Average Annual Daily Traffic (AADT) volumes from 2011 - 2021 to determine the growth rate for the intersection. Based on the historic volume data, an overall growth rate of 5.0% per year was used for the study area intersection.

Table 1: SCDOT Average Annual Daily Traffic (AADT) Counts by Year														
Roadway	Road Section		Year											% Growth / Year ¹
	Start	End	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
US 17 (sta. 135)	SC 41	Fifteen Mile Landing Road	28,900	28,900	29,600	26,300	37,300	38,600	39,700	41,200	41,500	38,400	50,400	5.72%
US 17 (sta. 137)	Fifteen Mile Landing Road	Tibwin Road	8,200	9,700	9,400	8,400	9,700	10,400	11,300	11,100	11,800	11,000	10,900	2.89%
Seewee Road (sta. 512)	US 17	Doar Road	1,400	1,700	1,400	1,600	1,300	1,550	1,400	1,550	1,750	1,850	1,500	0.69%
Overall			38,500	40,300	40,400	36,300	48,300	50,550	52,400	53,850	55,050	51,250	62,800	5.01%

1. Percent growth per year calculated using 2011 through 2021 SCDOT AADT.

US 17 is a four-lane, divided, principal arterial roadway with a posted speed limit of 60 miles per hour (mph). Per SCDOT 2021 AADT counts, US 17 experiences approximately 50,400 vehicles per day (vpd) south of Seewee Road/Fifteen Mile Landing Road and approximately 10,900 vpd north of Seewee Road/Fifteen Mile Landing Road. The disparity at this intersection is likely because the segment from SC 41 to Seewee Road is a long segment, with the volume of 50,400 vpd likely occurring closer to Mount Pleasant.

Seewee Road (S-584) is a two-lane, minor collector roadway with a posted speed limit of 55 mph. Per SCDOT 2021 AADT counts, Seewee Rd. experiences approximately 1,500 vpd in the vicinity of the study area.

Fifteen Mile Landing Road (S-584) is a two-lane roadway with no posted speed limit.

Figure 2 (Appendix) shows the existing roadway laneage in the study area.

3.3 Existing Bicycle and Pedestrian Facilities

The East Coast Greenway is a pedestrian and bicyclist route stretching 3,000 miles from Maine to Florida. In the study area, the East Coast Greenway travels on US 17 south of the intersection to/from Seewee Road to the west and then travels along Seewee Road.

US 17 has four-foot shoulders with no marked bike lanes or sidewalks in the vicinity of the study area.

Seewee Road and Fifteen Mile Landing Road also do not have bike lanes or sidewalks in the vicinity of the study area.

3.4 Adjacent Land Uses

On the northwest corner of the intersection of US 17 and Seewee Road/Fifteen Mile Landing Road, Seewee Restaurant has a paved parking lot with head-in parking adjacent to US 17. The other corners of the intersection are currently vacant.

3.5 Transit Facilities

Transit service in the vicinity of the study area is run by TriCounty Link. TriCounty Link has one route in the study area, C203. Route C203 travels to/from S. Pinckney Street/Society Road to/from the Walmart Wando Crossing. Per Berkeley-Charleston-Dorchester Council of Governments (BCDCOG) staff, the route is a flag down service and the ridership in the study area is low.

3.6 Area Roadway Transportation Projects

Currently there are no SCDOT transportation projects underway in the study area.

3.7 SCDOT 2017 Safety Study

A safety study was previously completed by SCDOT in December 2017. This study is included in the **Appendix**. As a result, the following improvements were made:

- Standard signing application for divided highways was applied at to the study area intersection
- New dual intersection warning signs with advance street name plaques and Type XI sheeting was applied
- Intersection was restriped with skip lines along edge of travel way through the intersection
- 175' solid 4" yellow line striped between the two "No Parking Highway Side of Yellow Line" on US 17 by the Seewee Restaurant

3.8 Speed Study

A speed study was previously completed by SCDOT in June 2017 to determine whether a reduction from the existing 60 mph speed limit should be considered. This study is included in the **Appendix**. It was found by SCDOT that the existing speed limit was appropriate for this section of roadway.

4.0 Data Collection

4.1 Turning Movement Counts

Peak hour intersection turning movement counts including vehicular, pedestrian, and heavy vehicle traffic were performed in March 2022 from 7:00 AM to 7:00 PM at the intersection of US 17 at Seewee Road/Fifteen Mile Landing Road.

The turning movement count data is included in the **Appendix** and the AM, Midday, and PM peak hour existing traffic volumes are shown in **Figure 3 (Appendix)**.

4.2 Crash Data

Crash data was provided for the project study area by the SCDPS for the 11-year period from January 2010 through December 2021 at the intersection of US 17 at Seewee Road/Fifteen Mile Landing Road. Supplemental information was provided by the SCDOT Safety Office.

The following variables were reviewed for each crash: location, manner of collision, injury status, primary contributing factor, lighting, and roadway conditions.

Crash data locations were identified with either latitude/longitude coordinates or mile point from a specific location along the corridor. This information allowed for the mapping of the crash locations.

The manner of collision describes the type of collision that occurred during the crash and is classified into the following categories:

- Not a Collision with a Motor Vehicle
 - Non-Collision (run off road, rollover/overturn, jackknife, etc.)
 - Collision with Object Not Fixed (animal, pedestrian, etc.)
 - Collision with Fixed Object (guardrail, median, ditch, sign, tree, etc.)
- Rear End
- Angle
- Head On
- Sideswipe, Same Direction
- Sideswipe, Opposite Direction

Injury Status for each crash was identified by one of the following three categories:

- PDO – Property Damage Only
- Injury – At least one possible, non-incapacitating injury, or incapacitating injury
- Fatality – At least one fatality

The primary contributing factor of an incident describes the main element of why a crash occurred. A list of all primary contributing factor codes used in this study is provided in the **Appendix**.

5.0 Crash Data Analysis

5.1 Existing Conditions

For the crash analysis, historic crash data from the 11-year period from January 2010 to December 2021 was reviewed for the intersection of US 17 at Seewee Road/Fifteen Mile Landing Road. The 41 crashes that occurred at the intersection were reviewed for trends during this time period.

The crash data for the project study area is shown in **Figure 4 (Appendix)** and discussed in **Tables 2 through 4**. There were 41 crashes in the project study area during the time period analyzed. **Table 2** shows a summary of the crash data by collision type and injury status.

As shown in **Table 2**, the highest percentage of crashes in the study area were angle crashes (46%). Approximately 53% of angle collisions and 66% of all collisions resulted in injury. Approximately 32% of all collisions resulted in property damage only. One fatality occurred within the study area during the time period analyzed.

Manner of Collision		Number of Collisions	Percent of Total	Injury Status		
				Property Damage Only	Injury	Fatal
Not Collision with Motor Vehicle	Non-Collision	6	14.6%	2	4	0
	Non-Fixed Object	0	0.0%	0	0	0
	Fixed Object	0	0.0%	0	0	0
	Unknown	0	0.0%	0	0	0
Rear End		10	24.4%	2	8	0
Angle		19	46.3%	8	10	1
Head On		1	2.4%	0	1	0
Sideswipe, Same Direction		3	7.3%	1	2	0
Sideswipe, Opposite Direction		1	2.4%	0	1	0
Ran Off Road		1	2.4%	0	1	0
Total		41	100%	13	27	1

The detailed characteristics of the fatal crash provided by SCDPS were reviewed. The crash, an angle crash, was noted as a failure to yield right-of-way and occurred at the intersection of US 17 at Seewee Road/Fifteen Mile Landing Road in the southbound lane of travel in 2017.

Table 3 shows the primary contributing factor for incidents within the study area.

Cause	Number of Collisions	Percent of Total
Animal in Road	1	2.4%
Aggressive Operation of Vehicle	1	2.4%
Exceeded Authorized Speed Limit	1	2.4%
Distracted/Inattention	6	14.6%
Disregarded Sign or Signal	1	2.4%
Driving Too Fast for Conditions	3	7.3%
Failed to Yield Right of Way	19	46.3%
Followed Too Closely	1	2.4%
Fatigued/Asleep	1	2.4%
Improper Lane Usage/Change	3	7.3%
Medical Reason	1	2.4%
Other Improper Driver Action	1	2.4%
Ran Off Road	1	2.4%
Unknown Vehicle Defect	1	2.4%
Total	41	100%

As shown in **Table 3**, the four most common primary contributing factors of crashes within the study area were failure to yield right-of-way (46.3%), distracted/inattention (14.6%), improper lane usage/change (7.3%), and driving too fast for conditions (7.3%).

Table 4 shows a summary of the crash data within the study area by light and road surface condition.

As shown in **Table 4**, the majority of crashes within the study area took place during daylight and dry pavement conditions (83% and 85%, respectively).

Table 4: Crash Analysis - Light and Road Surface Conditions			
Conditions		Number of Incidents	Percent of Incidents on Road Section
Light Conditions	Daylight	34	82.9%
	Dark	7	17.1%
Total		41	100%
Road Surface Conditions	Dry	35	85.4%
	Wet	6	14.6%
Total		41	100%

6.0 Existing Conditions Traffic Signal Warrant Analysis

The intersection of US 17 at Seewee Road/Fifteen Mile Landing Road was reviewed as a part of this RSA to determine the appropriateness of traffic signal installation based on the Existing traffic conditions volumes at the intersection.

Traffic signal installation is based on national standards outlined in the *Manual of Uniform Traffic Control Devices* (MUTCD) (FHWA (2009, updated 2022)). The MUTCD outlines nine warrants that can be reviewed for a location under consideration for the installation of a traffic signal. The nine warrants are:

- Warrant 1, Eight-Hour Vehicular Volume
- Warrant 2, Four Hour Vehicular Volume
- Warrant 3, Peak Hour
- Warrant 4, Pedestrian Volumes
- Warrant 5, School Crossing
- Warrant 6, Coordinated Signal System
- Warrant 7, Crash Experience
- Warrant 8, Roadway Network
- Warrant 9, Intersection Near a Grade Crossing

As stated previously, a traffic count was performed at the intersection of US 17 at Seewee Road/Fifteen Mile Landing Road on a typical weekday in March 2022 from 7:00 AM to 7:00 PM. The raw count data is included in the **Appendix**.

6.1 MUTCD Warrants

Traffic signal installation warrants are based on national standards outlined in the MUTCD. The MUTCD identifies nine factors to be considered related to the “existing operation and safety at the study location and the potential to improve these conditions.” The MUTCD notes “satisfaction of traffic signal warrant or warrants does not in itself require the installation of the traffic control signal.” The MUTCD cautions against installation of a traffic signal when it is not warranted.

The MUTCD also provides guidance on the treatment of right-turns in the analysis, stating, “the study should consider the effects of the right-turn vehicles from the minor-street approaches. Engineering judgement should be used to determine what, if any, portion of the right-turn traffic is subtracted from the minor-street traffic count when evaluating the count against the signal warrants.” Right turns are generally included in the analysis on the mainline approach if there is no exclusive right turn lane, but not included if a right-turn lane exists. 75% of the right turns were included in the traffic signal warrant review for the Seewee Road approach and 0% of the right turns were included for the Fifteen Mile Landing Road approach due to the exclusive right-turn lane.

6.2 Warrant 1 – Eight-Hour Vehicular Volume

This warrant reviews the interaction between traffic on the major street with the highest minor street approach. It reviews whether there is a large volume of intersecting traffic or whether the traffic flow on the major street causes excessive delay/conflict on the minor street.

70% and 56% threshold values were used from Table 4C-1 (MUTCD) because the speed limit on the major street (US 17) is 60 mph.

Table 5 shows the Existing conditions traffic volumes compared to the MUTCD standards.

In the Existing conditions, the existing traffic volumes were found to meet Warrant 1, Condition A for zero hours of the eight hours required. Warrant 1, Condition B, is met for six hours (7:00 AM – 9:00 AM, 12:00 PM – 2:00 PM, and 5:00 PM – 7:00 PM) of the eight hours required. There are two hours (3:00 PM – 5:00 PM) where the minor street volumes are one vehicle short of the threshold for Warrant 1, Condition B. The traffic volumes were found to meet Warrant 1, Combination Warrant Condition A for zero hours of the eight required and Condition B is met for eleven hours of the eight hours required, meeting zero hours of both conditions (eight hour required). Therefore, the Existing conditions were found to not meet Warrant 1 in the Existing conditions, however, Warrant 1, Condition B is close to being met.

US 17 at Seewee Road/Fifteen Mile Landing Road - Traffic Signal Warrant Analysis - Existing Conditions

Intersection: US 17 at Seewee Road/Fifteen Mile Landing Road

Speed Limit of Major Street: 60 mph Greater than 40 mph? Y In an isolated community with population less than 10,000? N

Major Street: US 17 # Approach Lanes: 2
 Minor Street: Seewee Road # Approach Lanes: 1

Count Date: 3/15/2022

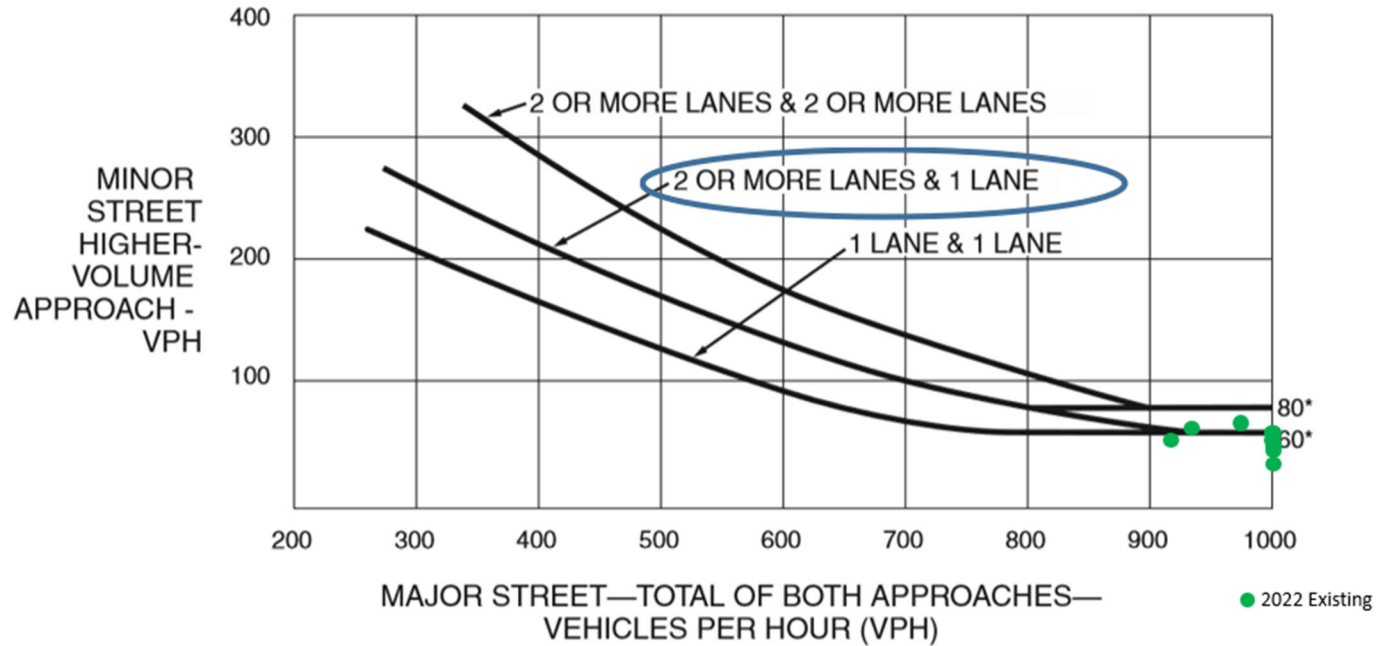
Starting Hour	Ending Hour	Major Street Volumes (Both Approaches)	Minor Street (Highest Approach)	Warrant 1, Eight-Hour Condition A (Minimum Vehicular Volume)			Warrant 1, Eight Hour Condition B (Interruption of Continuous Traffic)			Warrant 1, Eight Hour Combination						Warrant 2 (Four-Hour Vehicular Volume)
				Major Street	Minor Street	Both Met?	Major Street	Minor Street	Both Met?	Condition A			Condition B			
										Major Street	Minor Street	Both Met?	Major Street	Minor Street	Both Met?	
				420	105		630	53		336	84		504	42		
7:00 AM	8:00 AM	935	61	Y			Y	Y	Y	Y			Y	Y	Y	Y
8:00 AM	9:00 AM	972	67	Y			Y	Y	Y	Y			Y	Y	Y	Y
9:00 AM	10:00 AM	1,035	49	Y			Y			Y			Y	Y	Y	
10:00 AM	11:00 AM	1,039	36	Y			Y			Y			Y			
11:00 AM	12:00 PM	1,055	45	Y			Y			Y			Y	Y	Y	
12:00 PM	1:00 PM	1,086	60	Y			Y	Y	Y	Y			Y	Y	Y	Y
1:00 PM	2:00 PM	1,104	57	Y			Y	Y	Y	Y			Y	Y	Y	
2:00 PM	3:00 PM	1,091	49	Y			Y			Y			Y	Y	Y	
3:00 PM	4:00 PM	1,160	52	Y			Y			Y			Y	Y	Y	
4:00 PM	5:00 PM	1,164	52	Y			Y			Y			Y	Y	Y	
5:00 PM	6:00 PM	1,083	53	Y			Y	Y	Y	Y			Y	Y	Y	
6:00 PM	7:00 PM	917	56	Y			Y	Y	Y	Y			Y	Y	Y	
Hours Met				0			6			0			11			3
# of Hours Needed				8			8			8 of both conditions						4
Satisfied?				Not Satisfied			Not Satisfied			Not Satisfied						Not Satisfied

Source: MUTCD, 2022

Table 5: Traffic Signal Warrant Signal Analysis – 2022 Existing Conditions

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Sect. 4C.04

December 2009

SOURCE: *Manual on Uniform Traffic Control Devices (MUTCD)*, (Federal Highway Administration, 2009, updated 2012), <https://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part4.pdf>

Source: *MUTCD, 2022*

Figure 5: MUTCD Figure 4C-2, Existing Four-Hour Vehicle Volume

6.3 Warrant 2 – Four-Hour Vehicular Volume

This warrant reviews conditions “where the volume of intersecting traffic is the principal reason to consider installing a traffic signal.”

70% threshold values were used from Figure 4C-2 (MUTCD) because the speed limit on the major street (US 17) is 60 mph.

Table 5 shows the Existing conditions traffic volumes compared to the MUTCD standards.

As shown in **Table 5** and **Figure 5**, three hours (7:00 AM – 9:00 AM and 12:00 PM – 1:00 PM) of the four required hours are met in the Existing conditions. Therefore, this warrant is not met.

6.4 Warrant 3 – Peak Hour

This warrant reviews conditions to see if the “minor-street traffic suffers undue delay when entering or crossing the major street.” Note that this warrant “shall be applied only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time” according to the MUTCD.

Warrant 3 is not applicable for this intersection as it does not fall under the circumstances listed above.

6.5 Warrant 4 – Pedestrian Volume

This warrant reviews traffic volumes on the major street to see if pedestrians experience excessive delay in crossing the major street.

Due to the low volume of pedestrians observed at the intersection during the traffic count, this warrant was not found to be met.

6.6 Warrant 5 – School Crossing

This warrant reviews conditions “where the fact that school children cross the major street is the principal reason to consider installing a traffic control signal.”

Due to the low volume of pedestrians observed at the intersection during the traffic count, this warrant was not found to be met.

6.7 Warrant 6 – Coordinated Signal System

This warrant reviews conditions to determine if installing a traffic signal is required to necessitate progressive movements in a coordinated signal system.

The study area intersection is not adjacent to a coordinated system. Therefore, this warrant is not met.

6.8 Warrant 7 – Crash Experience

This warrant reviews crash data to determine if the severity and frequency of crashes give reason to install a traffic control signal. “The need for a traffic control signal shall be considered if an engineering study finds that all of the following criteria are met:

- Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency; and
- Five or more reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash; and
- For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the 80 percent columns of Condition A in Table 4C-1 (see Section 4C.02), or the vph in both of the 80 percent columns of Condition B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 80 percent of the requirements specified in the Pedestrian Volume warrant. These major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours.”

Based on the past 11 years of crash data discussed in the previous section and shown in **Figure 4**, there were four angle crashes in 2015 and three angle crashes in both 2014 and 2017. Therefore, this warrant was not met.

6.9 Warrant 8 – Roadway Network

This warrant reviews conditions to see if “installing a traffic control signal at some intersections might be justified to encourage concentration and organization of traffic flow on a roadway network.” Warrant 8 requires the intersections of two or more “major routes.” Only US 17 is considered a major route; therefore, this warrant is not met.

6.10 Warrant 9 – Intersection near a Grade Crossing

This warrant reviews conditions to determine “if the proximity to the intersection of a grade crossing on an intersection approach controlled by a STOP or YIELD sign is the principal reason to consider installing a traffic control signal.”

The intersection is not near a grade crossing, therefore Warrant 9 is not met.

6.11 Summary of Warrants

In summary, the intersection was not found to not meet traffic signal warrants, however, Warrant 1, Condition B is close to being met with the current lane configuration. SCDOT may require the installation of a westbound left-turn lane on Seewee Road approach prior to considering signalization. With the installation of the left-turn lane, this would likely extend the timeframe of when the location is projected to meet traffic signal warrants. Therefore, the intersection is not considered as a good candidate for potential signalization at this time based on the Existing conditions. Further discussion with SCDOT on potential future signalization is recommended as the traffic signal would be located at an isolated rural area. If installed, appropriate signage, striping, and lighting would be required.

7.0 Proposed Alternatives Summary

Four conceptual alternatives were proposed for the US 17 at Seewee Road/Fifteen Mile Landing Road intersection and are detailed in the sections below.

7.1 Alternative 1 – Pavement Markings/Signing Upgrades

Alternative 1 consists of updating pavement markings and installation of signage upgrades on all approaches at the intersection of US 17 at Fifteen Mile Landing Road/Seewee Road.

Figure 6 (Appendix) shows the conceptual plan prepared by Parrish and Partners.

7.2 Alternative 1 Safety Review

The *National Cooperative Highway Research Program Report 500 – Guidance for Implementation of the AASHTO Strategic Highway Safety Plan – Volume 5: A Guide for Addressing Unsignalized Intersection Collisions* identifies the potential safety benefits of improving pavement markings and signage at an intersection that include:

- Drivers are more aware that an intersection is approaching and therefore, they are more alert to potential vehicles on cross streets

7.3 Alternative 2 – Restriction of Mainline Left Turns

Alternative 2 consists of restricting the mainline left turns onto the side streets at the intersection of US 17 at Seewee Road/Fifteen Mile Landing Road and installation of northbound and southbound acceleration lanes on US 17 to assist vehicles from the side streets maneuvering onto US 17. This concept also would require potential improvements to the adjacent median breaks north and south of the intersection on US 17.

Figure 7 (Appendix) shows the conceptual plan prepared by Parrish and Partners.

7.4 Alternative 2 Safety Review

The National Cooperative Highway Research Program Report 500 – Guidance for Implementation of the AASHTO Strategic Highway Safety Plan – Volume 5: A Guide for Addressing Unsignalized Intersection Collisions identifies the potential safety benefits of restriction of mainline left turns and acceleration lanes that include:

- Reduction of rear-end and sideswipe collisions that result from conflicts between vehicles turning left from the side streets and major highway through movements
- Turn restrictions or prohibitions have been found to reduce crashes related to the turning maneuver by nearly 100%

7.5 Alternative 3 – Conversion of the Intersection to a Reduced Conflict Intersection

Alternative 3 consists of a reconfiguration of the intersection of US 17 at Seewee Road/Fifteen Mile Landing Road to an RCI by converting the eastbound and westbound approaches to right turns only. This concept also would require potential improvements to the adjacent median breaks north and south of the intersection on US 17.

An RCI is a geometric design option for an intersection that alters how traffic completes left-turn movements through the intersection. The minor road left-turn movements are eliminated from the intersection by installing concrete divider islands to the median of the intersection. The islands allow traffic on the major road to turn left onto the minor road but restrict left turning traffic from the minor road. Minor street through movements across the major road are also prohibited. All minor road traffic turns right and the left-turning or through traffic from the minor streets utilizes U-turn movements at the adjacent median breaks.

Figure 8 (Appendix) shows the conceptual plan prepared by Parrish and Partners.

7.6 Alternative 3 Safety Review

As noted by SCDOT (<https://www.scdot.org/travel/reduceconflict-intersection.aspx>), an RCI improves safety at an intersection by reducing the number of conflict points in the intersection from the 32 conflict points at a traditional intersection to 18. Additionally, at six locations in South Carolina where RCIs are installed, SCDOT has found that “right angle crashes have been reduced by 96%. Fatal crashes were reduced 100% and all injury crashes have been reduced 73%.”

7.7 Alternative 4 – Signalization of Intersection

Alternative 4 consists of signalization of the intersection of US 17 at Seewee Road/Fifteen Mile Landing Road. All left turns were assumed to operate as permissive only in the analysis. SCDOT may require the installation of a westbound left-turn lane on Seewee Road approach prior to considering signalization. This turn lane was not included in the analysis.

Figure 9 (Appendix) shows the conceptual plan prepared by Parrish and Partners.

7.8 Alternative 4 Safety Review

The *National Cooperative Highway Research Program Report 500 – Guidance for Implementation of the AASHTO Strategic Highway Safety Plan – Volume 5: A Guide for Addressing Unsignalized Intersection Collisions* identifies the potential safety benefits of installation of a traffic signal at the intersection. The following was noted:

- Typically, at signalized intersections, crash frequency is increased; however, severity is decreased with the installation of a traffic signal
- “Before a decision to install a signal is made, adequate consideration should be given to less restrictive forms of traffic control.”

8.0 Capacity Analysis

Capacity analyses were performed for the AM, Midday, and PM peak hours for the 2022 Existing, 2025 No Build, and 2025 Build conditions for Alternative 2, Alternative 3, and Alternative 4 using the Synchro, Version 10 software to determine the operating characteristics of the adjacent roadway network and the impacts of the proposed project. The analyses were conducted with methodologies contained in the *Highway Capacity Manual, 6th Edition* (Transportation Research Board, December 2016). Alternative 1 conditions will be the same as the 2025 No Build conditions due to no geometric changes being made as part of Alternative 1.

Capacity of an intersection is defined as the maximum number of vehicles that can pass through an intersection during a specified time, typically an hour. Capacity is described LOS for the operating characteristics of an intersection. LOS is a qualitative measure that describes operational conditions and motorist perceptions within a traffic stream. The *Highway Capacity Manual* defines six levels of service, LOS A through LOS F, with A being the best and F being the worst.

LOS for signalized intersections is determined by the overall intersection operations and is reflected as average delay per vehicle. LOS D or better is typically considered acceptable for signalized intersections.

LOS for a two-way stop-controlled (TWSC) intersection is determined by the delay of the poorest performing minor approach, as LOS is not defined for TWSC intersections as a whole. It is not unusual for minor stop-controlled side streets and driveways on major streets to experience longer delays at LOS E and LOS F during peak hours while the majority of the traffic moving through the corridor typically experiences little or no delay.

The 2025 Build traffic volumes include existing traffic grown to the buildout year based on the growth rate previously discussed. **Figure 10 (Appendix)** shows the AM, Midday, and PM peak hour volumes. Volume development worksheets for Alternatives 2 and 3 are shown in the **Appendix**.

Table 6 summarizes the LOS and control delay (average second of delay per vehicle) for the projected 2022 Existing and 2025 Build AM, Midday, and PM peak hour conditions at the intersection of US 17 at Seewee Road/Fifteen Mile Landing Road.

Table 6: LOS Analysis Summary					
Conditions		Traffic Control¹	AM Peak Hour	Midday Peak Hour	PM Peak Hour
2022 Existing Conditions		U	C (15.5) – WB	C (18.5) – WB	C (21.1) – WB
2025 No Build Conditions/Alternative 1		U	C (17.4) – WB	C (22.3) – WB	D (26.7) – WB
Alternative 2	2025 Build Conditions	U	C (16.9) – WB	C (20.6) – WB	D (25.0) – WB
Alternative 3	2025 Build Conditions	U	B (11.6) – EB	B (11.6) – WB	B (12.6) – WB
Alternative 4	2025 Build Conditions	S	A (5.6)	A (6.1)	A (5.6)

1. S = Signalized, U = Unsignalized

One vehicle of median storage was assumed due to the median break. As shown in **Table 6**, the unsignalized intersection of US 17 at Seewee Road/Fifteen Mile Landing Road currently operates acceptably at LOS C, during the AM, Midday, and PM peak hours. In the 2025 No Build/Alternative 1 conditions the unsignalized intersection of US 17 at Fifteen Mile Landing Road/Seewee Road is projected to continue to operate acceptably at LOS C during the AM and Midday peak hours and at LOS D during the PM peak hour.

8.1 Alternative 1 – Pavement Markings/Signing Upgrades

No geometric changes were made for this alternative, so the 2025 Alternative 1 Build conditions would be the same as the 2025 No Build conditions.

8.2 *Alternative 2 – Restriction of Mainline Left Turns*

As previously discussed in **Section 7.3**, Alternative 2 consists of installation of northbound and southbound acceleration lanes on US 17 at the intersection of US 17 at Seewee Road/Fifteen Mile Landing Road to allow vehicles from the side streets onto the main road and the restriction of mainline left turns onto the side streets. With the proposed improvements, the intersection is projected to operate at LOS C during the AM and Midday peak hours and at LOS D during the PM peak hour in the 2025 Build conditions.

8.3 *Alternative 3 – RCI*

As previously discussed in **Section 7.5**, Alternative 3 consists of a reconfiguration of the intersection of US 17 at Seewee Road/Fifteen Mile Landing Road by converting the eastbound and westbound approaches to right turn only. With the proposed improvements, the intersection is projected to operate at LOS B during the AM, Midday, and PM peak hours during the 2025 Build conditions.

8.4 *Alternative 4 – Signalization of Intersection*

As previously discussed in **Section 7.7**, Alternative 4 consists of signalization of the intersection of US 17 at Seewee Road/Fifteen Mile Landing Road. It is assumed that the left turns at the intersection would be operate as permissive operations only. With the proposed improvements, the intersection is projected to operate at LOS A during the AM, Midday, and PM peak hours during the 2025 Build conditions.

8.5 *Preliminary Cost Summary*

The project team developed the preliminary costs for the four alternatives. These costs are based on best available conceptual data in 2022 and are subject to change based on plan/design revisions, fluctuations in unit costs, field conditions, etc. The quantities and costs in this estimate are provided for budgeting use only and should not be considered as final. This estimate does not include any costs associated with right-of-way acquisition, engineering, utility relocation, environmental mitigation or CE&I associated with construction.

The project team developed the following projected planning level costs.

- Alternative 1: \$167,000
- Alternative 2: \$885,000
- Alternative 3: \$490,000
- Alternative 4: \$540,000

Detailed preliminary cost information is included in the **Appendix** for Alternatives 1 - 4.

9.0 Field Visit Summary

9.1 Pre-Road Safety Audit Meeting

Parrish & Partners and Bihl Engineering led a Pre-Road Safety Audit Meeting on Wednesday, May 11, 2022, at the Town of Awendaw Town Hall. The RSA included a multi-disciplinary team to perform a review of the intersection comprised of representatives from Charleston County, Charleston County Sheriff, Charleston County Fire Department, the Town of Awendaw, SCDOT (District 6 and Headquarters Safety Staff), BCDCOG, Parrish & Partners, and Bihl Engineering.

The following section provides a summary of the discussion in the pre-RSA meeting.

- The intersection characteristics, traffic volumes, and crash history were reviewed with the team
- Previous studies included a SCDOT safety review and speed study
- The area is popular with bicyclists. There is a regular bicycle group ride that travels on US 17 on Mondays, Wednesdays, and Fridays. Other groups ride on Saturdays. BCDCOG plans to collect additional bicycle data in the future at this intersection.
- The Town noted two developments are planned on Seewee Road. SCDOT and the Town have not received any traffic studies for these developments.
- Seewee Road experiences heavy vehicles and trucks with boat trailers
- Intersection is currently not lit at night. If streetlights are considered, the potential impact on wildlife should be reviewed
- Potential design improvements were discussed:
 - Pavement markings/signage upgrades
 - Restriction of mainline left turns
 - RCI

9.2 RSA Field Review

A PM peak hour field review meeting was held on Wednesday, May 11, 2022, with the project team and stakeholders. An AM peak hour field review meeting was held on Thursday, May 12, 2022, with the project team and stakeholders. This section summarizes the discussion and observations at the intersections. The RSA field visit summary package is included in the **Appendix**.

- There is a missing yield sign northbound on US 17 turning right onto Seewee Road
- TriCounty bus stop C203 is a flag down bus stop, but ridership is low in the area
- During the site visit, the location of where vehicles staged in the median was inconsistent, sometimes causing congestion
- Some stakeholders requested looking at median striping to help with vehicle staging. Per further discussion with SCDOT, there is no standard for this type of striping
- Increase stop sign size from 36 inches to 48 inches

- The location of the existing yellow edge line location by Seewee Restaurant needs confirmation of proper placement
- When developing concepts, the alignment of southbound left lane and the northbound US 17 right turn striped median should be reviewed
- Truck volumes to/from Seewee Road appeared higher during the AM peak hour than in the PM peak hour
- Vehicles were observed traveling the wrong way on US 17 to enter Seewee Restaurant parking lot
- Two bicyclists were observed travelling from Seewee Road to Fifteen Mile Landing Road during observation periods
- Project could consider installation of properly sized acceleration lanes on US 17 to facilitate side street left-turn vehicle flow entering US 17 vehicle stream

9.3 US 17 at Seewee Road/ Fifteen Mile Landing Road Site Photos



The project team observing the existing conditions at the intersection of US 17 at Seewee Road/Fifteen Mile Landing Road.



Example of vehicles using the median inconsistently. Vehicle is waiting in the northbound left-turn lane because a vehicle is in the middle of the median.



Existing yellow line at Seewee Restaurant driveway – Location to be reviewed.



Example of westbound queue on Seewee Road during the AM peak hour.



Example of bicyclists traveling westbound from Seewee Road to Fifteen Mile Landing Road.



The missing yield sign on US 17 for northbound turning right onto Seewee Road.

10.0 Summary

This report summarizes the transportation analysis for the RSA performed at the intersection of US 17 at Seewee Road/Fifteen Mile Landing Road in Charleston County, South Carolina.

The RSA analyzed the intersection of US 17 at Seewee Road/Fifteen Mile Landing Road for transportation improvements and safety improvements. The transportation analysis for the RSA reviewed the existing conditions and four build alternatives. For the purposes of this report four intersection alternatives were analyzed for the 2022 existing conditions and design year 2025 conditions.

The crash analysis for the study period of January 2010 through December 2021 at the intersection US 17 at Seewee Road/Fifteen Mile Landing Road at revealed a high percentage of angle (46%) and rear end (24%) crashes. The one fatal crash at the intersection during the study period was an angle crash due to a driver failing to yield the right-of-way.

In the intersection capacity analysis, Alternative 2, Alternative 3, and Alternative 4 are projected to operate acceptably during the AM, Midday, and PM peak hours in the 2025 Build conditions.

11.0 Conclusion

Alternative 1 is recommended in the short term to enhance safety at the intersection. Based on the results of the transportation analysis, due to a combination of its constructability, projected operations, queuing, and likelihood of decreasing the severity and frequency of angle crashes prevalent at the intersection, Alternatives 2, 3 and 4 all result in improved conditions at the intersection. The following should be considered when reviewing these alternatives.

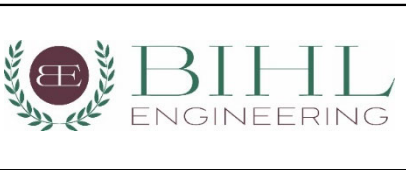
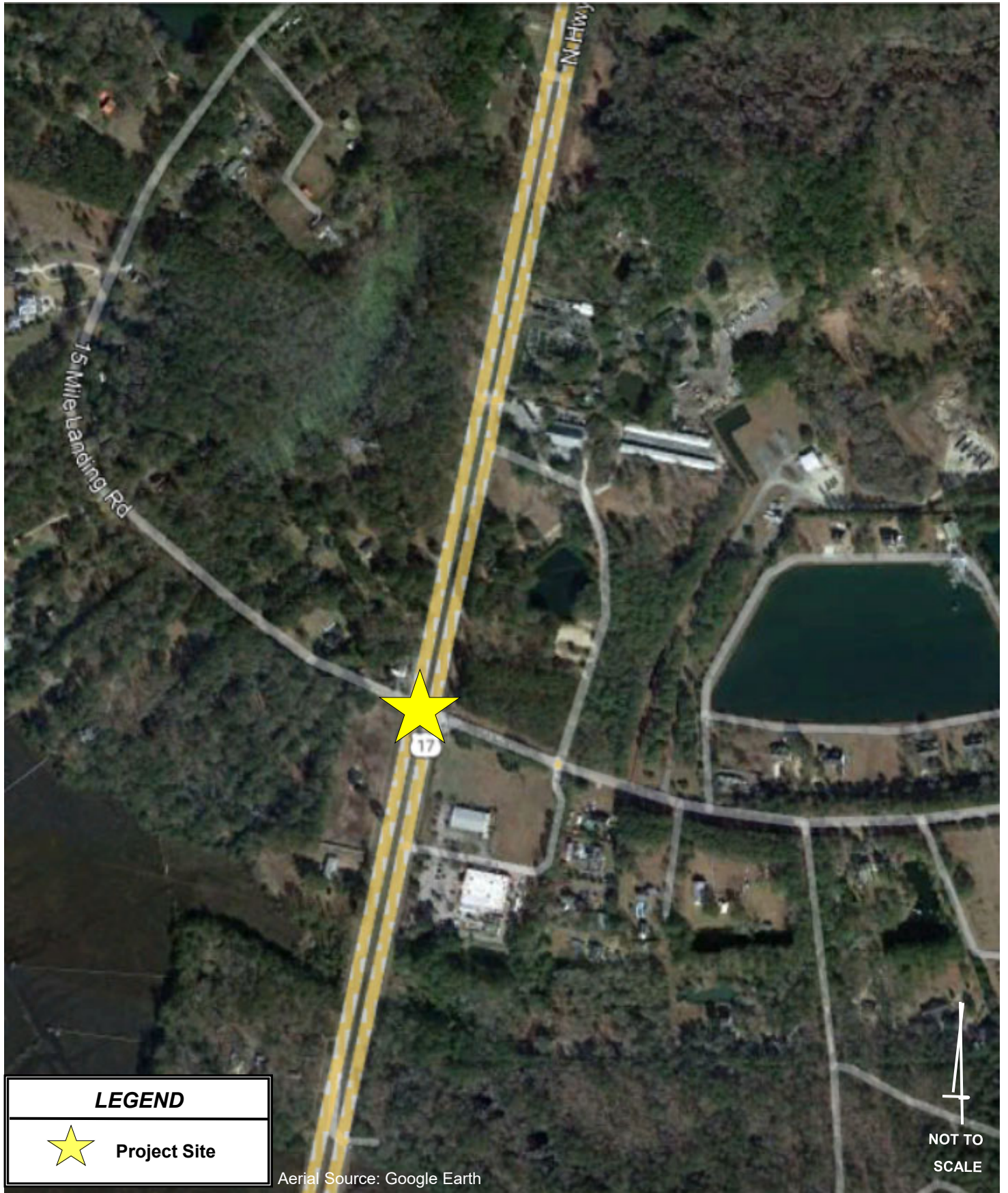
- Alternative 2
 - The number of conflict points is reduced with the restricted movements
 - US 17 lefts would be rerouted
 - Seewee Road has the highest left-turn movement at the intersection
- Alternative 3
 - The number of conflict points is further reduced with the restricted movements
 - Side street left turns and through movements would be rerouted
- Alternative 4
 - Traffic signal would be located at an isolated rural intersection, therefore appropriate signage, striping, and lighting would be required.
 - SCDOT may require the installation of a westbound left-turn lane on Seewee Road approach prior to considering signalization. With the installation of the left-turn lane, this would likely extend the timeframe of when the location is projected to meet traffic signal warrants.

- National Cooperative Highway Research Program Report 500 – Guidance for Implementation of the AASHTO Strategic Highway Safety Plan – Volume 5: A Guide for Addressing Unsignalized Intersection Collisions (Transportation Research Board of the National Academies, 2003), notes that "before a decision to install a signal is made, adequate consideration should be given to less restrictive forms of traffic control."
- Provides a controlled bicycle and pedestrian crossing

Further discussion with SCDOT is recommended regarding the future year improvement alternatives.

Results in this report are based solely on traffic studies and are considered input into final design considerations. The alternatives analyzed should be considered conceptual in nature. The final design will be determined by the project engineer after other design elements (such as, but not limited to, utilities, stormwater, etc.) are taken into consideration and should meet SCDOT design standards.

Appendix



**US 17 at Seewee Rd./Fifteen
Mile Landing Rd.
Road Safety Audit -
Transportation Analysis**

Site Location

Figure 1A



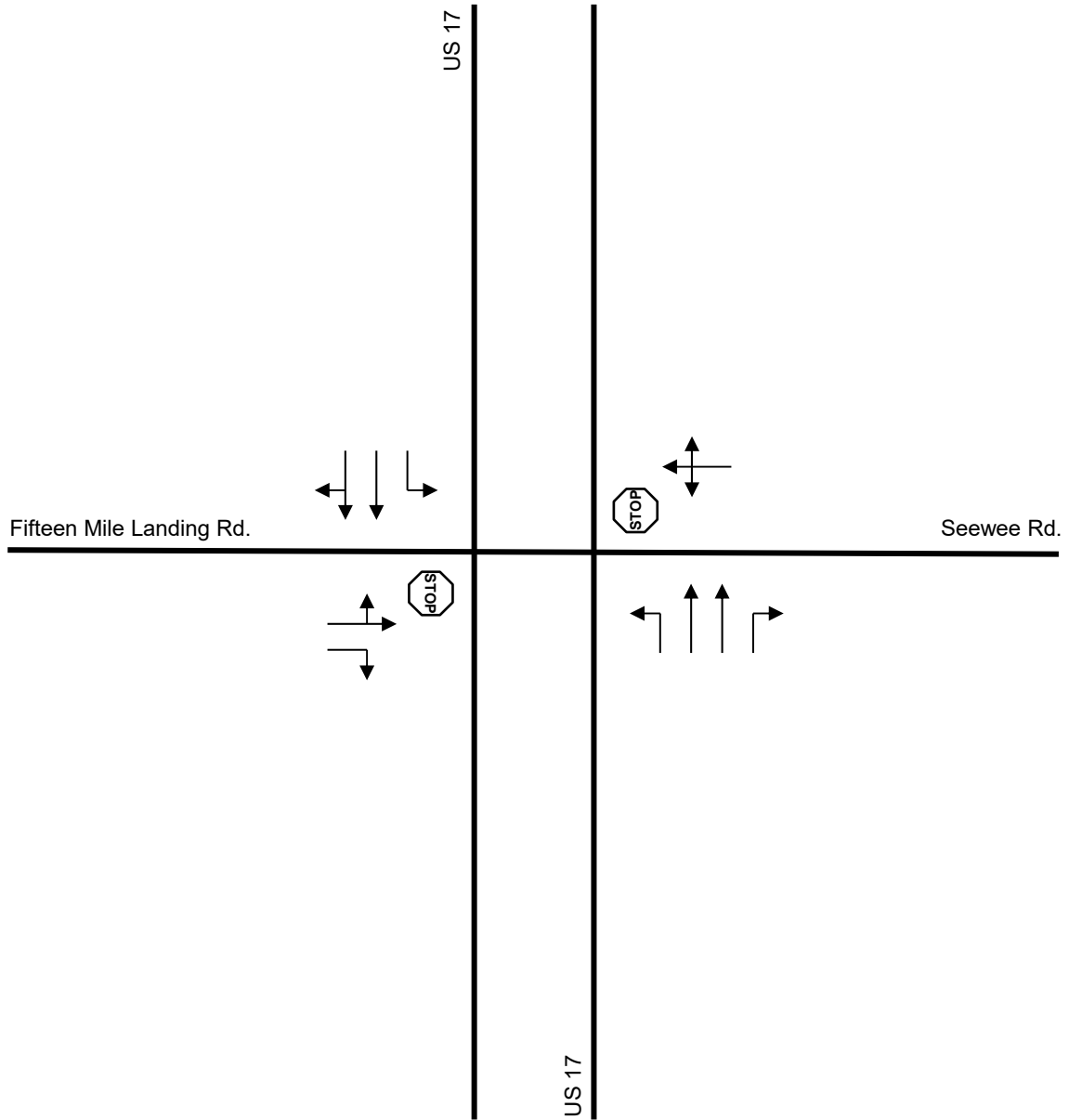
Aerial Source: Google Earth





**US 17 at Seewee Rd./Fifteen
Mile Landing Rd.
Road Safety Audit -
Transportation Analysis**

Site Location

Figure 1B



LEGEND	
	Existing Laneage
	Existing Stop Sign

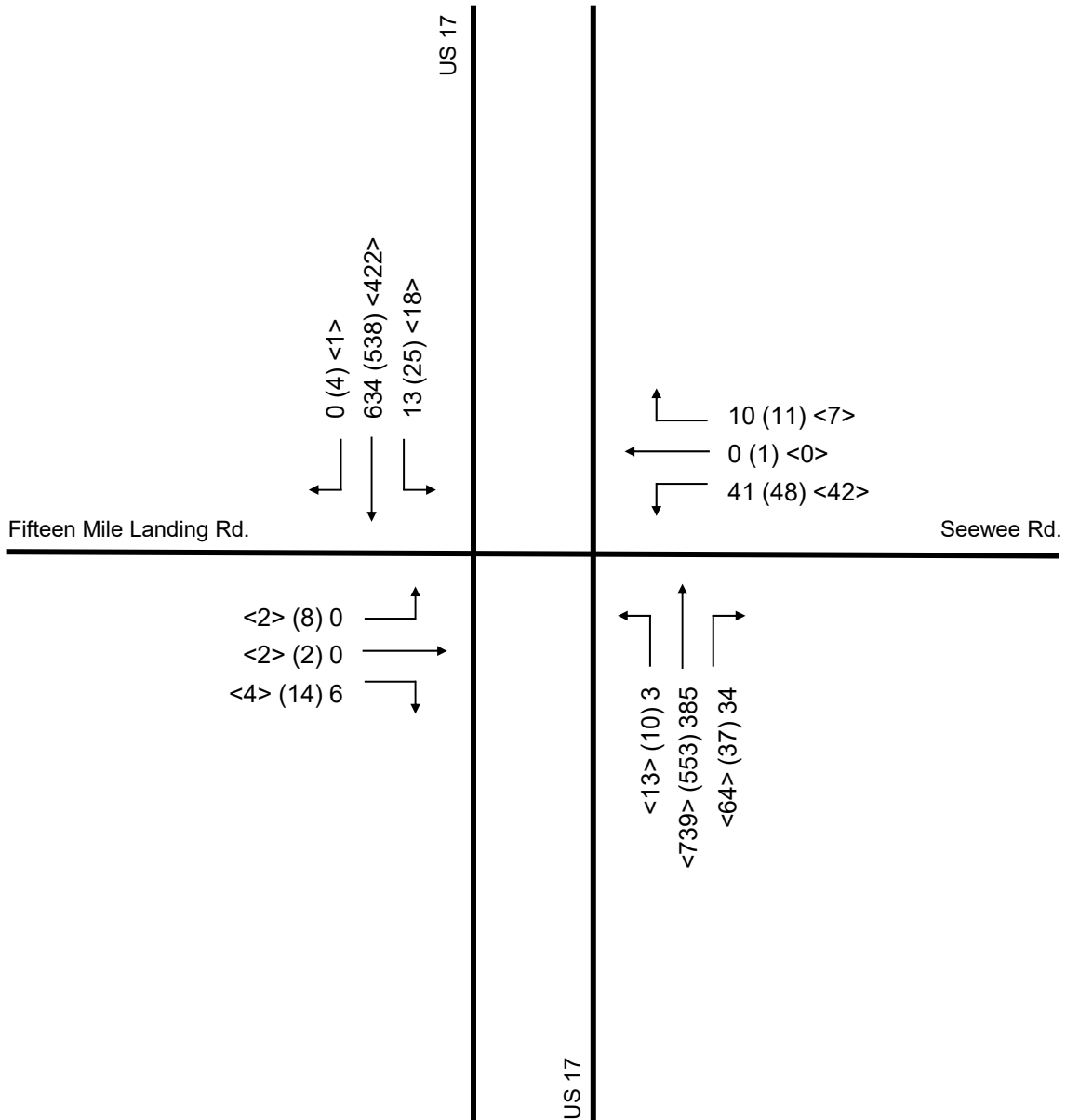

NOT TO SCALE



**US 17 at Seewee Rd./Fifteen Mile Landing Rd.
Road Safety Audit -
Transportation Analysis**

Existing Roadway Laneage

Figure 2



LEGEND	
XX	AM Peak Hour Traffic (9:00 AM – 10:00 AM)
(XX)	Midday Peak Hour Traffic (12:45 PM – 1:45 PM)
<XX>	PM Peak Hour Traffic (3:30 PM – 4:30 PM)

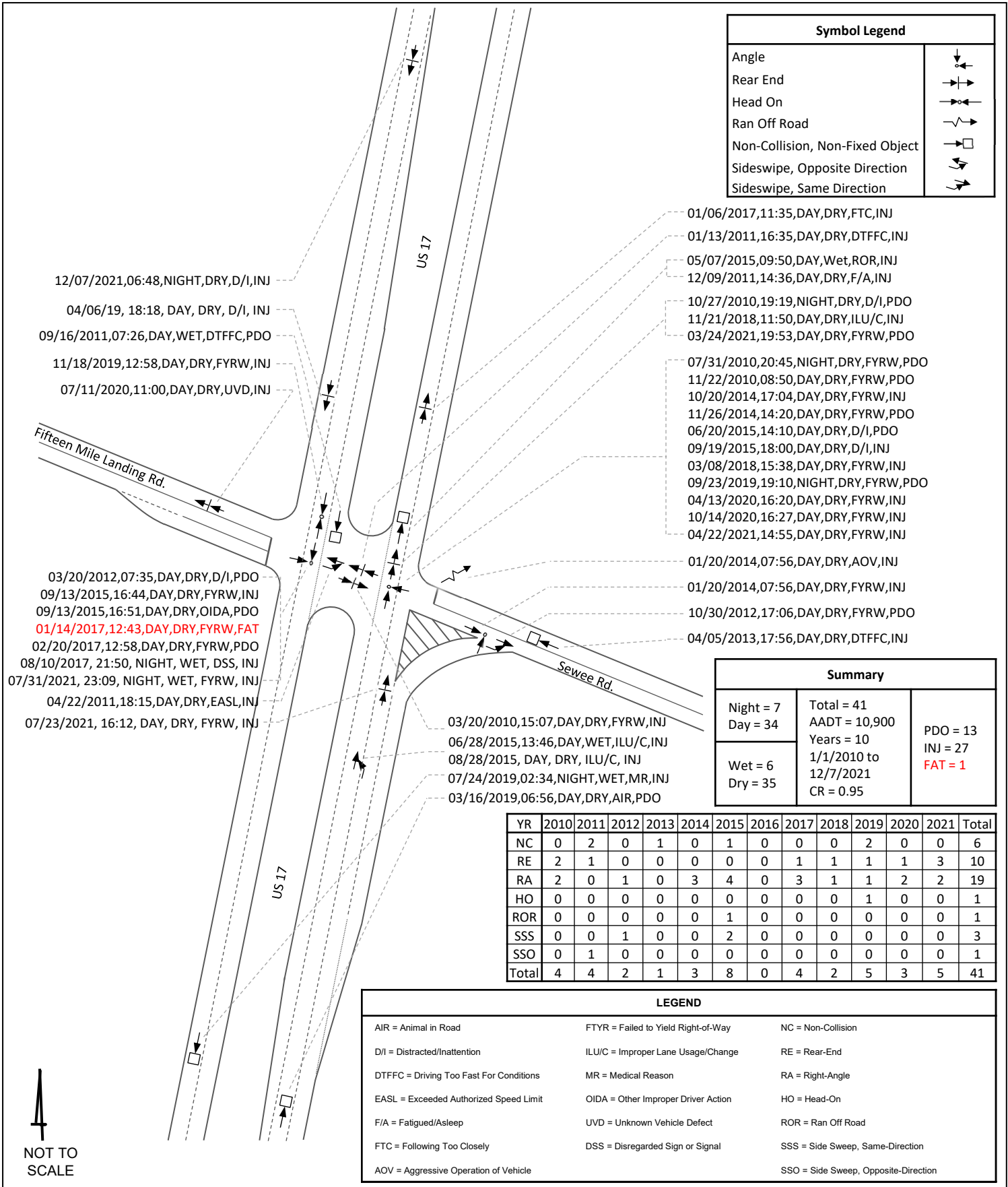

 NOT TO SCALE



**US 17 at Seewee Rd./Fifteen Mile Landing Rd.
 Road Safety Audit -
 Transportation Analysis**

**Existing Peak Hour
 Traffic Volumes**

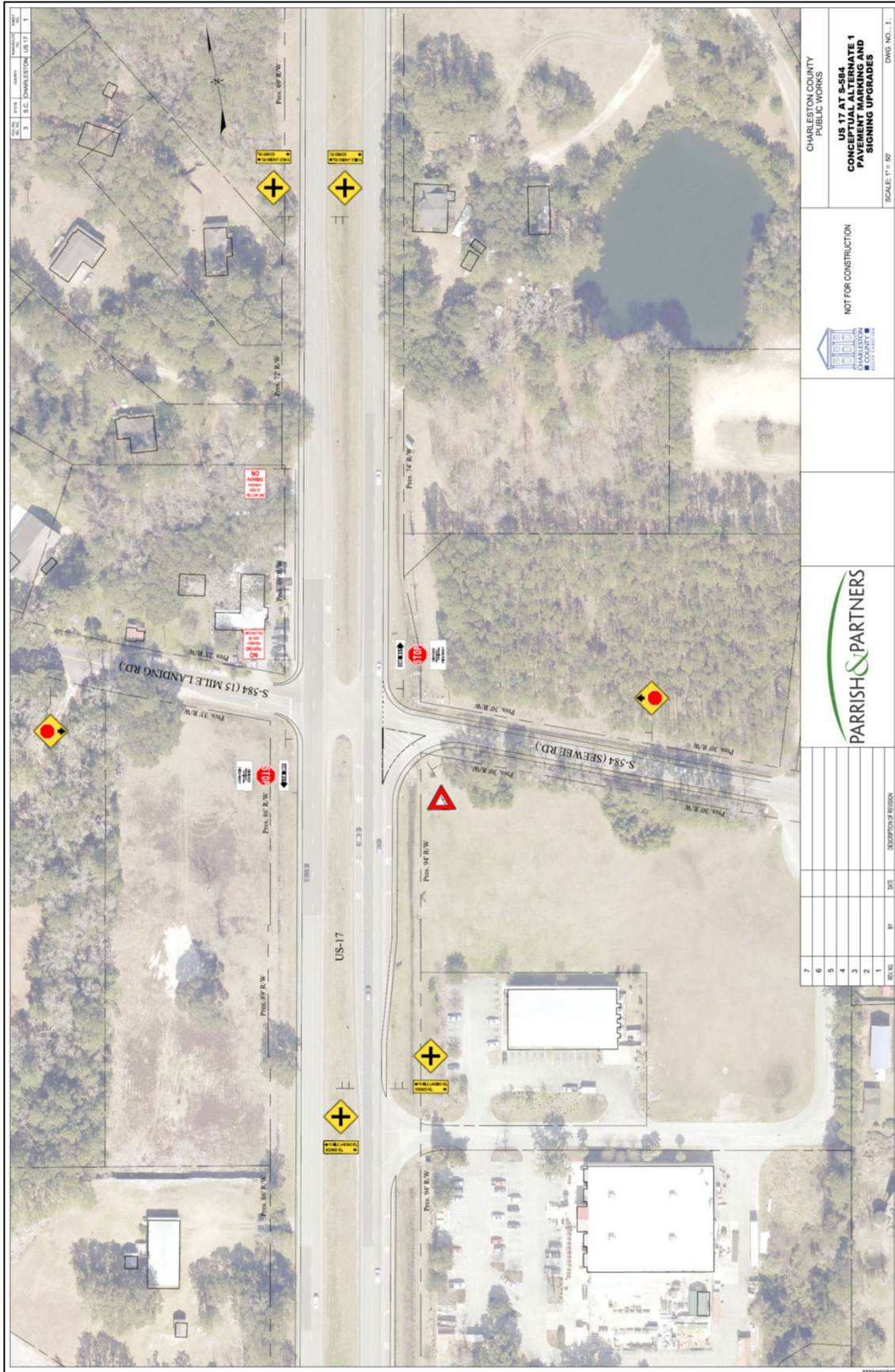
Figure 3



**US 17 at Sewee Rd./Fifteen Mile Landing Rd.
Road Safety Audit -
Transportation Analysis**

**Collision Diagram
From 1/1/10 – 12/7/21**

Figure 4

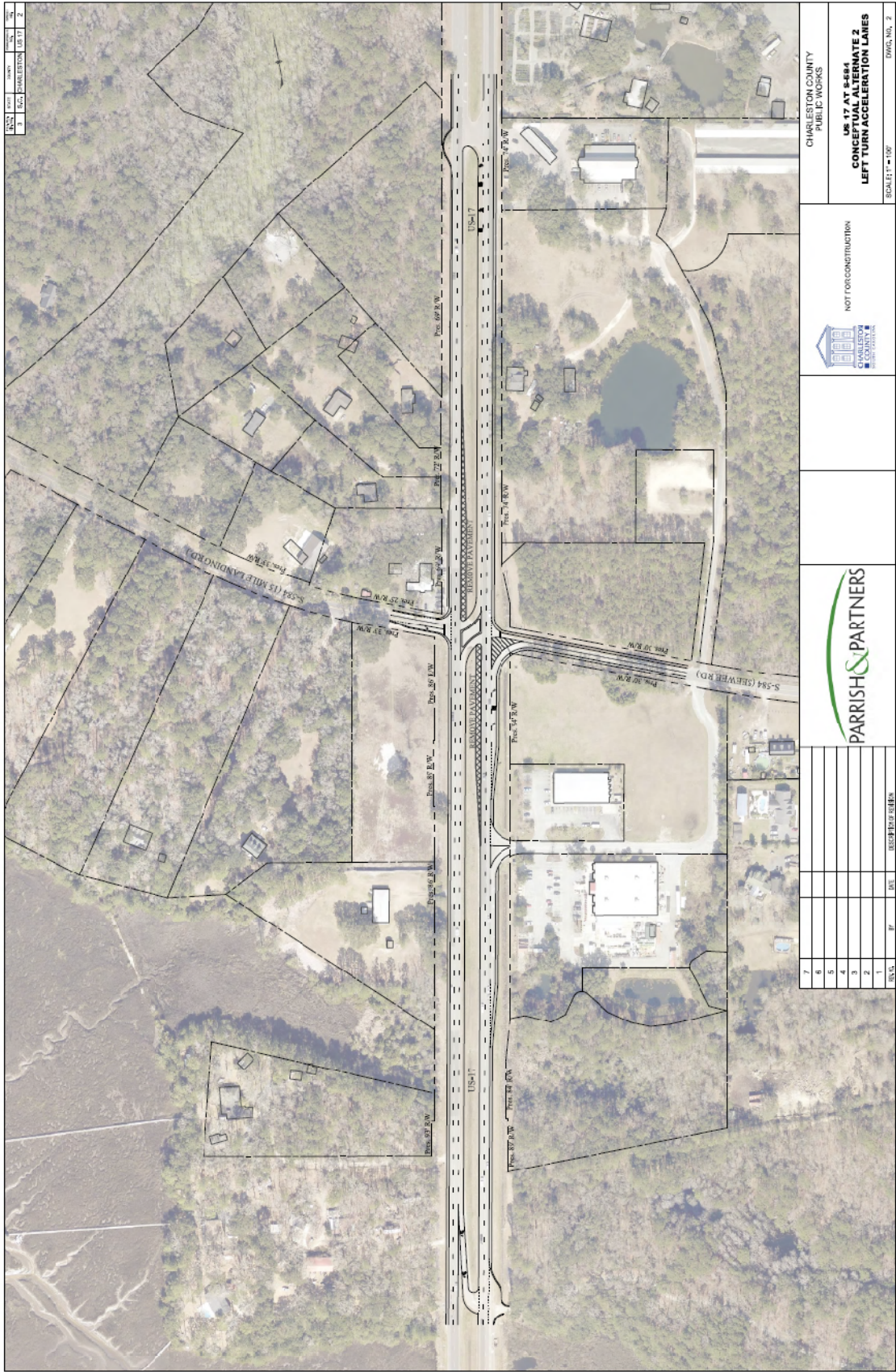


Source: Parrish & Partners

US 17 at Seewee Rd./Fifteen Mile Landing Rd.
 Road Safety Audit -
 Transportation Analysis

Alternative 1
 Conceptual Plan

Figure 6

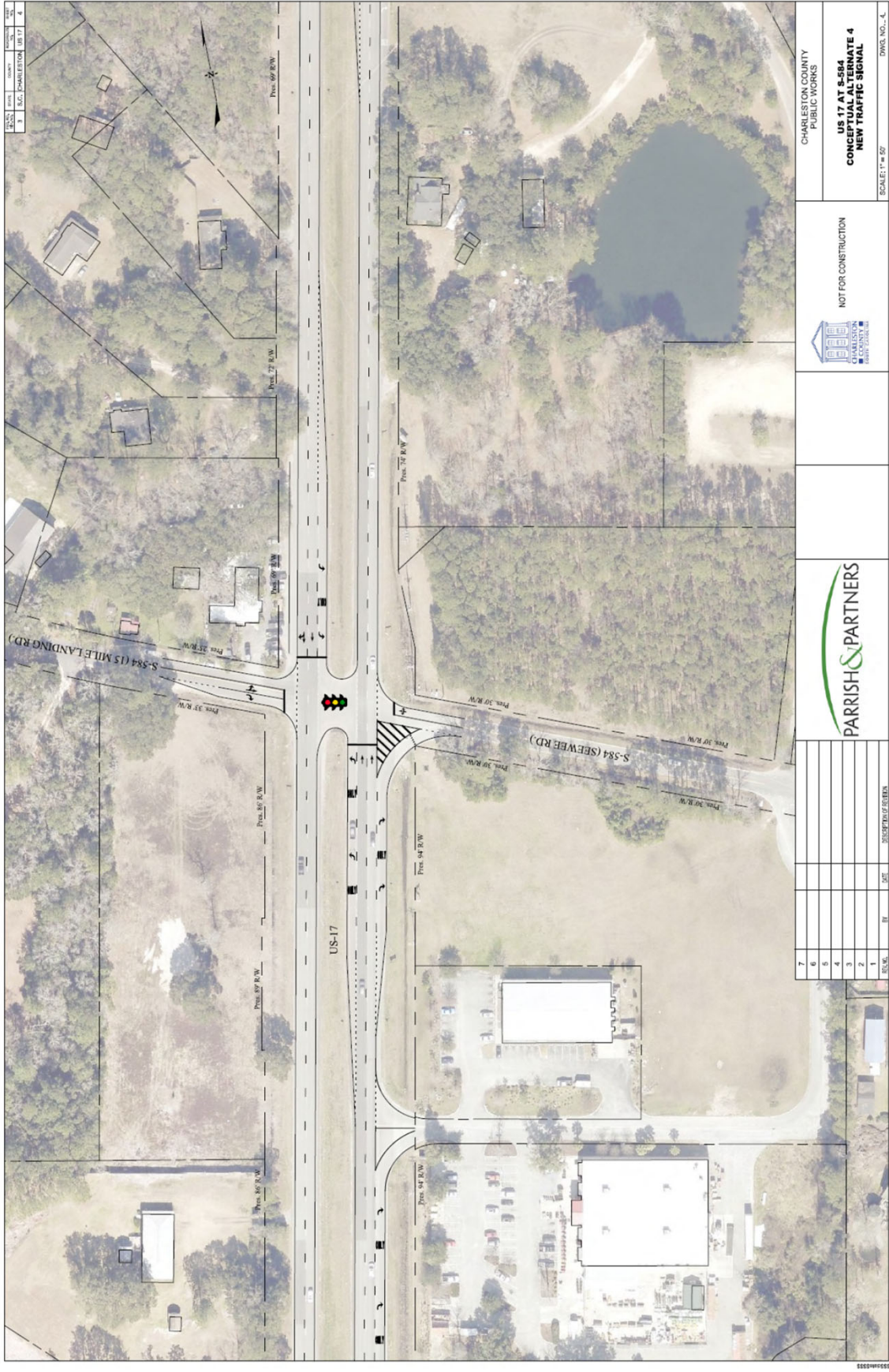


Source: Parrish & Partners

US 17 at Seewee Rd./Fifteen Mile Landing Rd. Road Safety Audit - Transportation Analysis

Alternative 2 Conceptual Plan

Figure 7



CHARLESTON COUNTY
PUBLIC WORKS
**US 17 AT S 584
CONCEPTUAL ALTERNATIVE 4
NEW TRAFFIC SIGNAL**
SCALE: 1" = 50'

NOT FOR CONSTRUCTION


PARRISH & PARTNERS

Source: Parrish & Partners

**US 17 at Seewee Rd./Fifteen
Mile Landing Rd.
Road Safety Audit -
Transportation Analysis**

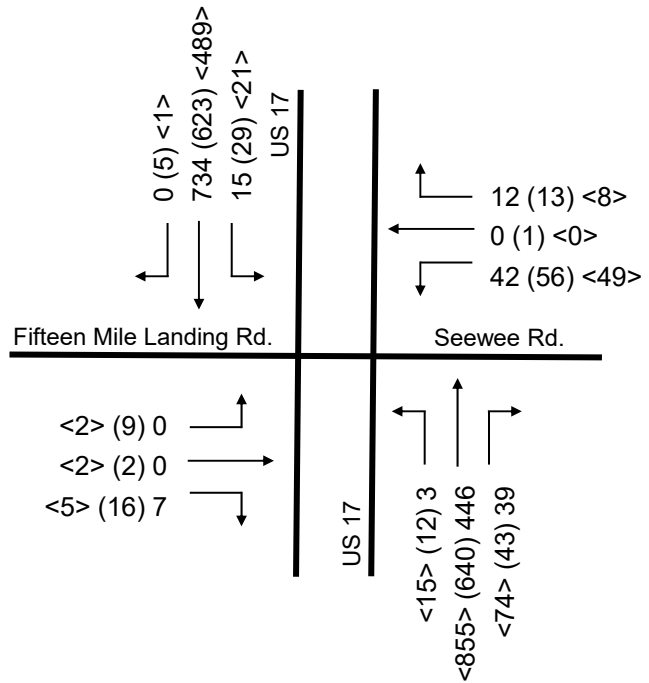
**Alternative 4
Conceptual Plan**

Figure 9

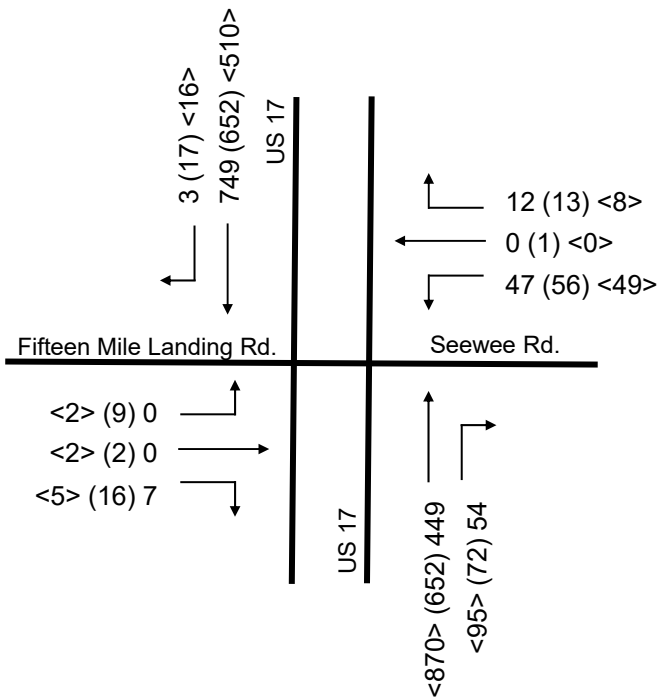
LEGEND

- XX** AM Peak Hour Traffic
- (XX)** Midday Peak Hour Traffic
- <XX>** PM Peak Hour Traffic

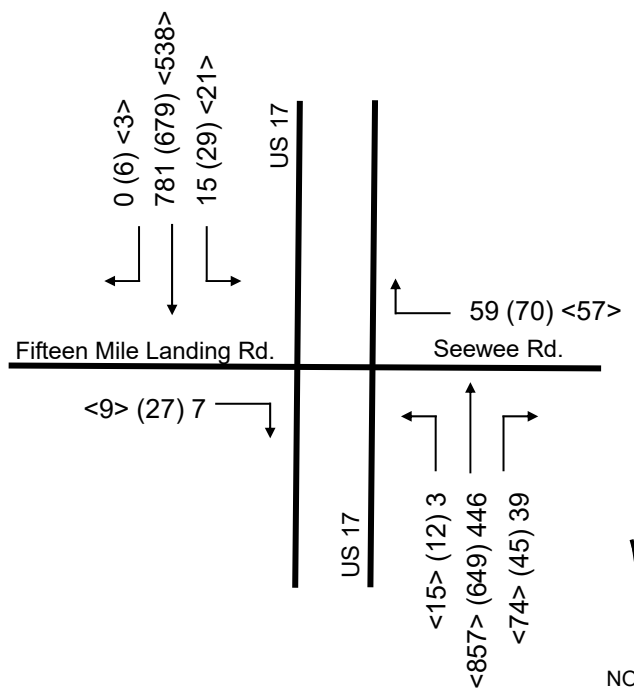
2025 No Build/Alternative 1/Alternative 4



2025 Build Alternative 2



2025 Build Alternative 3



NOT TO SCALE



US 17 at Seewee Rd./Fifteen Mile Landing Rd. Road Safety Audit - Transportation Analysis

2025 Build Traffic Volumes

Figure 10

June 28, 2017

The Honorable Miriam C. Green
Town of Awendaw
Post Office Box 520
Awendaw, South Carolina 29429

RE: US 17 Corridor Safety Review

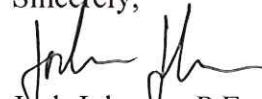
Dear Mayor Green:

Thank you for the opportunity to attend the Town of Awendaw Council Meeting on May 4, 2017 to address safety concerns along US 17. As discussed at that meeting, a prior review was conducted in December 2014. At your request, the Department has conducted an updated safety review for this corridor and a comprehensive report is enclosed.

Vehicle crash history was collected along the corridor for the time frame between January 1, 2014 and December 31, 2016. The review included crash data from an 11.7-mile section beginning south of Seewee Road and culminating north of Steed Creek Road. Additionally, crash reports were reviewed at the US 17 intersections with Seewee Road/Fifteen Mile Landing Road, Guerins Bridge Road, Doar Road (South), Doar Road (North), and Steed Creek Road. Based on the review of this crash data and site evaluations, several signing and marking upgrades are recommended. Each of these is specifically discussed in the attached report, and includes upgraded intersection warning signs, "one way" signs, "do not enter" signs, and "wrong way" signs.

We hope that this information addresses the concerns you have brought to our attention. If you have any questions, please feel free to contact me directly at (843) 746-6719.

Sincerely,



Josh Johnson, P.E., PTOE
Assistant District Traffic Engineer

JAJ:jaj
cc: Arnold Blanding, Resident Maintenance Engineer

File: D6/Charleston

**Safety Review of US 17 (North Highway 17)
From S-584 (Seewee Road) to S-1032 (Steed Creek Road)**

June 2017

I. Introduction

At the request of the Town of Awendaw, the South Carolina Department of Transportation (SCDOT) District Six office conducted a safety review along US 17 (North Highway 17) from MP 48.5 (just south of Seewee Road) to MP 60.2 (just north of Steed Creek Road) in Charleston County. The goal of the review was to identify areas with crash patterns that could be corrected with signing and/or pavement marking improvements. Additionally, a general review of the roadway was performed to identify issues related to safety throughout the corridor.

II. Crash Data Analysis

The collision history was reviewed for the entire roadway for the period of January 1, 2014 to December 31, 2016. The following table provides a summary of the crashes by type during this three-year period, as well as a summary of crash severity.

Crash Type	Number of Crashes	Crash Frequency (crashes/mile/year)
Angle	21	0.60
Rear End	14	0.40
Run off Road	26	0.74
Sideswipe	2	0.06
Head On	2	0.06
Animal	21	0.60
Other	5	0.14
Total Crashes	91	2.60
Crash Severity	Number of Crashes	Crash Frequency (crashes/mile/year)
Fatal	4	0.11
Injury	40	1.14
Property Damage	47	1.34

The crash statistics for the 11.7-mile US 17 corridor were compared to the statewide average for similar corridors. While every roadway is different based on several factors such as horizontal alignment, number of access points, and general roadside conditions, this comparison can be used to identify corridors with statistically high crash frequency. It was determined that the US 17 crash statistics are similar to the statewide average for each crash type, except for animal collisions. There were 21 reported collisions with animals (deer) during the three-year study period. This does not

meet the minimum guideline of the department for posting deer warning signs. The animal collisions were dispersed along the 11.7-mile corridor over the three years without a concentration in one area. For crash severity, the percentage of fatal and injury crashes were slightly higher than expected based on statewide averages and the percentage of property damage only (PDO) crashes were lower than expected.

Four fatal crashes occurred between January 2014 and December 2016. Of the four crashes, one occurred at the intersection with Guerins Bridge Road and is discussed further later in this report. Two of the other three crashes were run-off-the-road type collisions, with one of these specifically involving an estimated speed above the speed limit. The fourth crash resulted from a driver traveling the wrong way on US 17 and striking another vehicle head on.

III. Roadway Geometric, Signing, and Marking Field Review

Field reviews were conducted by SCDOT's traffic engineering staff to evaluate specific needs along the corridor. Existing signing, pavement markings, and sight distance were evaluated throughout the corridor and at specific intersections. As a result of the review, it was determined that a standard signing application for divided highways will be applied to the five intersections listed below to provide consistency and proper guidance for motorists. It was noted in the field that the signing along the corridor was not consistent from intersection to intersection. Any signs currently in place that are included in the signing application will remain. Any signs that are no longer applicable will be removed. All warning signs will consist of Type XI Sheeting. This type of sheeting was designed to improve visibility for both long and short range distances. Also, the five intersections included in the review are missing skip lines along the edge of travel way. These will be restriped, as well.

US 17 and S-584 (Seewee Road/Fifteen Mile Landing Road)

The intersection of US 17 and Sewee Road/Fifteen Mile Landing Road was recently resurfaced. The resurfacing project included adding pavement markings for all turn lanes on US 17 and adding skip lines to better define the edge of travel way through the intersection. During the field review, it was noted that the 4" solid yellow line between the two "No Parking Highway Side of Yellow Line" signs in front of the Seewee Restaurant was missing. The 4" solid yellow line will be reinstalled. The three-year collision history revealed four reported collisions at this intersection. All four collisions were angle collisions, with one occurring in 2014 and three in 2015. The four collisions occurred prior to the resurfacing project. Sight distance was reviewed and determined to not be a factor at this intersection.

In order to provide consistency and proper guidance for motorists, a standard signing application for divided highways will be installed at this intersection. For the side streets, (2) One Way signs posted back to back and visible to each side street approach will be installed on each existing assembly above the Stop sign, and (1) Divided

Highway Crossing sign will be installed on each assembly below the Stop sign. The existing One Way sign on US 17 southbound shoulder may be relocated and used for this application. On US 17, there are currently dual Do Not Enter signs on the northbound approach and (1) Do Not Enter sign on the southbound approach. Due to the lack of shoulder on this approach to install a sign, only one Do Not Enter sign will continue to be used in this location. Dual Wrong Way signs will be installed following the Do Not Enter signs for the northbound approach and one Wrong Way sign will be installed following the Do Not Enter sign on the southbound approach. In order to provide motorists with advance warning of the intersection, (2) new Intersection Warning signs with Type XI sheeting will be installed on each US 17 approach, one sign on the left side of the roadway and one sign on the right side of the roadway. The sign assembly on the right side of the roadway for each approach will include an Advance Street Name plaque.

US 17 and S-98 (Guerins Bridge Road)

Guerins Bridge Road intersects US 17 to form a T-type intersection. The three-year collision history revealed three reported collisions at this intersection. All three collisions were angle collisions, with two occurring in 2014 and one in 2015. One of the crashes in 2014 was a fatality that resulted from the driver on Guerins Bridge Road failing to yield right of way. Based on information from the crash report, it is believed that the driver stopped at the stop sign and then attempted to proceed through the intersection. The vehicle approaching the intersection on US 17 southbound was unable to stop and struck the vehicle exiting Guerins Bridge Road. Sight distance was reviewed and determined to not be a factor at this intersection.

A standard signing application for a divided highway at a T-type intersection will be installed at this location. The Guerins Bridge Road approach currently has a Stop Ahead warning sign, an oversized Stop sign, and a Divided Highway Crossing sign in place. The existing Divided Highway Crossing sign will be replaced with the correct sign showing a T-type intersection instead of a cross type intersection. Also, (1) One Way sign will be added above the Stop sign to enter US 17 southbound and (1) One Way sign will be installed on the opposite side of the street to enter US 17 northbound. On US 17, (1) Do Not Enter sign will be installed on the shoulder of each US 17 approach to supplement the existing Do Not Enter signs in the medians. Dual Wrong Way signs will be installed following the Do Not Enter signs on each approach. In addition, (2) new Intersection Warning signs with Type XI sheeting will be installed on each US 17 approach, one sign on the left side of the roadway and one sign on the right side of the roadway. The sign assembly on the right side of the roadway for each approach will include an Advance Street Name plaque. The existing Intersection Warning sign on the left side of US 17 northbound with Advance Street Name plaque will be removed and replaced. It was noted that there is a Hurricane Evacuation sign approximately 20 feet in front of a Curve Warning sign just past the intersection in the southbound direction. This sign will be moved to behind the Curve Warning sign with at least 100 feet spacing between the signs. In its current location the Hurricane Evacuation sign obstructs the motorist's view of the Curve Warning sign.

US 17 and S-432 (Doar Road -South Intersection)

The US 17 and Doar Road (south) intersection is also a T-type intersection. A vacant office building is on the opposite side of the road, which has an access drive that aligns with Doar Road. For purposes of this report, that access drive will not be included. The three-year collision history revealed one reported collision at this intersection. The collision was a single car run-off-the-road which occurred in 2014. Sight distance was reviewed and determined to not be a factor at this intersection.

A standard signing application for a divided highway at a T-type intersection will be installed at this location. On the Doar Road approach, (1) One Way sign will be added above the existing Stop sign and (1) Divided Highway Crossing sign will be added below the Stop sign. The existing One Way sign on the shoulder of US 17 southbound will remain. On US 17, a series of (2) Do Not Enter and (2) Wrong Way signs will be installed along the southbound and northbound approaches to prohibit traffic from entering a restricted roadway. In addition, (2) new Intersection Warning signs with Type XI sheeting will be installed on each US 17 approach, one sign on the left side of the roadway and one sign on the right side of the roadway. The sign assembly on the right side of the roadway for each approach will include an Advance Street Name plaque.

US 17 and S-432 (Doar Road -North Intersection)

Doar Road (north) and Thames Road intersect US 17 to form an offset intersection. The distance between the two side streets is approximately 75 feet and the median opening is approximately 170 feet. Due to the extremely low AADT (25 vpd) on Thames Road, the signing on Thames Road was determined to be sufficient. However, Intersection Warning signs on US 17 will indicate both side street intersection approaches. The three-year collision history revealed one reported collision at this intersection. The collision was a rear end which occurred in 2015. Sight distance was reviewed and determined to not be a factor at this intersection.

A standard signing application for a divided highway at a T-type intersection will be installed at this location. On the Doar Road approach, (1) One Way sign will be added above the existing Stop sign and (1) Divided Highway Crossing sign will be added below the Stop sign. The existing One Way sign on the shoulder of US 17 southbound will remain. On US 17, a series of (2) Do Not Enter and (2) Wrong Way signs will be installed along the southbound and northbound approaches to prohibit traffic from entering a restricted roadway. In addition, (2) new Intersection Warning signs with Type XI sheeting will be installed on each US 17 approach, one sign on the left side of the roadway and one sign on the right side of the roadway. The warning signs will indicate the presence of an offset intersection. The sign assembly on the right side of the roadway for each approach will include an Advance Street Name plaque.

US 17 and S-1032 (Steed Creek Road)

US 17 and Steed Creek Road intersect to form a T-type intersection. US 17 southbound has a channelized right-turn deceleration lane and a channelized acceleration lane for vehicles making a right turn from Steed Creek Road. US 17 northbound has a left-turn lane onto Steed Creek Road. In recent years, the signing along the Steed Creek Road approach has been updated to include dual Stop Ahead warning signs, dual oversized Stop signs, and dual Divided Highway Crossing signs. It was noted that one of the Divided Highway Crossing signs was damaged and will be replaced. On US 17 northbound, a barricade sign with red reflective panels was installed opposite the side street approach to alert motorists that this is a T-type intersection. Also, a Yield sign and a yield bar pavement marking were installed on the US 17 southbound deceleration lane onto Steed Creek Road. The three-year collision history revealed two reported collisions at this intersection. One collision was an angle crash that resulted from the driver disregarding the stop sign on Steed Creek Road in 2014. The other collision was a run-off-the-road crash that resulted from the driver driving too fast to negotiate the right turn from Steed Creek Road in 2016. Sight distance was reviewed and determined to not be a factor at this intersection.

A standard signing application for a divided highway at a T-type intersection will be installed at this location. On the Steed Creek Road approach, (1) One Way sign will be installed above each of the Stop signs. On the opposite side of US 17, (1) One Way sign will be installed along the southbound shoulder. On US 17, a series of (2) Do Not Enter and (2) Wrong Way signs will be installed along the southbound and northbound approaches to prohibit traffic from entering a restricted roadway. In addition, (2) new Intersection Warning signs with Type XI sheeting will be installed on each US 17 approach, one sign on the left side of the roadway and one sign on the right side of the roadway. The sign assembly on the right side of the roadway for each approach will include an Advance Street Name plaque. The existing Intersection Warning signs and Advance Street Name plaques along US 17 will be removed and replaced.

IV. Summary

At the request of the Town of Awendaw, SCDOT conducted a safety review along US 17 (North Highway 17) from MP 48.5 (just south of Seewee Road) to MP 60.2 (just north of Steed Creek Road) in Charleston. The goal of the review was to identify areas with crash patterns that could be corrected with signing and/or pavement marking improvements. Additionally, a general review of the roadway was performed to identify potential safety issues throughout the corridor. As a result of the review, it was determined that a standard signing application for divided highways will be applied to the five intersections listed in the report to provide consistency and proper guidance for motorists. Also, new dual Intersection Warning signs with Advance Street Name plaques and Type XI sheeting will be installed along all US 17 approaches to the five intersections included in this review. In addition, all intersections will be restriped with skip lines along the edge of travel way.

HMMS # 38442 MP 48.72 (Signing) US 17 @ S-584 Seewee Rd/Fifteen Mile Landing Rd
HMMS # 39142 (Pavement Markings) US 17 @ S-584 Seewee Rd/Fifteen Mile Landing Rd
 ➤ Refresh 4" white mini skips through the intersection as noted.
 ➤ Install approx. 175' solid 4" yellow line between the two "No Parking Highway side of Yellow line" on the restaurant side of US 17.

HMMS # 42508 (Side Street signing)



R5-1-36
Existing



W2-1-36
NEED (4) signs
TYPE XI Sheeting



(2) W16-18P
TYPE XI
Sheeting



R6-3-30
(2) Signs

HMMS WO # 42508
R6-1-36L
R6-1-36R

Install signs above
existing stop signs
on Seewee Rd approaches
R1-1-36

R6-3-30 Install below
existing stop signs on
Seewee Rd approaches



R5-1a-36
Install (3) signs
100' from
"DO Not Enter"
signs

HMMS # 38442 (Signing MP=49.6) US 17 @ S-98 (Guerins Bridge Rd)

HMMS # 39142 (Pavement Markings)

- Refresh mini skips through the intersection with 4" white mini skips for the turn lane and yellow mini skips were isn't a turn lane.

HMMS # 42521 (Side Street Signing)



(2) R5-1-36 signs are needed
(2) R5-1-36 existing signs



R5-1a-36
Install (4) signs
100' from "DO
Not Enter"
signs



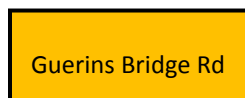
HMMS wo # 4521
R6-1-36R
Install sign above
existing stop sign
on Guerins Bridge Rd
approach.

R1-1-36

R6-3a-30 Install below
existing stop sign on
Guerins Bridge Rd.
approach.



W2-2-36
NEED (4) signs
TYPE XI Sheeting
*Remove Existing sign
located in the NB
median*



(2) W16-18P
TYPE XI
Sheeting

***Relocate Hurricane
Evac sign that is in
front of the Curve
Warning sign approx.
100-feet behind the
Curve Warning sign.*



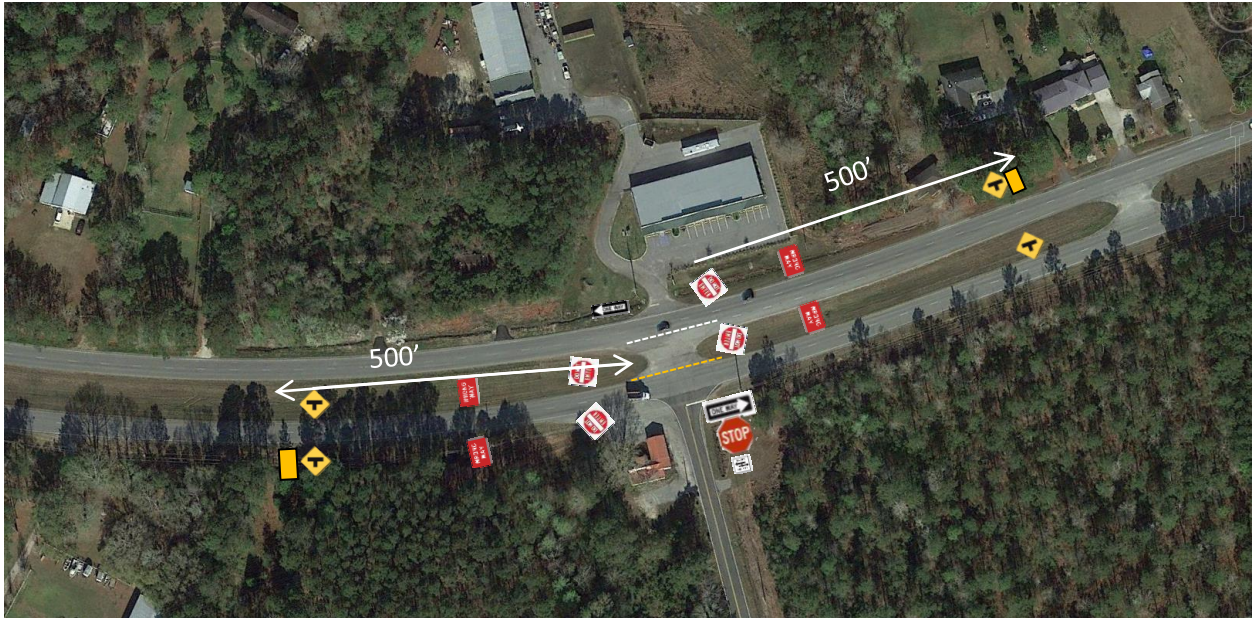
Install R6-1-36R on opposite
side of Guerins Bridge Rd. (US
17 NB)

HMMS # 38442 (Signing MP 54.8) US 17 @ S-432 (Doar Rd) South Intersection

HMMS # 39142 (Pavement Markings)

- Refresh mini skips through the intersection with 4" white mini skips for the turn lane and yellow mini skips were isn't a turn lane.

HMMS # 42535 (Side Street Signing)



(4) R5-1-36 signs are needed



R5-1a-36
Install (4) signs
100' from
"DO Not Enter"
signs



HMMS # 42535
Install R6-1-36R above existing
stop sign
on Doar Rd approach.



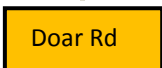
R1-1-36



R6-3a-30 Install below
existing stop sign on
Doar Rd approach.



W2-2-36
(4) signs
TYPE XI Sheeting



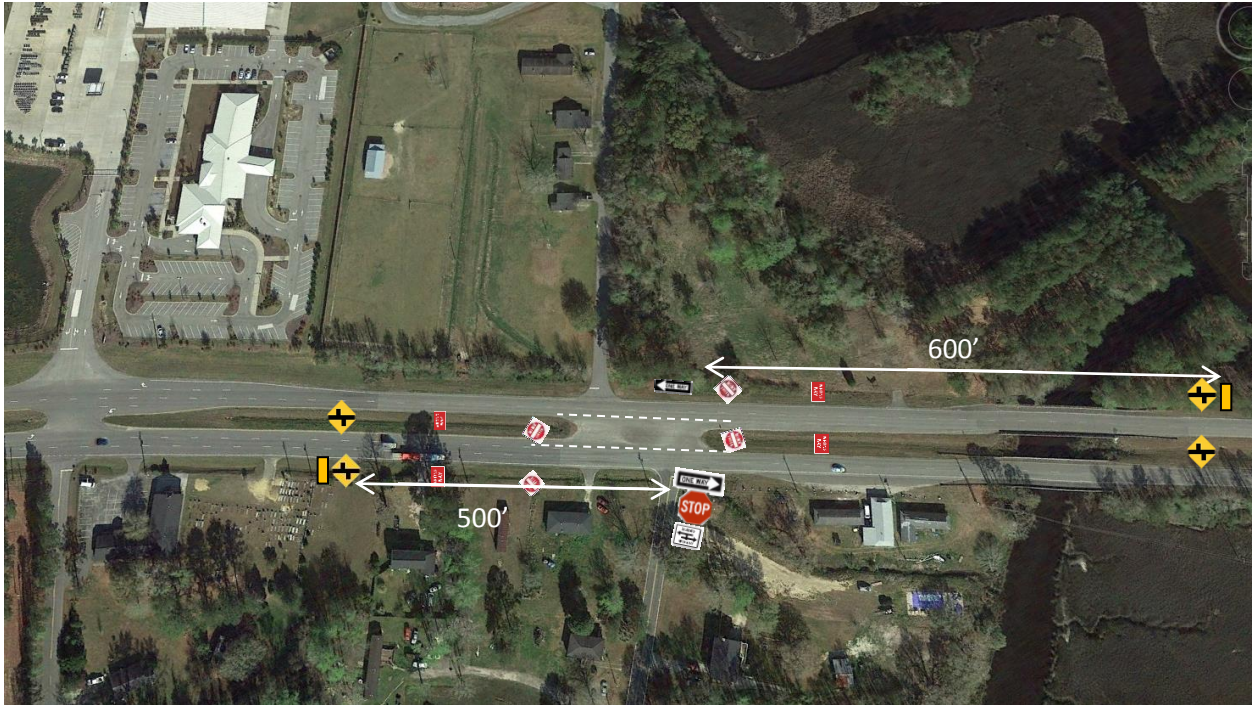
(2) W16-18P
TYPE XI
Sheeting

HMMS #38442 (Signing MP 57.7) US 17 @ S-432 (Doar Rd) North Intersection

HMMS # 39142 (Pavement Markings)

➤ Refresh mini skips through the intersection with 4" white mini skips for the turn lanes.

HMMS # 42535 (Side Street Signing)



(4) R5-1-36 signs are needed



R5-1a-36
Install (4) signs
100' from
"DO Not Enter"
signs



HMMS # 42535

Install R6-1-36R above existing
stop sign on the Doar Rd
approach



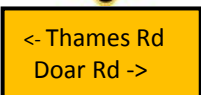
R1-1-36



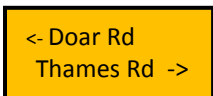
R6-3a-30 Install below
existing stop sign on
Doar Rd approach



W2-7L-36
(4) signs
TYPE XI Sheeting



(1) W16-18aP
TYPE XI Sheeting



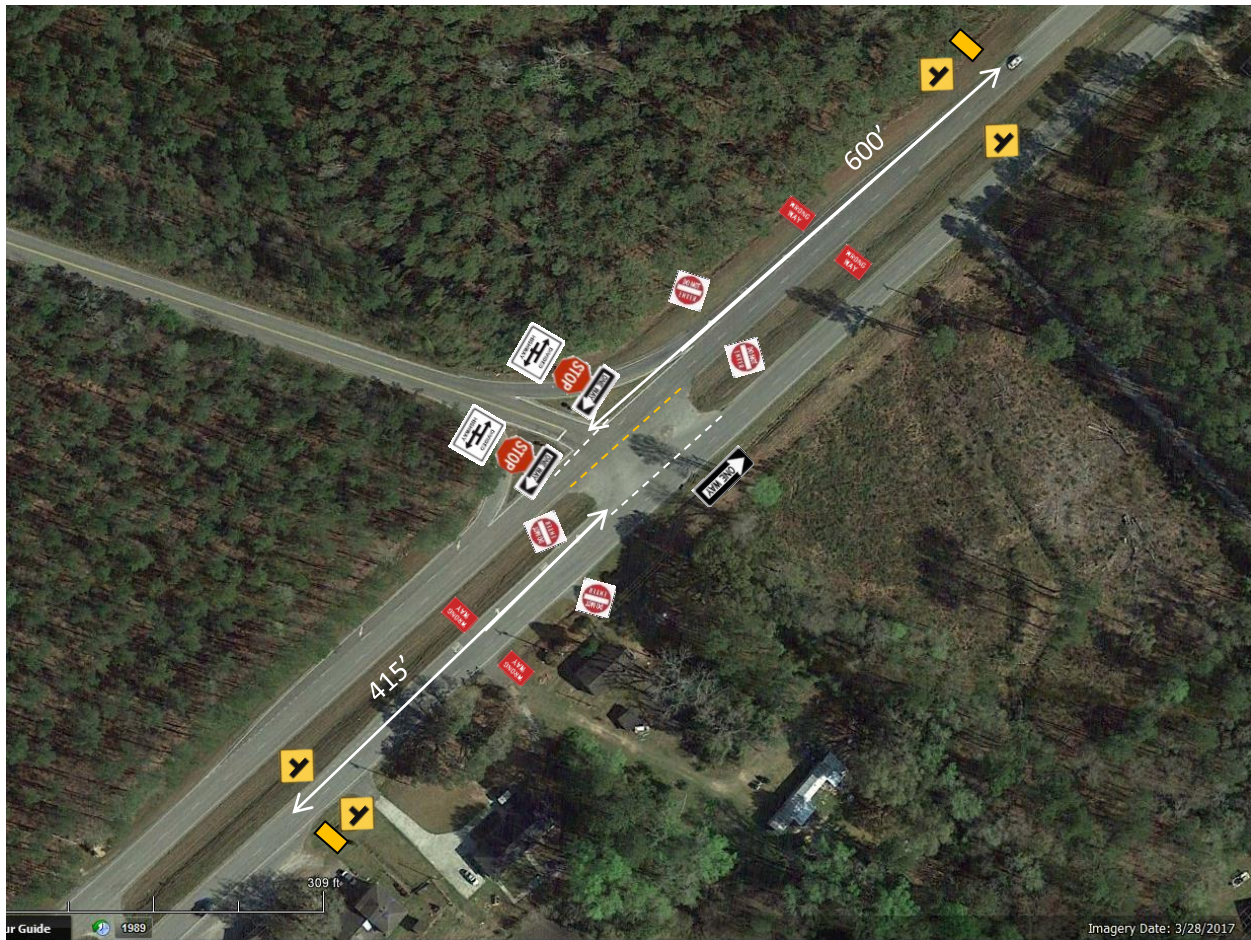
(1) W16-18aP
TYPE XI Sheeting

HMMS #38442 (Signing MP 58.3) US 17 @ S-1032 (Steed Creek Rd)

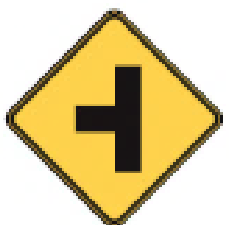
HMMS # 39142 (Pavement Markings)

- Refresh mini skips through the intersection with 4" white mini skips for the turn lane, the edge of the travel lane, and yellow mini skips were isn't a turn lane.

HMMS # 42577 (Side Street Signing)



(4) R5-1-36 signs are needed



Steed Creek Rd



R5-1a-36
Install (4) signs
100' from
"DO Not Enter"
signs

W2-2-36
(4) signs
TYPE XI Sheeting

(2) W16-18P
TYPE XI
Sheeting



R1-1-48



R6-3a-30 Install below
existing stop signs on
Steed Creek Rd. approach.



Install R6-1-36L left of the TYPE III Barricades on opposite side of Steed Creek Rd. (US 17 NB)

HMMS # 42577

Install R6-1-36R above existing stop signs on Steed Creek RD approach.

MISSING

US 17 (North Highway 17) - Speed Study

A speed study was conducted on US 17 to determine if the existing speed limit of 60 mph should be lowered. This study consisted of a review of land use and development, a collision history analysis, and a vehicle radar sample to collect speed data. These elements were reviewed and used in combination with guidance from the Federal Highway Administration (FHWA) analysis program, USLIMITS2 to provide a comprehensive overview to determine the appropriate speed limit.

The area studied was along US 17 in Charleston County. The study area extended approximately 0.5-mile in each direction from the intersection of US 17 and Fifteen Mile Landing Road/Seewee Road for a total study segment of one mile. This section of US 17 is classified as a rural principal arterial. The roadway intersects thirteen residential/commercial driveways. The intersection at Fifteen Mile Landing Road/Seewee Road is a two-way stop controlled intersection. The roadway consists of two 12-foot travel lanes in each direction separated by a grassed median. The shoulders of the roadway are paved, approximately 2 to 6-foot wide.

The radar speed survey included a total of 100 vehicles. The speeds ranged from 47 mph to 83 mph. The 85th percentile speed, a statistical measure employed by engineers to determine what most prudent drivers find to be an appropriate and comfortable speed, was calculated to be 66 mph. The 50th percentile speed was calculated to be 61 mph. Our study found that 54 percent of vehicles sampled exceeded the posted speed limit.

An analysis of the collision history was performed using information from the Department of Public Safety database. The review period was from January 2017 to December 2019. During this time period, 23 collisions were reported within the study section. There were 10 collisions reported in 2017, seven in 2018, and six in 2019. Angle collisions were the most common manner of collision, followed by rear end and run off the road collisions. One of the collisions resulted in a fatality. The fatality was the result of the driver of a motorcycle turning from Fifteen Mile Landing Road and pulling out in front of an oncoming vehicle on US 17. Some of the causes for the collisions throughout the studied corridor were cited as failure to yield right of way, following too closely, animal related, and inattention.

A corridor safety review along US 17 was performed in the fall of 2017 and included the study area. As a result of the review, signing and pavement marking improvements were made at intersections throughout the corridor including the intersection of US 17 and Fifteen Mile Landing Road/Seewee Road. The fatal collision that occurred at the intersection was prior to the signing and marking improvements being implemented.

A detailed crash analysis was conducted for the intersection of US 17 and Fifteen Mile Landing Road considering the crash reports between January 2017 and December 2019. Based on that review, five collisions occurred at the intersection; however, two of the five collisions occurred prior to signing and marking improvements. Of the remaining three crashes, two involved vehicles accessing the median break, including one vehicle parked in the median with its rear sticking into the US 17 travel lane. None of the collisions which occurred after the

signing and marking improvements involved vehicles on the eastbound Fifteen Mile Landing Road approach to the intersection. Therefore, there are no further recommendations for improvements to the intersection.

Recommendations:

Based on our speed analysis, the existing 60 mph speed limit is appropriate for this section of roadway. As a result, a reduction in speed limit is not recommended at this time. Additionally, the crash analysis for the intersection of US 17 and Fifteen Mile Landing Road did not reveal a pattern of collisions that occurred after the signing and marking improvements which were made in 2017.

Anastopoulos

Traffic Engineering

Reviewed By: AP 4/23/2020

Checked By: JJ 4/23/2020

SHORT COUNTS

File Name : US 17 @ 15 Mile Landing-Seewee Rd

Site Code :

Start Date : 3/15/2022

Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

Start Time	US 17 From North				Seewee Rd From East				US 17 From South				15 Mile Landing Rd From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00 AM	1	150	0	0	18	0	1	0	0	57	6	0	1	0	0	0	234
07:15 AM	1	139	0	0	21	0	0	0	0	75	4	0	0	0	3	0	243
07:30 AM	0	155	0	0	9	0	1	0	1	79	9	0	1	0	4	0	259
07:45 AM	1	192	0	0	11	0	1	0	1	83	9	0	0	0	2	0	300
Total	3	636	0	0	59	0	3	0	2	294	28	0	2	0	9	0	1036
08:00 AM	2	177	0	0	22	0	3	0	0	78	9	0	0	0	0	0	291
08:15 AM	0	160	2	0	17	0	1	0	1	72	7	0	1	0	1	0	262
08:30 AM	3	143	2	0	7	0	1	0	3	86	8	0	0	0	2	0	255
08:45 AM	1	153	0	0	16	0	1	0	0	89	8	0	0	1	0	0	269
Total	6	633	4	0	62	0	6	0	4	325	32	0	1	1	3	0	1077
09:00 AM	6	151	0	0	8	0	0	0	2	81	5	0	0	0	1	0	254
09:15 AM	1	164	0	0	8	0	4	0	1	84	8	2	0	0	4	1	277
09:30 AM	1	161	0	0	11	0	4	0	0	115	11	0	0	0	0	0	303
09:45 AM	5	158	0	0	14	0	2	0	0	105	10	0	0	0	1	0	295
Total	13	634	0	0	41	0	10	0	3	385	34	2	0	0	6	1	1129
10:00 AM	6	124	0	0	6	0	0	0	0	105	5	0	0	0	4	0	250
10:15 AM	5	130	0	0	4	0	3	0	0	107	9	0	0	0	1	0	259
10:30 AM	5	173	1	0	9	0	0	0	2	114	10	0	0	2	0	0	316
10:45 AM	3	148	1	0	14	0	1	0	2	113	9	0	0	0	0	0	291
Total	19	575	2	0	33	0	4	0	4	439	33	0	0	2	5	0	1116
11:00 AM	5	138	1	0	8	0	3	0	2	119	4	0	1	0	1	0	282
11:15 AM	6	150	0	0	9	0	1	0	0	107	7	0	2	0	2	0	284
11:30 AM	5	146	2	0	16	0	0	0	1	97	7	0	0	0	2	0	276
11:45 AM	5	143	1	0	8	0	1	0	5	122	13	0	0	0	1	0	299
Total	21	577	4	0	41	0	5	0	8	445	31	0	3	0	6	0	1141
12:00 PM	2	132	1	0	12	2	2	0	1	120	9	0	1	0	2	0	284
12:15 PM	5	143	1	0	11	1	3	0	7	133	13	0	2	1	0	2	322
12:30 PM	7	142	0	0	12	1	3	0	6	117	15	0	2	0	5	0	310
12:45 PM	5	119	1	0	14	0	1	0	0	144	11	0	1	0	4	0	300
Total	19	536	3	0	49	4	9	0	14	514	48	0	6	1	11	2	1216
01:00 PM	7	123	1	0	11	0	4	0	6	134	8	0	3	1	3	0	301
01:15 PM	6	145	1	0	10	0	2	0	3	128	5	0	1	1	3	0	305
01:30 PM	7	151	1	0	13	1	4	0	1	147	13	0	3	0	4	0	345
01:45 PM	3	111	2	0	12	0	3	0	2	125	8	0	0	0	2	0	268
Total	23	530	5	0	46	1	13	0	12	534	34	0	7	2	12	0	1219
02:00 PM	4	120	0	0	4	1	0	0	2	157	18	0	0	0	2	0	308
02:15 PM	7	121	0	0	12	0	2	0	1	146	21	0	1	0	1	0	312
02:30 PM	5	120	0	0	9	0	4	0	1	141	7	0	0	0	1	0	288
02:45 PM	3	106	0	0	15	1	3	0	2	155	11	0	2	1	1	0	300
Total	19	467	0	0	40	2	9	0	6	599	57	0	3	1	5	0	1208
03:00 PM	5	112	0	0	13	1	0	0	3	156	12	0	1	1	1	0	305
03:15 PM	7	125	0	0	16	1	1	0	3	152	10	0	0	0	1	0	316
03:30 PM	2	114	0	0	12	0	2	0	3	167	10	0	0	1	0	0	311
03:45 PM	4	116	0	0	7	0	0	0	3	188	10	0	1	0	0	0	329
Total	18	467	0	0	48	2	3	0	12	663	42	0	2	2	2	0	1261
04:00 PM	7	92	1	0	9	0	3	0	1	197	20	0	0	0	0	0	330

SHORT COUNTS

File Name : US 17 @ 15 Mile Landing-Seewee Rd

Site Code :

Start Date : 3/15/2022

Page No : 2

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

Start Time	US 17 From North				Seewee Rd From East				US 17 From South				15 Mile Landing Rd From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
04:15 PM	5	100	0	0	14	0	2	0	6	187	24	1	1	1	4	1	346
04:30 PM	5	97	1	0	13	1	1	0	4	167	17	1	0	0	3	1	311
04:45 PM	2	110	0	0	6	0	6	0	2	180	13	0	1	1	2	0	323
Total	19	399	2	0	42	1	12	0	13	731	74	2	2	2	9	2	1310
05:00 PM	5	115	0	0	12	0	2	0	6	166	16	0	1	1	3	0	327
05:15 PM	4	107	0	0	12	0	2	0	2	182	12	1	0	0	0	1	323
05:30 PM	5	65	0	0	15	0	3	0	5	173	12	1	1	1	0	1	282
05:45 PM	6	60	1	0	8	0	1	0	7	174	14	0	0	0	1	0	272
Total	20	347	1	0	47	0	8	0	20	695	54	2	2	2	4	2	1204
06:00 PM	6	101	1	0	10	1	6	0	8	167	20	0	2	0	3	0	325
06:15 PM	5	105	2	0	11	1	4	0	8	156	11	0	0	1	2	3	309
06:30 PM	5	71	0	0	18	1	1	0	4	118	12	0	0	2	1	0	233
06:45 PM	3	62	0	0	5	0	1	0	3	92	17	0	2	0	2	2	189
Total	19	339	3	0	44	3	12	0	23	533	60	0	4	3	8	5	1056
Grand Total	199	6140	24	0	552	13	94	0	121	6157	527	6	32	16	80	12	13973
Apprch %	3.1	96.5	0.4	0	83.8	2	14.3	0	1.8	90.4	7.7	0.1	22.9	11.4	57.1	8.6	
Total %	1.4	43.9	0.2	0	4	0.1	0.7	0	0.9	44.1	3.8	0	0.2	0.1	0.6	0.1	
Passenger Vehicles	184	5736	24	0	531	10	81	0	120	5769	505	6	30	15	77	12	13100
% Passenger Vehicles	92.5	93.4	100	0	96.2	76.9	86.2	0	99.2	93.7	95.8	100	93.8	93.8	96.2	100	93.8
Heavy Vehicles	15	372	0	0	19	2	12	0	1	348	19	0	1	1	3	0	793
% Heavy Vehicles	7.5	6.1	0	0	3.4	15.4	12.8	0	0.8	5.7	3.6	0	3.1	6.2	3.8	0	5.7
Buses	0	32	0	0	2	1	1	0	0	40	3	0	1	0	0	0	80
% Buses	0	0.5	0	0	0.4	7.7	1.1	0	0	0.6	0.6	0	3.1	0	0	0	0.6

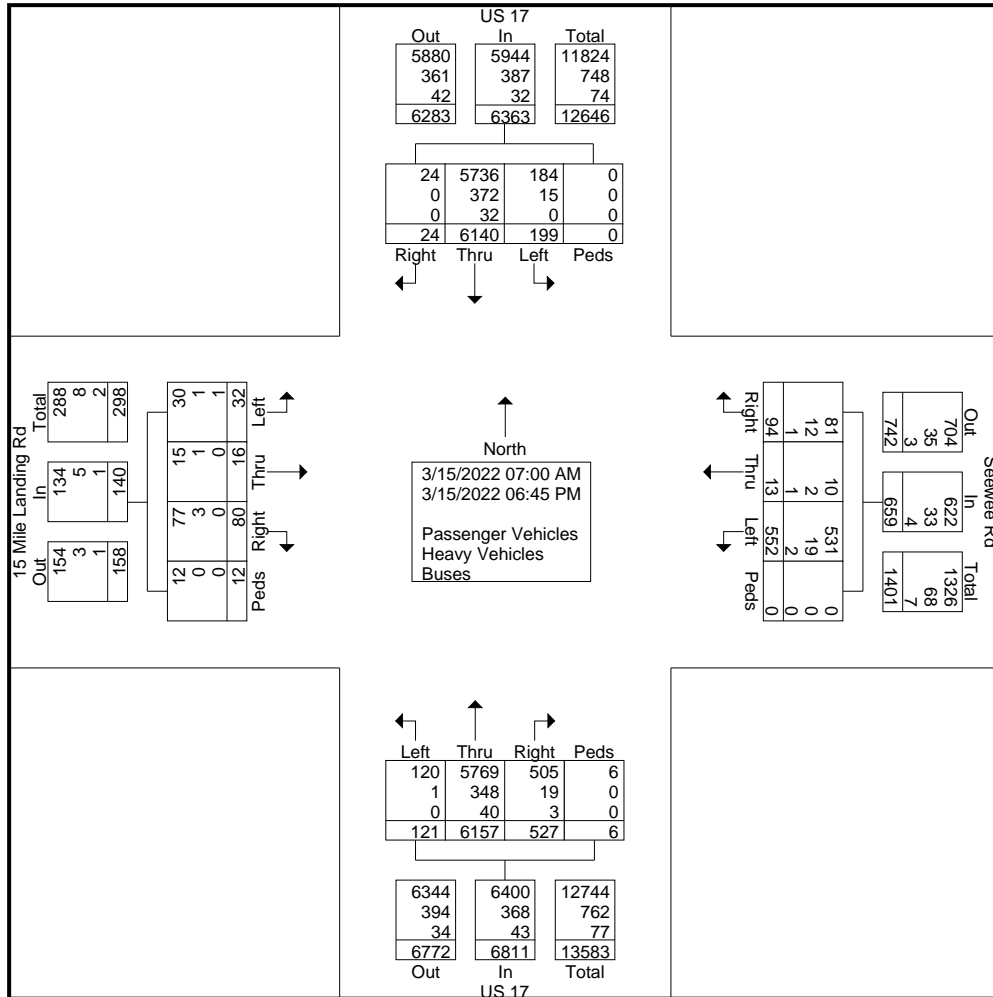
SHORT COUNTS

File Name : US 17 @ 15 Mile Landing-Seewee Rd

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SHORT COUNTS

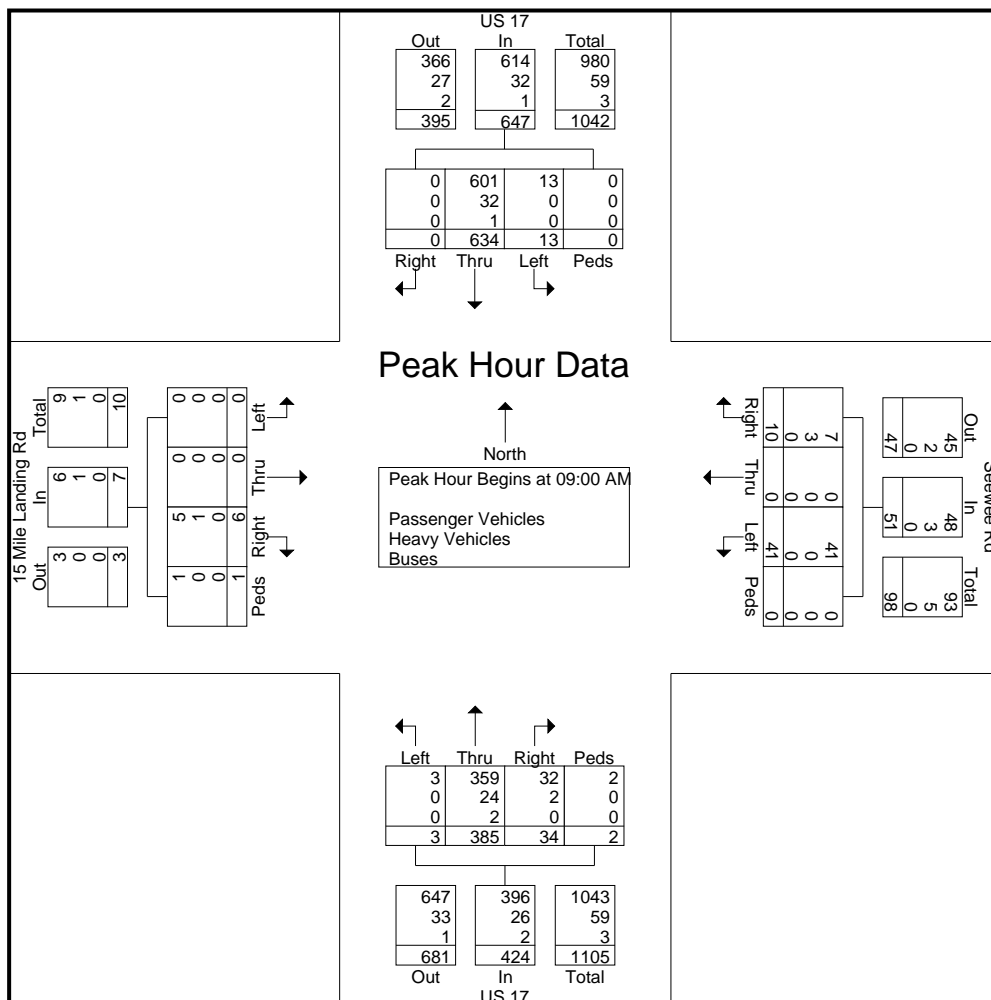
File Name : US 17 @ 15 Mile Landing-Seewee Rd

Site Code :

Start Date : 3/15/2022

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Start Time	US 17 From North					Seewee Rd From East					US 17 From South					15 Mile Landing Rd From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 09:00 AM																					
09:00 AM	6	151	0	0	157	8	0	0	0	8	2	81	5	0	88	0	0	1	0	1	254
09:15 AM	1	164	0	0	165	8	0	4	0	12	1	84	8	2	95	0	0	4	1	5	277
09:30 AM	1	161	0	0	162	11	0	4	0	15	0	115	11	0	126	0	0	0	0	0	303
09:45 AM	5	158	0	0	163	14	0	2	0	16	0	105	10	0	115	0	0	1	0	1	295
Total Volume	13	634	0	0	647	41	0	10	0	51	3	385	34	2	424	0	0	6	1	7	1129
% App. Total	2	98	0	0		80.4	0	19.6	0		0.7	90.8	8	0.5		0	0	85.7	14.3		
PHF	.542	.966	.000	.000	.980	.732	.000	.625	.000	.797	.375	.837	.773	.250	.841	.000	.000	.375	.250	.350	.932
Passenger Vehicles	13	601	0	0	614	41	0	7	0	48	3	359	32	2	396	0	0	5	1	6	1064
% Passenger Vehicles	100	94.8	0	0	94.9	100	0	70.0	0	94.1	100	93.2	94.1	100	93.4	0	0	83.3	100	85.7	94.2
Heavy Vehicles	0	32	0	0	32	0	0	3	0	3	0	24	2	0	26	0	0	1	0	1	62
% Heavy Vehicles	0	5.0	0	0	4.9	0	0	30.0	0	5.9	0	6.2	5.9	0	6.1	0	0	16.7	0	14.3	5.5
Buses	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
% Buses	0	0.2	0	0	0.2	0	0	0	0	0	0	0.5	0	0	0.5	0	0	0	0	0	0.3



SHORT COUNTS

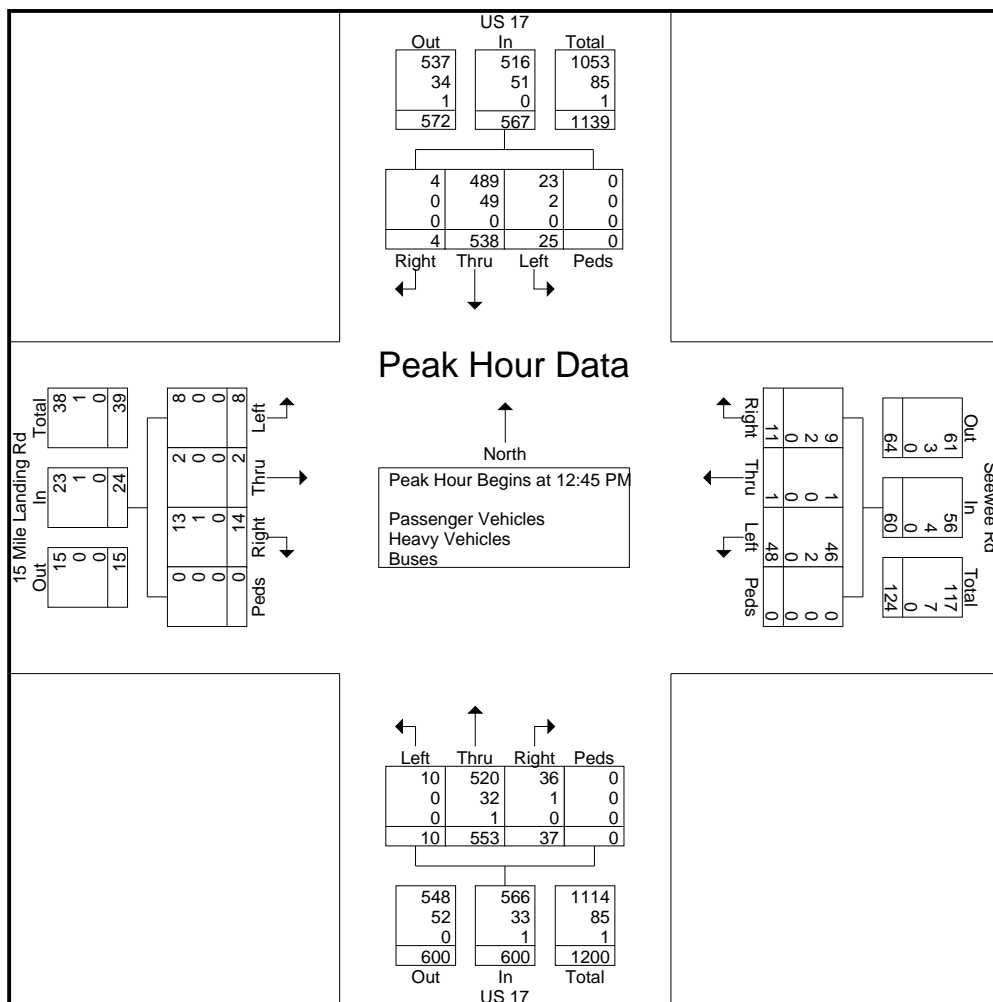
File Name : US 17 @ 15 Mile Landing-Seewee Rd

Site Code :

Start Date : 3/15/2022

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Start Time	US 17 From North					Seewee Rd From East					US 17 From South					15 Mile Landing Rd From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:45 PM																					
12:45 PM	5	119	1	0	125	14	0	1	0	15	0	144	11	0	155	1	0	4	0	5	300
01:00 PM	7	123	1	0	131	11	0	4	0	15	6	134	8	0	148	3	1	3	0	7	301
01:15 PM	6	145	1	0	152	10	0	2	0	12	3	128	5	0	136	1	1	3	0	5	305
01:30 PM	7	151	1	0	159	13	1	4	0	18	1	147	13	0	161	3	0	4	0	7	345
Total Volume	25	538	4	0	567	48	1	11	0	60	10	553	37	0	600	8	2	14	0	24	1251
% App. Total	4.4	94.9	0.7	0		80	1.7	18.3	0		1.7	92.2	6.2	0		33.3	8.3	58.3	0		
PHF	.893	.891	1.00	.000	.892	.857	.250	.688	.000	.833	.417	.940	.712	.000	.932	.667	.500	.875	.000	.857	.907
Passenger Vehicles	23	489	4	0	516	46	1	9	0	56	10	520	36	0	566	8	2	13	0	23	1161
% Passenger Vehicles	92.0	90.9	100	0	91.0	95.8	100	81.8	0	93.3	100	94.0	97.3	0	94.3	100	100	92.9	0	95.8	92.8
Heavy Vehicles	2	49	0	0	51	2	0	2	0	4	0	32	1	0	33	0	0	1	0	1	89
% Heavy Vehicles	8.0	9.1	0	0	9.0	4.2	0	18.2	0	6.7	0	5.8	2.7	0	5.5	0	0	7.1	0	4.2	7.1
Buses	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
% Buses	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0	0.1



SHORT COUNTS

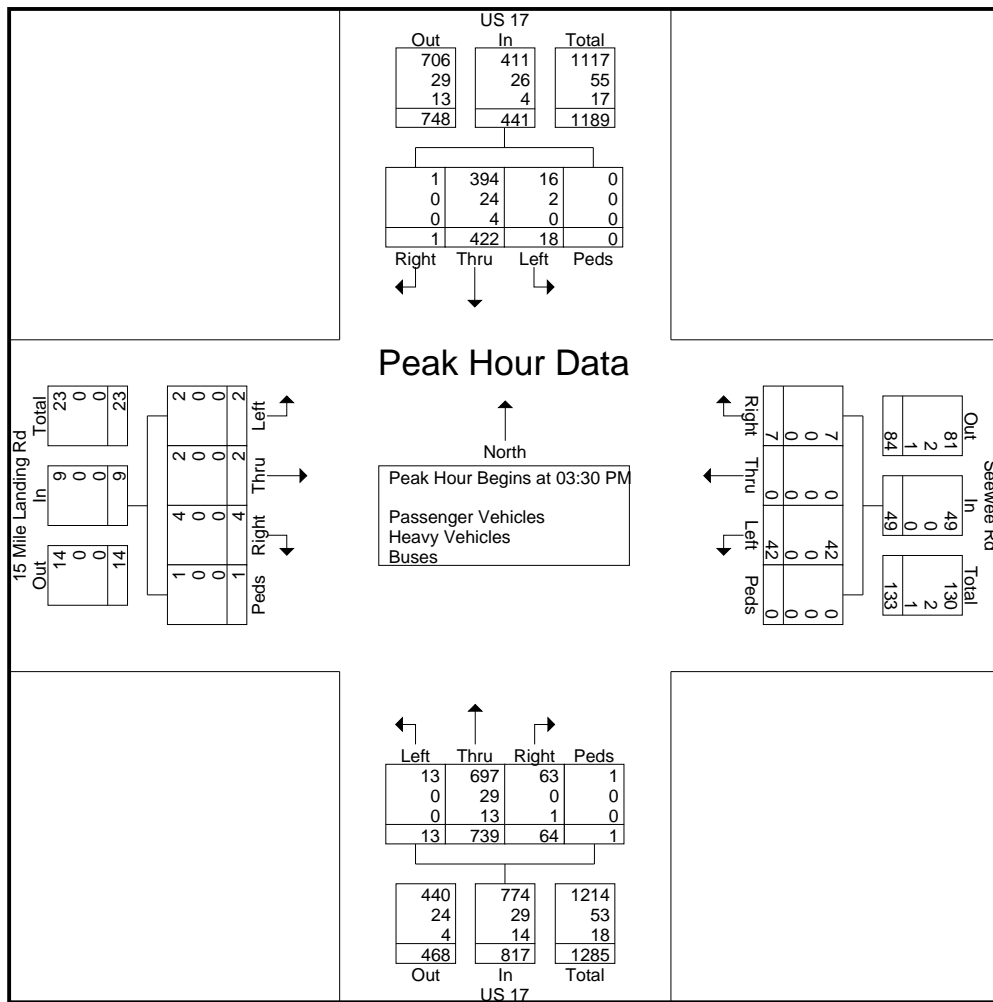
File Name : US 17 @ 15 Mile Landing-Seewee Rd

Site Code :

Start Date : 3/15/2022

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Start Time	US 17 From North					Seewee Rd From East					US 17 From South					15 Mile Landing Rd From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:30 PM																					
03:30 PM	2	114	0	0	116	12	0	2	0	14	3	167	10	0	180	0	1	0	0	1	311
03:45 PM	4	116	0	0	120	7	0	0	0	7	3	188	10	0	201	1	0	0	0	1	329
04:00 PM	7	92	1	0	100	9	0	3	0	12	1	197	20	0	218	0	0	0	0	0	330
04:15 PM	5	100	0	0	105	14	0	2	0	16	6	187	24	1	218	1	1	4	1	7	346
Total Volume	18	422	1	0	441	42	0	7	0	49	13	739	64	1	817	2	2	4	1	9	1316
% App. Total	4.1	95.7	0.2	0		85.7	0	14.3	0		1.6	90.5	7.8	0.1		22.2	22.2	44.4	11.1		
PHF	.643	.909	.250	.000	.919	.750	.000	.583	.000	.766	.542	.938	.667	.250	.937	.500	.500	.250	.250	.321	.951
Passenger Vehicles	16	394	1	0	411	42	0	7	0	49	13	697	63	1	774	2	2	4	1	9	1243
% Passenger Vehicles	88.9	93.4	100	0	93.2	100	0	100	0	100	100	94.3	98.4	100	94.7	100	100	100	100	100	94.5
Heavy Vehicles	2	24	0	0	26	0	0	0	0	0	0	29	0	0	29	0	0	0	0	0	55
% Heavy Vehicles	11.1	5.7	0	0	5.9	0	0	0	0	0	0	3.9	0	0	3.5	0	0	0	0	0	4.2
Buses	0	4	0	0	4	0	0	0	0	0	0	13	1	0	14	0	0	0	0	0	18
% Buses	0	0.9	0	0	0.9	0	0	0	0	0	0	1.8	1.6	0	1.7	0	0	0	0	0	1.4



REFUSED	5
TEST TYPE	
BREATH – ALCOHOL ONLY	1
BLOOD	2
URINE	3
SERUM	4
OTHER	8
DRUG RESULTS	
AMPHETAMINES	1
COCAINE	2
MARIJUANA	3
OPIATES	4
PCP	5
NEGATIVE	7
OTHER	8

TABLE 4. CONTRIBUTING FACTORS

DRIVER	
DISREGARDED SIGN,SIGNALS, ETC.	01
DISTRACTED/INATTENTION	02
DRIVING TOO FAST FOR CONDITIONS	03
EXCEEDED AUTHORIZED SPEED LIMITS	04
FAILED TO YIELD RIGHT OF WAY	05
RAN OFF ROAD	06

FATIGUED/ASLEEP	07
FOLLOWED TOO CLOSELY	08
MADE AN IMPROPER TURN	09
MEDICAL RELATED	10
AGGRESSIVE OPERATION OF VEHICLE	12
OVER-CORRECTING/OVER STEERING	13
SWERVING TO AVOID OBJECT	14
WRONG SIDE OR WRONG WAY	15
UNDER THE INFLUENCE	16
VISION OBSCURED (WITHIN UNIT)	17
IMPROPER LANE USAGE/CHANGE	18
CELL PHONE	19
TEXTING	20
OTHER IMPROPER ACTION	28
UNKNOWN	29
ROADWAY	
DEBRIS	30
NON-HIGHWAY WORK	31
OBSTRUCTION IN ROADWAY	32
ROAD SURFACE CONDITION (I.E.,WET)	33
RUT, HOLES, BUMPS	34
SHOULDERS (NONE, LOW, SOFT, HIGH)	35
TRAFFIC CONTROL DEVICE (I.E., MISSING)	36

WORK ZONE (CONSTRUCTION/MAINTNEANCE/UTILITY)	37
WORN, TRAVEL, POLISHED SURFACE	38
OTHER	48
UNKOWN	49
NON-MOTORIST	
INNATTENTIVE	50
LYING AND/OR ILLEGALLY IN ROADWAY	51
FAILURE TO YIELD RIGHT OF WAY	52
NOT VISIBLE (DARK CLOTHING)	53
DISREGARDED SIGNS, SIGNALS, ETC.	54
IMPROPER CROSSING	55
DARTING	56
WRONG SIDE OF ROAD	57
OTHER	58
UNKNOWN	59
PEDESTRIAN/BICYCLIST UNDER THE INFLUENCE	66
PASSENGER UNDER INFLUENCE	67
ENVIRONMENT	
ANIMAL IN ROAD	60
GLARE	61
OBSTRUCTION	62
WEATHER CONDITION	63
OTHER	68

UNKNOWN	69
VEHICLE DEFECT	
BRAKES	70
STEERING	71
POWER PLANT	72
TIRES/WHEELS	73
LIGHTS	74
SIGNALS	75
WINDOWS/SHIELD	76
RESTRAINT SYSTEM	77
TRUCK COUPLING	78
CARGO	79
FUEL SYSTEM	80
OTHER	88
UNKNOWN	89

TABLE 5. COUNTY CODE LIST

ABBEVILLE	01	GREENWOOD	24
AIKEN	02	HAMPTON	25
ALLENDALE	03	HORRY	26
ANDERSON	04	JASPER	27
BAMBERG	05	KERSHAW	28
BARNWELL	06	LANCASTER	29
BEAUFORT	07	LAURENS	30

INTERSECTION VOLUME DEVELOPMENT

**US 17 at Seewee Road/Fifteen Mile Landing Road (Existing/No Build/Alternative 1)
AM PEAK HOUR (9:00 AM TO 10:00AM)**

Description	US 17 Northbound			US 17 Southbound			Fifteen Mile Landing Road Eastbound			Seewee Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2022 AM Volumes	3	385	34	13	634	0	0	0	6	41	0	10
Pedestrians	2			0			1			0		
Heavy Vehicle %	6.6%			5.1%			14.3%			5.9%		
Peak Hour Factor	0.84			0.98 (0.95)			0.35 (0.50)			0.80		
Annual Growth Rate	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Growth Factor	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158
2025 Background Traffic	3	446	39	15	734	0	0	0	7	47	0	12
New Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
2025 Buildout Total	3	446	39	15	734	0	0	0	7	47	0	12

MIDDAY PEAK HOUR (12:45 PM TO 1:45 PM)

Description	US 17 Northbound			US 17 Southbound			Fifteen Mile Landing Road Eastbound			Seewee Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2022 MIDDAY Volumes	10	553	37	25	538	4	8	2	14	48	1	11
Pedestrians	0			0			0			0		
Heavy Vehicle %	5.7%			9.0%			4.2%			6.7%		
Peak Hour Factor	0.93			0.89			0.86			0.83		
Annual Growth Rate	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Growth Factor	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158
2025 Background Traffic	12	640	43	29	623	5	9	2	16	56	1	13
New Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
2025 Buildout Total	12	640	43	29	623	5	9	2	16	56	1	13

PM PEAK HOUR (3:30 PM TO 4:30 PM)

Description	US 17 Northbound			US 17 Southbound			Fifteen Mile Landing Road Eastbound			Seewee Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2022 PM Volumes	13	739	64	18	422	1	2	2	4	42	0	7
Pedestrians	1			0			1			0		
Heavy Vehicle %	5.2%			6.8%			0% (2.0%)			0% (2.0%)		
Peak Hour Factor	0.94			0.92			0.32 (0.50)			0.77		
Annual Growth Rate	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Growth Factor	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158
2025 Background Traffic	15	855	74	21	489	1	2	2	5	49	0	8
New Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
2025 Buildout Total	15	855	74	21	489	1	2	2	5	49	0	8

INTERSECTION VOLUME DEVELOPMENT

**US 17 at Seewee Road/Fifteen Mile Landing Road (Alternative 2)
AM PEAK HOUR (9:00 AM TO 10:00AM)**

Description	US 17 Northbound			US 17 Southbound			Fifteen Mile Landing Road Eastbound			Seewee Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2022 AM Volumes	3	385	34	13	634	0	0	0	6	41	0	10
Pedestrians	2			0			1			0		
Heavy Vehicle %	6.6%			5.1%			14.3%			5.9%		
Peak Hour Factor	0.84			0.98 (0.95)			0.35 (0.50)			0.80		
Annual Growth Rate	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Growth Factor	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158
	-3	3	15	-15	15	3						
2025 Alternative 2 Adjustments	0	449	54	0	749	3	0	0	7	47	0	12
New Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
2025 Buildout Total	0	449	54	0	749	3	0	0	7	47	0	12

MIDDAY PEAK HOUR (12:45 PM TO 1:45 PM)

Description	US 17 Northbound			US 17 Southbound			Fifteen Mile Landing Road Eastbound			Seewee Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2022 MIDDAY Volumes	10	553	37	25	538	4	8	2	14	48	1	11
Pedestrians	0			0			0			0		
Heavy Vehicle %	5.7%			9.0%			4.2%			6.7%		
Peak Hour Factor	0.93			0.89			0.86			0.83		
Annual Growth Rate	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Growth Factor	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158
	-12	12	29	-29	29	12						
2025 Alternative 2 Adjustments	0	652	72	0	652	17	9	2	16	56	1	13
New Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
2025 Buildout Total	0	652	72	0	652	17	9	2	16	56	1	13

PM PEAK HOUR (3:30 PM TO 4:30 PM)

Description	US 17 Northbound			US 17 Southbound			Fifteen Mile Landing Road Eastbound			Seewee Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2022 PM Volumes	13	739	64	18	422	1	2	2	4	42	0	7
Pedestrians	1			0			1			0		
Heavy Vehicle %	5.2%			6.8%			0% (2.0%)			0% (2.0%)		
Peak Hour Factor	0.94			0.92			0.32 (0.50)			0.77		
Annual Growth Rate	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Growth Factor	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158
	-15	15	21	-21	21	15						
Alternative 2 Adjustments	0	870	95	0	510	16	2	2	5	49	0	8
New Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
2025 Buildout Total	0	870	95	0	510	16	2	2	5	49	0	8

INTERSECTION VOLUME DEVELOPMENT

**US 17 at Seewee Road/Fifteen Mile Landing Road (Alternative 3)
AM PEAK HOUR (9:00 AM TO 10:00AM)**

Description	US 17 Northbound			US 17 Southbound			Fifteen Mile Landing Road Eastbound			Seewee Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2022 AM Volumes	3	385	34	13	634	0	0	0	6	41	0	10
Pedestrians	2			0			1			0		
Heavy Vehicle %	6.6%			5.1%			14.3%			5.9%		
Peak Hour Factor	0.84			0.98 (0.95)			0.35 (0.50)			0.80		
Annual Growth Rate	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Growth Factor	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158
					47					-47		47
2025 Alternative 3 Adjustments	3	446	39	15	781	0	0	0	7	0	0	59
New Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
2025 Buildout Total	3	446	39	15	781	0	0	0	7	0	0	59

MIDDAY PEAK HOUR (12:45 PM TO 1:45 PM)

Description	US 17 Northbound			US 17 Southbound			Fifteen Mile Landing Road Eastbound			Seewee Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2022 MIDDAY Volumes	10	553	37	25	538	4	8	2	14	48	1	11
Pedestrians	0			0			0			0		
Heavy Vehicle %	5.7%			9.0%			4.2%			6.7%		
Peak Hour Factor	0.93			0.89			0.86			0.83		
Annual Growth Rate	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Growth Factor	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158
		9	2		56	1	-9	-2	11	-56	-1	57
2025 Background Traffic	12	649	45	29	679	6	0	0	27	0	0	70
New Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
2025 Buildout Total	12	649	45	29	679	6	0	0	27	0	0	70

PM PEAK HOUR (3:30 PM TO 4:30 PM)

Description	US 17 Northbound			US 17 Southbound			Fifteen Mile Landing Road Eastbound			Seewee Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2022 PM Volumes	13	739	64	18	422	1	2	2	4	42	0	7
Pedestrians	1			0			1			0		
Heavy Vehicle %	5.2%			6.8%			0% (2.0%)			0% (2.0%)		
Peak Hour Factor	0.94			0.92			0.32 (0.50)			0.77		
Annual Growth Rate	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Growth Factor	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158
		2			49	2	-2	-2	4	-49		49
2025 Background Traffic	15	857	74	21	538	3	0	0	9	0	0	57
New Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
2025 Buildout Total	15	857	74	21	538	3	0	0	9	0	0	57

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↗	↕	↗	↗	↕	↗
Traffic Vol, veh/h	0	0	6	41	0	10	3	385	34	13	634	0
Future Vol, veh/h	0	0	6	41	0	10	3	385	34	13	634	0
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	75	-	-	-	200	-	260	175	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	80	80	80	84	84	84	95	95	95
Heavy Vehicles, %	14	14	14	6	6	6	7	7	7	5	5	5
Mvmt Flow	0	0	12	51	0	13	4	458	40	14	667	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	932	1163	335	831	1163	231	667	0	0	460	0	0
Stage 1	695	695	-	468	468	-	-	-	-	-	-	-
Stage 2	237	468	-	363	695	-	-	-	-	-	-	-
Critical Hdwy	7.78	6.78	7.18	7.62	6.62	7.02	4.24	-	-	4.2	-	-
Critical Hdwy Stg 1	6.78	5.78	-	6.62	5.62	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.78	5.78	-	6.62	5.62	-	-	-	-	-	-	-
Follow-up Hdwy	3.64	4.14	3.44	3.56	4.06	3.36	2.27	-	-	2.25	-	-
Pot Cap-1 Maneuver	204	176	627	255	188	759	886	-	-	1076	-	-
Stage 1	372	414	-	534	550	-	-	-	-	-	-	-
Stage 2	712	530	-	617	432	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	198	172	626	246	184	758	886	-	-	1074	-	-
Mov Cap-2 Maneuver	297	284	-	367	299	-	-	-	-	-	-	-
Stage 1	370	409	-	531	546	-	-	-	-	-	-	-
Stage 2	697	526	-	597	426	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.9		15.5		0.1		0.2	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	886	-	-	-	626	408	1074	-	-
HCM Lane V/C Ratio	0.004	-	-	-	0.019	0.156	0.013	-	-
HCM Control Delay (s)	9.1	-	-	0	10.9	15.5	8.4	-	-
HCM Lane LOS	A	-	-	A	B	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.5	0	-	-

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↗	↕	↕	↗	↕	↕
Traffic Vol, veh/h	8	2	14	48	1	11	10	553	37	25	538	4
Future Vol, veh/h	8	2	14	48	1	11	10	553	37	25	538	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	75	-	-	-	200	-	260	175	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	83	83	83	93	93	93	89	89	89
Heavy Vehicles, %	4	4	4	7	7	7	6	6	6	9	9	9
Mvmt Flow	9	2	16	58	1	13	11	595	40	28	604	4

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	982	1279	304	976	1281	298	608	0	0	595	0	0
Stage 1	662	662	-	617	617	-	-	-	-	-	-	-
Stage 2	320	617	-	359	664	-	-	-	-	-	-	-
Critical Hdwy	7.58	6.58	6.98	7.64	6.64	7.04	4.22	-	-	4.28	-	-
Critical Hdwy Stg 1	6.58	5.58	-	6.64	5.64	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.58	5.58	-	6.64	5.64	-	-	-	-	-	-	-
Follow-up Hdwy	3.54	4.04	3.34	3.57	4.07	3.37	2.26	-	-	2.29	-	-
Pot Cap-1 Maneuver	201	162	686	198	158	684	940	-	-	931	-	-
Stage 1	413	453	-	432	467	-	-	-	-	-	-	-
Stage 2	660	475	-	618	444	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	190	155	686	186	151	684	940	-	-	931	-	-
Mov Cap-2 Maneuver	304	272	-	305	269	-	-	-	-	-	-	-
Stage 1	408	439	-	427	461	-	-	-	-	-	-	-
Stage 2	638	469	-	582	431	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.4		18.5		0.1		0.4	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	940	-	-	297	686	339	931	-	-
HCM Lane V/C Ratio	0.011	-	-	0.039	0.024	0.213	0.03	-	-
HCM Control Delay (s)	8.9	-	-	17.6	10.4	18.5	9	-	-
HCM Lane LOS	A	-	-	C	B	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0.8	0.1	-	-

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↗	↕	↕	↗	↕	↕
Traffic Vol, veh/h	2	2	4	42	0	7	13	739	64	18	422	1
Future Vol, veh/h	2	2	4	42	0	7	13	739	64	18	422	1
Conflicting Peds, #/hr	1	0	1	1	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	75	-	-	-	200	-	260	175	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	77	77	77	94	94	94	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	5	5	5	7	7	7
Mvmt Flow	4	4	8	55	0	9	14	786	68	20	459	1

Major/Minor	Minor2		Minor1			Major1		Major2				
Conflicting Flow All	922	1315	231	1088	1315	395	460	0	0	787	0	0
Stage 1	500	500	-	815	815	-	-	-	-	-	-	-
Stage 2	422	815	-	273	500	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.2	-	-	4.24	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.25	-	-	2.27	-	-
Pot Cap-1 Maneuver	225	157	771	170	157	604	1076	-	-	796	-	-
Stage 1	521	541	-	338	389	-	-	-	-	-	-	-
Stage 2	580	389	-	710	541	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	215	151	770	161	151	603	1076	-	-	795	-	-
Mov Cap-2 Maneuver	339	262	-	264	267	-	-	-	-	-	-	-
Stage 1	514	527	-	333	384	-	-	-	-	-	-	-
Stage 2	563	384	-	679	527	-	-	-	-	-	-	-

Approach	EB		WB			NB		SB		
HCM Control Delay, s	13.6		21.1			0.1		0.4		
HCM LOS	B		C							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1076	-	-	296	770	287	795	-	-
HCM Lane V/C Ratio	0.013	-	-	0.027	0.01	0.222	0.025	-	-
HCM Control Delay (s)	8.4	-	-	17.5	9.7	21.1	9.6	-	-
HCM Lane LOS	A	-	-	C	A	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0.8	0.1	-	-

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↗	↕	↗	↗	↕	↗
Traffic Vol, veh/h	0	0	7	47	0	12	3	446	39	15	734	0
Future Vol, veh/h	0	0	7	47	0	12	3	446	39	15	734	0
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	75	-	-	-	200	-	260	175	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	80	80	80	84	84	84	95	95	95
Heavy Vehicles, %	14	14	14	6	6	6	7	7	7	5	5	5
Mvmt Flow	0	0	14	59	0	15	4	531	46	16	773	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1079	1346	388	961	1346	268	773	0	0	533	0	0
Stage 1	805	805	-	541	541	-	-	-	-	-	-	-
Stage 2	274	541	-	420	805	-	-	-	-	-	-	-
Critical Hdwy	7.78	6.78	7.18	7.62	6.62	7.02	4.24	-	-	4.2	-	-
Critical Hdwy Stg 1	6.78	5.78	-	6.62	5.62	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.78	5.78	-	6.62	5.62	-	-	-	-	-	-	-
Follow-up Hdwy	3.64	4.14	3.44	3.56	4.06	3.36	2.27	-	-	2.25	-	-
Pot Cap-1 Maneuver	158	136	578	205	145	718	806	-	-	1010	-	-
Stage 1	317	366	-	483	509	-	-	-	-	-	-	-
Stage 2	676	490	-	571	384	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	152	133	577	196	142	717	806	-	-	1008	-	-
Mov Cap-2 Maneuver	250	245	-	322	259	-	-	-	-	-	-	-
Stage 1	315	360	-	480	505	-	-	-	-	-	-	-
Stage 2	659	487	-	548	378	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.4		17.4		0.1		0.2	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	806	-	-	-	577	363	1008	-	-
HCM Lane V/C Ratio	0.004	-	-	-	0.024	0.203	0.016	-	-
HCM Control Delay (s)	9.5	-	-	0	11.4	17.4	8.6	-	-
HCM Lane LOS	A	-	-	A	B	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.7	0	-	-

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↗	↕	↕	↗	↕	↕
Traffic Vol, veh/h	9	2	16	56	1	13	12	640	43	29	623	5
Future Vol, veh/h	9	2	16	56	1	13	12	640	43	29	623	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	75	-	-	-	200	-	260	175	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	83	83	83	93	93	93	89	89	89
Heavy Vehicles, %	4	4	4	7	7	7	6	6	6	9	9	9
Mvmt Flow	10	2	19	67	1	16	13	688	46	33	700	6

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1140	1483	353	1131	1486	344	706	0	0	688	0	0
Stage 1	769	769	-	714	714	-	-	-	-	-	-	-
Stage 2	371	714	-	417	772	-	-	-	-	-	-	-
Critical Hdwy	7.58	6.58	6.98	7.64	6.64	7.04	4.22	-	-	4.28	-	-
Critical Hdwy Stg 1	6.58	5.58	-	6.64	5.64	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.58	5.58	-	6.64	5.64	-	-	-	-	-	-	-
Follow-up Hdwy	3.54	4.04	3.34	3.57	4.07	3.37	2.26	-	-	2.29	-	-
Pot Cap-1 Maneuver	153	122	638	152	118	638	862	-	-	857	-	-
Stage 1	355	404	-	377	421	-	-	-	-	-	-	-
Stage 2	616	428	-	571	396	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	143	116	638	140	112	638	862	-	-	857	-	-
Mov Cap-2 Maneuver	256	230	-	259	229	-	-	-	-	-	-	-
Stage 1	350	388	-	371	415	-	-	-	-	-	-	-
Stage 2	590	422	-	530	381	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.6	22.3	0.2	0.4
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	862	-	-	251	638	291	857	-	-
HCM Lane V/C Ratio	0.015	-	-	0.051	0.029	0.29	0.038	-	-
HCM Control Delay (s)	9.2	-	-	20.1	10.8	22.3	9.4	-	-
HCM Lane LOS	A	-	-	C	B	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	1.2	0.1	-	-

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↗	↕	↗	↗	↕	↗
Traffic Vol, veh/h	2	2	5	49	0	8	15	855	74	21	489	1
Future Vol, veh/h	2	2	5	49	0	8	15	855	74	21	489	1
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	75	-	-	-	200	-	260	175	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	77	77	77	94	94	94	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	5	5	5	7	7	7
Mvmt Flow	4	4	10	64	0	10	16	910	79	23	532	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1066	1522	268	1258	1522	456	533	0	0	911	0	0
Stage 1	579	579	-	943	943	-	-	-	-	-	-	-
Stage 2	487	943	-	315	579	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.2	-	-	4.24	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.25	-	-	2.27	-	-
Pot Cap-1 Maneuver	177	117	730	128	117	551	1010	-	-	713	-	-
Stage 1	468	499	-	282	339	-	-	-	-	-	-	-
Stage 2	531	339	-	671	499	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	167	111	729	120	111	550	1010	-	-	712	-	-
Mov Cap-2 Maneuver	293	220	-	219	226	-	-	-	-	-	-	-
Stage 1	461	483	-	277	333	-	-	-	-	-	-	-
Stage 2	513	333	-	635	483	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	14.4		26.7		0.1		0.4	
HCM LOS	B		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1010	-	-	251	729	239	712	-	-
HCM Lane V/C Ratio	0.016	-	-	0.032	0.014	0.31	0.032	-	-
HCM Control Delay (s)	8.6	-	-	19.8	10	26.7	10.2	-	-
HCM Lane LOS	A	-	-	C	B	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	1.3	0.1	-	-

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕			↕	↗		↕	↗
Traffic Vol, veh/h	0	0	7	47	0	12	0	449	54	0	749	3
Future Vol, veh/h	0	0	7	47	0	12	0	449	54	0	749	3
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	75	-	-	-	-	-	260	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	80	80	80	84	84	84	95	95	95
Heavy Vehicles, %	14	14	14	6	6	6	7	7	7	5	5	5
Mvmt Flow	0	0	14	59	0	15	0	535	64	0	788	3

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1058	1327	397	932	1328	270	-	0	0	-	-	0
Stage 1	790	790	-	537	537	-	-	-	-	-	-	-
Stage 2	268	537	-	395	791	-	-	-	-	-	-	-
Critical Hdwy	7.78	6.78	7.18	7.62	6.62	7.02	-	-	-	-	-	-
Critical Hdwy Stg 1	6.78	5.78	-	6.62	5.62	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.78	5.78	-	6.62	5.62	-	-	-	-	-	-	-
Follow-up Hdwy	3.64	4.14	3.44	3.56	4.06	3.36	-	-	-	-	-	-
Pot Cap-1 Maneuver	164	139	570	215	149	716	0	-	-	0	-	-
Stage 1	324	372	-	486	511	-	0	-	-	0	-	-
Stage 2	682	492	-	591	390	-	0	-	-	0	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	161	139	569	209	149	715	-	-	-	-	-	-
Mov Cap-2 Maneuver	260	255	-	335	268	-	-	-	-	-	-	-
Stage 1	324	372	-	486	510	-	-	-	-	-	-	-
Stage 2	668	491	-	576	390	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.5	16.9	0	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	-	569	376	-	-
HCM Lane V/C Ratio	-	-	-	0.025	0.196	-	-
HCM Control Delay (s)	-	-	0	11.5	16.9	-	-
HCM Lane LOS	-	-	A	B	C	-	-
HCM 95th %tile Q(veh)	-	-	-	0.1	0.7	-	-

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕			↕	↗		↕	↗
Traffic Vol, veh/h	9	2	16	56	1	13	0	652	72	0	652	17
Future Vol, veh/h	9	2	16	56	1	13	0	652	72	0	652	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	75	-	-	-	-	-	260	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	83	83	83	93	93	93	89	89	89
Heavy Vehicles, %	4	4	4	7	7	7	6	6	6	9	9	9
Mvmt Flow	10	2	19	67	1	16	0	701	77	0	733	19

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1094	1444	376	1069	1453	351	-	0	0	-	-	0
Stage 1	743	743	-	701	701	-	-	-	-	-	-	-
Stage 2	351	701	-	368	752	-	-	-	-	-	-	-
Critical Hdwy	7.58	6.58	6.98	7.64	6.64	7.04	-	-	-	-	-	-
Critical Hdwy Stg 1	6.58	5.58	-	6.64	5.64	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.58	5.58	-	6.64	5.64	-	-	-	-	-	-	-
Follow-up Hdwy	3.54	4.04	3.34	3.57	4.07	3.37	-	-	-	-	-	-
Pot Cap-1 Maneuver	166	129	616	169	124	631	0	-	-	0	-	-
Stage 1	369	415	-	384	427	-	0	-	-	0	-	-
Stage 2	633	434	-	611	404	-	0	-	-	0	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	161	129	616	163	124	631	-	-	-	-	-	-
Mov Cap-2 Maneuver	277	252	-	282	246	-	-	-	-	-	-	-
Stage 1	369	415	-	384	427	-	-	-	-	-	-	-
Stage 2	616	434	-	589	404	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.2	20.6	0	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	272	616	314	-	-
HCM Lane V/C Ratio	-	-	0.047	0.03	0.269	-	-
HCM Control Delay (s)	-	-	18.9	11	20.6	-	-
HCM Lane LOS	-	-	C	B	C	-	-
HCM 95th %tile Q(veh)	-	-	0.1	0.1	1.1	-	-

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕			↕	↗		↕	↗
Traffic Vol, veh/h	2	2	5	49	0	8	0	870	95	0	510	16
Future Vol, veh/h	2	2	5	49	0	8	0	870	95	0	510	16
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	75	-	-	-	-	-	260	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	77	77	77	94	94	94	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	5	5	5	7	7	7
Mvmt Flow	4	4	10	64	0	10	0	926	101	0	554	17

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	1026	1490	287	1207	1498	464	-	0	0	-	-	0
Stage 1	563	563	-	927	927	-	-	-	-	-	-	-
Stage 2	463	927	-	280	571	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	-	-	-	-	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	-	-	-	-	-	-
Pot Cap-1 Maneuver	189	123	710	139	121	545	0	-	-	0	-	-
Stage 1	478	507	-	289	345	-	0	-	-	0	-	-
Stage 2	548	345	-	703	503	-	0	-	-	0	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	185	123	709	135	121	544	-	-	-	-	-	-
Mov Cap-2 Maneuver	315	241	-	233	239	-	-	-	-	-	-	-
Stage 1	478	507	-	289	345	-	-	-	-	-	-	-
Stage 2	538	345	-	687	503	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.9	25	0	0
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	273	709	253	-	-
HCM Lane V/C Ratio	-	-	0.029	0.014	0.293	-	-
HCM Control Delay (s)	-	-	18.6	10.2	25	-	-
HCM Lane LOS	-	-	C	B	D	-	-
HCM 95th %tile Q(veh)	-	-	0.1	0	1.2	-	-

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕	↗	↗	↕	↕
Traffic Vol, veh/h	0	0	7	0	0	59	3	446	39	15	781	0
Future Vol, veh/h	0	0	7	0	0	59	3	446	39	15	781	0
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	0	200	-	260	175	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	80	80	80	84	84	84	95	95	95
Heavy Vehicles, %	14	14	14	6	6	6	7	7	7	5	5	5
Mvmt Flow	0	0	14	0	0	74	4	531	46	16	822	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	412	-	-	268	822	0	0	533	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.18	-	-	7.02	4.24	-	-	4.2	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.44	-	-	3.36	2.27	-	-	2.25	-	-
Pot Cap-1 Maneuver	0	0	557	0	0	718	772	-	-	1010	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	556	-	-	717	772	-	-	1008	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB			
HCM Control Delay, s	11.6		10.6		0.1		0.2			
HCM LOS	B		B							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	772	-	-	556	717	1008	-	-
HCM Lane V/C Ratio	0.005	-	-	0.025	0.103	0.016	-	-
HCM Control Delay (s)	9.7	-	-	11.6	10.6	8.6	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.3	0	-	-

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕	↗	↗	↕	↕
Traffic Vol, veh/h	0	0	27	0	0	70	12	649	45	29	679	6
Future Vol, veh/h	0	0	27	0	0	70	12	649	45	29	679	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	0	200	-	260	175	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	83	83	83	93	93	93	89	89	89
Heavy Vehicles, %	4	4	4	7	7	7	6	6	6	9	9	9
Mvmt Flow	0	0	31	0	0	84	13	698	48	33	763	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	385	-	-	349	770	0	0	698	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.98	-	-	7.04	4.22	-	-	4.28	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.34	-	-	3.37	2.26	-	-	2.29	-	-
Pot Cap-1 Maneuver	0	0	608	0	0	633	815	-	-	849	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	608	-	-	633	815	-	-	849	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.2		11.6		0.2		0.4	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	815	-	-	608	633	849	-	-
HCM Lane V/C Ratio	0.016	-	-	0.052	0.133	0.038	-	-
HCM Control Delay (s)	9.5	-	-	11.2	11.6	9.4	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.5	0.1	-	-

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕	↗	↗	↕	↗
Traffic Vol, veh/h	0	0	9	0	0	57	15	857	74	21	538	3
Future Vol, veh/h	0	0	9	0	0	57	15	857	74	21	538	3
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	0	200	-	260	175	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	77	77	77	94	94	94	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	5	5	5	7	7	7
Mvmt Flow	0	0	18	0	0	74	16	912	79	23	585	3

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	295	-	-	457	588	0	0	913	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.2	-	-	4.24	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.25	-	-	2.27	-	-
Pot Cap-1 Maneuver	0	0	701	0	0	551	963	-	-	712	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	700	-	-	550	963	-	-	711	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.3		12.6		0.1		0.4	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	963	-	-	700	550	711	-	-
HCM Lane V/C Ratio	0.017	-	-	0.026	0.135	0.032	-	-
HCM Control Delay (s)	8.8	-	-	10.3	12.6	10.2	-	-
HCM Lane LOS	A	-	-	B	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.5	0.1	-	-

HCM 6th Signalized Intersection Summary
 3: US 17 & Fifteen Mile Landing Road/Seewee Road

Awendaw RSA
 Build AM - Alt 4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔		↖	↑↑	↗	↖	↑↓	
Traffic Volume (veh/h)	0	0	7	47	0	12	3	446	39	15	734	0
Future Volume (veh/h)	0	0	7	47	0	12	3	446	39	15	734	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1693	1693	1693	1811	1811	1811	1796	1796	1796	1826	1826	1826
Adj Flow Rate, veh/h	0	0	14	59	0	15	4	531	0	16	773	0
Peak Hour Factor	0.50	0.50	0.50	0.80	0.80	0.80	0.84	0.84	0.84	0.95	0.95	0.95
Percent Heavy Veh, %	14	14	14	6	6	6	7	7	7	5	5	5
Cap, veh/h	0	160	136	352	0	27	468	1521		568	1546	0
Arrive On Green	0.00	0.00	0.09	0.09	0.00	0.09	0.45	0.45	0.00	0.45	0.45	0.00
Sat Flow, veh/h	0	1693	1432	1104	0	281	669	3413	1522	851	3561	0
Grp Volume(v), veh/h	0	0	14	74	0	0	4	531	0	16	773	0
Grp Sat Flow(s),veh/h/ln	0	1693	1432	1384	0	0	669	1706	1522	851	1735	0
Q Serve(g_s), s	0.0	0.0	0.2	1.3	0.0	0.0	0.1	2.7	0.0	0.3	4.1	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.2	1.3	0.0	0.0	4.3	2.7	0.0	3.0	4.1	0.0
Prop In Lane	0.00		1.00	0.80		0.20	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	0	160	136	379	0	0	468	1521		568	1546	0
V/C Ratio(X)	0.00	0.00	0.10	0.20	0.00	0.00	0.01	0.35		0.03	0.50	0.00
Avail Cap(c_a), veh/h	0	2074	1755	1944	0	0	2116	9932		2666	10096	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	10.8	11.3	0.0	0.0	6.7	4.8	0.0	5.7	5.2	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	11.1	11.6	0.0	0.0	6.7	4.9	0.0	5.8	5.4	0.0
LnGrp LOS	A	A	B	B	A	A	A	A		A	A	A
Approach Vol, veh/h		14			74			535	A		789	
Approach Delay, s/veh		11.1			11.6			4.9			5.4	
Approach LOS		B			B			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		17.6		8.5		17.6		8.5				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		76.0		32.0		76.0		32.0				
Max Q Clear Time (g_c+I1), s		6.3		2.2		6.1		3.3				
Green Ext Time (p_c), s		3.4		0.0		5.4		0.3				

Intersection Summary

HCM 6th Ctrl Delay	5.6
HCM 6th LOS	A

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 3: US 17 & Fifteen Mile Landing Road/Seewee Road

Awendaw RSA
 Build MID- Alt 4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↔		↖	↑↑	↗	↖	↕↔	
Traffic Volume (veh/h)	9	2	16	56	1	13	12	640	43	29	623	5
Future Volume (veh/h)	9	2	16	56	1	13	12	640	43	29	623	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1796	1796	1796	1811	1811	1811	1767	1767	1767
Adj Flow Rate, veh/h	10	2	19	67	1	16	13	688	0	33	700	6
Peak Hour Factor	0.86	0.86	0.86	0.83	0.83	0.83	0.93	0.93	0.93	0.89	0.89	0.89
Percent Heavy Veh, %	4	4	4	7	7	7	6	6	6	9	9	9
Cap, veh/h	383	52	170	364	2	27	478	1462		480	1449	12
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.42	0.42	0.00	0.42	0.42	0.42
Sat Flow, veh/h	1166	475	1560	1036	15	247	718	3441	1535	713	3410	29
Grp Volume(v), veh/h	12	0	19	84	0	0	13	688	0	33	344	362
Grp Sat Flow(s),veh/h/ln	1641	0	1560	1298	0	0	718	1721	1535	713	1678	1761
Q Serve(g_s), s	0.0	0.0	0.3	1.5	0.0	0.0	0.3	3.7	0.0	0.9	3.8	3.8
Cycle Q Clear(g_c), s	0.2	0.0	0.3	1.7	0.0	0.0	4.2	3.7	0.0	4.6	3.8	3.8
Prop In Lane	0.83		1.00	0.80		0.19	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	435	0	170	393	0	0	478	1462		480	713	748
V/C Ratio(X)	0.03	0.00	0.11	0.21	0.00	0.00	0.03	0.47		0.07	0.48	0.48
Avail Cap(c_a), veh/h	2230	0	2121	2109	0	0	2211	9760		2199	4760	4996
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.3	0.0	10.3	11.0	0.0	0.0	6.9	5.3	0.0	7.0	5.4	5.4
Incr Delay (d2), s/veh	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.2	0.0	0.1	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.3	0.0	10.6	11.3	0.0	0.0	6.9	5.6	0.0	7.0	5.9	5.8
LnGrp LOS	B	A	B	B	A	A	A	A		A	A	A
Approach Vol, veh/h		31			84			701	A		739	
Approach Delay, s/veh		10.5			11.3			5.6			5.9	
Approach LOS		B			B			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		16.9		8.8		16.9		8.8				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		73.0		35.0		73.0		35.0				
Max Q Clear Time (g_c+I1), s		6.2		2.3		6.6		3.7				
Green Ext Time (p_c), s		4.7		0.1		4.3		0.4				

Intersection Summary

HCM 6th Ctrl Delay	6.1
HCM 6th LOS	A

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 3: US 17 & Fifteen Mile Landing Road/Seewee Road

Awendaw RSA
 Build PM- Alt 4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔		↖	↑↑	↗	↖	↑↓	
Traffic Volume (veh/h)	2	2	5	49	0	8	15	855	74	21	489	1
Future Volume (veh/h)	2	2	5	49	0	8	15	855	74	21	489	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1826	1826	1826	1796	1796	1796
Adj Flow Rate, veh/h	4	4	10	64	0	10	16	910	0	23	532	1
Peak Hour Factor	0.50	0.50	0.50	0.77	0.77	0.77	0.94	0.94	0.94	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	7	7	7
Cap, veh/h	253	100	150	345	0	17	587	1690		430	1702	3
Arrive On Green	0.09	0.09	0.09	0.09	0.00	0.09	0.49	0.49	0.00	0.49	0.49	0.49
Sat Flow, veh/h	687	1050	1582	1176	0	184	850	3469	1547	589	3495	7
Grp Volume(v), veh/h	8	0	10	74	0	0	16	910	0	23	260	273
Grp Sat Flow(s),veh/h/ln	1737	0	1582	1360	0	0	850	1735	1547	589	1706	1795
Q Serve(g_s), s	0.0	0.0	0.2	1.4	0.0	0.0	0.3	5.2	0.0	0.8	2.6	2.6
Cycle Q Clear(g_c), s	0.1	0.0	0.2	1.5	0.0	0.0	3.0	5.2	0.0	6.0	2.6	2.6
Prop In Lane	0.50		1.00	0.86		0.14	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	353	0	150	363	0	0	587	1690		430	831	874
V/C Ratio(X)	0.02	0.00	0.07	0.20	0.00	0.00	0.03	0.54		0.05	0.31	0.31
Avail Cap(c_a), veh/h	1820	0	1599	1661	0	0	2512	9548		1764	4696	4940
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.8	0.0	11.8	12.5	0.0	0.0	5.4	5.1	0.0	7.2	4.5	4.5
Incr Delay (d2), s/veh	0.0	0.0	0.2	0.3	0.0	0.0	0.0	0.3	0.0	0.1	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.8	0.0	12.0	12.8	0.0	0.0	5.4	5.4	0.0	7.3	4.7	4.7
LnGrp LOS	B	A	B	B	A	A	A	A		A	A	A
Approach Vol, veh/h		18			74			926	A		556	
Approach Delay, s/veh		11.9			12.8			5.4			4.8	
Approach LOS		B			B			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		8.7		20.0		8.7				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		79.0		29.0		79.0		29.0				
Max Q Clear Time (g_c+I1), s		7.2		2.2		8.0		3.5				
Green Ext Time (p_c), s		6.7		0.0		3.1		0.3				

Intersection Summary

HCM 6th Ctrl Delay	5.6
HCM 6th LOS	A

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

CONCEPTUAL COST ESTIMATION SPREADSHEET

Project **US 17 at S-584 Intersection Improvements**
 Description **Alternative 1 - Pavement marking/signing upgrades**
 County **Charleston**
 Estimate Date **August 1, 2022**



Item	Description	Quantity	Unit	Unit Cost	Total
1031000	MOBILIZATION	1	LS	\$5,660.00	\$5,660.00
1031100	MOBILIZATION - SUBCONTRACTOR	1	LS	\$2,830.00	\$2,830.00
1032010	BONDS AND INSURANCE	1	LS	\$1,130.00	\$1,130.00
1050800	CONSTRUCTION STAKES, LINES, & GRADES	1	EA	\$1,125.00	\$1,125.00
1071000	TRAFFIC CONTROL	1	LS	\$7,925.00	\$7,925.00
1080300	CPM PROGRESS SCHEDULE	1	LS	\$570.00	\$570.00
2011000	CLEAR.& GRUB. WITHIN RIGHT OF WAY	1	LS	\$12,000.00	\$12,000.00
6531210	U-SECTION POST FOR SIGN SUPPORTS - 3P	108	LF	\$15.00	\$1,620.00
608100B	TYPE B - FLASHING LIGHT	4	EA	\$130.00	\$520.00
	ADDITIONAL WIDTH SHOULDER PAVING	1	LS	\$100,000.00	\$100,000.00
	PAVEMENT MARKINGS	1	LS	\$750.00	\$750.00
	ROADWAY ITEMS OTHERWISE NOT QUANTIFIED	1	LS	\$10,300.00	\$10,300.00

Roadway Construction SubTotal \$144,430.00

Construction Contingencies 15% \$21,700.00

ROADWAY CONSTRUCTION TOTAL COST \$167,000.00

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Clearing and Grubbing estimated at \$5,000 per acre

Mobilization = 5% of total cost of construction items

Bonds and Insurance = 2% of total cost of construction items

Construction stakes, Line and Grades = 1% of total cost of construction items

Traffic Control = 7% of total cost of construction items

CPM Progress Schedule = 0.5% of total cost of construction items

Roadway items otherwise not quantified = 10% of total cost of construction items

CONCEPTUAL COST ESTIMATION SPREADSHEET

Project **US 17 at S-584 Intersection Improvements**
 Description **Alternative 2 - Left Turn Acceleration Lanes**
 County **Charleston**
 Estimate Date **August 1, 2022**



Item	Description	Quantity	Unit	Unit Cost	Total
1031000	MOBILIZATION	1	LS	\$37,770.00	\$37,770.00
1031100	MOBILIZATION - SUBCONTRACTOR	1	LS	\$18,885.00	\$18,885.00
1032010	BONDS AND INSURANCE	1	LS	\$10,070.00	\$10,070.00
1050800	CONSTRUCTION STAKES, LINES, & GRADES	1	EA	\$5,040.00	\$5,040.00
1071000	TRAFFIC CONTROL	1	LS	\$34,460.00	\$34,460.00
1080300	CPM PROGRESS SCHEDULE	1	LS	\$2,520.00	\$2,520.00
2011000	CLEAR.& GRUB. WITHIN RIGHT OF WAY	1	LS	\$24,000.00	\$24,000.00
2025000	REM.&DISP.OF EXIST ASPH. PVMT.	1310	SY	\$20.00	\$26,200.00
2081001	FINE GRADING	1535	SY	\$3.50	\$5,372.50
3100320	H/M ASPH. BASE CR.-TYPE B	1900	TON	\$75.00	\$142,500.00
4011004	LIQUID ASPHALT BINDER PG64-22	168	TON	\$800.00	\$134,672.00
4020320	H/M ASPH.INTERMEDIATE CR.TYPE B	760	TON	\$100.00	\$76,000.00
4030320	H/M ASPH.SURF.CR. TYPE B	760	TON	\$110.00	\$83,600.00
7206000	CONCRETE MEDIAN	150	SY	\$75.00	\$11,250.00
	PAVEMENT MARKINGS	1	LS	\$1,530.00	\$1,530.00
	ROADWAY ITEMS OTHERWISE NOT QUANTIFIED	1	LS	\$122,470.00	\$122,470.00
	DRAINAGE AND EROSION CONTROL OTHERWISE NOT QUANTIFIED	1	LS	\$30,620.00	\$30,620.00

Roadway Construction SubTotal	\$766,959.50
Construction Contingencies 15%	\$115,000.00
ROADWAY CONSTRUCTION TOTAL COST	\$885,000.00

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- Clearing and Grubbing estimated at \$12,000 per acre
- Mobilization = 7.5% of total cost of construction items
- Bonds and Insurance = 2% of total cost of construction items
- Construction stakes, Line and Grades = 1% of total cost of construction items
- Traffic Control = 7% of total cost of construction items
- CPM Progress Schedule = 0.5% of total cost of construction items
- Pavement Markings are estimated as 0.25% of construction costs

CONCEPTUAL COST ESTIMATION SPREADSHEET

Project **US 17 at S-584 Intersection Improvements**
 Description **Alternative 3 - Reduced Conflict Intersection**
 County **Charleston**
 Estimate Date **August 1, 2022**



Item	Description	Quantity	Unit	Unit Cost	Total
1031000	MOBILIZATION	1	LS	\$20,840.00	\$20,840.00
1031100	MOBILIZATION - SUBCONTRACTOR	1	LS	\$10,420.00	\$10,420.00
1032010	BONDS AND INSURANCE	1	LS	\$5,560.00	\$5,560.00
1050800	CONSTRUCTION STAKES, LINES, & GRADES	1	EA	\$2,780.00	\$2,780.00
1071000	TRAFFIC CONTROL	1	LS	\$18,400.00	\$18,400.00
1080300	CPM PROGRESS SCHEDULE	1	LS	\$1,390.00	\$1,390.00
2011000	CLEAR.& GRUB. WITHIN RIGHT OF WAY	1	LS	\$19,200.00	\$19,200.00
2025000	REM.&DISP.OF EXIST ASPH. PVMT.	230	SY	\$20.00	\$4,600.00
2081001	FINE GRADING	1475	SY	\$3.50	\$5,162.50
3100320	H/M ASPH. BASE CR.-TYPE B	1010	TON	\$75.00	\$75,750.00
4011004	LIQUID ASPHALT BINDER PG64-22	90	TON	\$800.00	\$72,112.00
4020320	H/M ASPH.INTERMEDIATE CR.TYPE B	410	TON	\$100.00	\$41,000.00
4030320	H/M ASPH.SURF.CR. TYPE B	410	TON	\$110.00	\$45,100.00
7206000	CONCRETE MEDIAN	200	SY	\$75.00	\$15,000.00
	PAVEMENT MARKINGS	1	LS	\$840.00	\$840.00
	ROADWAY ITEMS OTHERWISE NOT QUANTIFIED	1	LS	\$67,460.00	\$67,460.00
	DRAINAGE AND EROSION CONTROL OTHERWISE NOT QUANTIFIED	1	LS	\$16,870.00	\$16,870.00

Roadway Construction SubTotal \$422,484.50

Construction Contingencies 15% \$63,400.00

ROADWAY CONSTRUCTION TOTAL COST \$490,000.00

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- Clearing and Grubbing estimated at \$12,000 per acre
- Mobilization = 7.5% of total cost of construction items
- Bonds and Insurance = 2% of total cost of construction items
- Construction stakes, Line and Grades = 1% of total cost of construction items
- Traffic Control = 7% of total cost of construction items
- CPM Progress Schedule = 0.5% of total cost of construction items
- Pavement Markings are estimated as 0.25% of construction costs
- Roadway items otherwise not quantified = 20% of total cost of construction items

CONCEPTUAL COST ESTIMATION SPREADSHEET

Project **US 17 at S-584 Intersection Improvements**
 Description **Alternative 4 - Traffic Signal**
 County **Charleston**
 Estimate Date **November 20, 2022**



Item	Description	Quantity	Unit	Unit Cost	Total
1031000	MOBILIZATION	1	LS	\$15,560.00	\$15,560.00
1031100	MOBILIZATION - SUBCONTRACTOR	1	LS	\$7,780.00	\$7,780.00
1032010	BONDS AND INSURANCE	1	LS	\$4,150.00	\$4,150.00
1050800	CONSTRUCTION STAKES, LINES, & GRADES	1	EA	\$2,070.00	\$2,070.00
1071000	TRAFFIC CONTROL	1	LS	\$14,110.00	\$14,110.00
1080300	CPM PROGRESS SCHEDULE	1	LS	\$1,040.00	\$1,040.00
2011000	CLEAR.& GRUB. WITHIN RIGHT OF WAY	1	LS	\$12,000.00	\$12,000.00
2081001	FINE GRADING	590	SY	\$3.50	\$2,065.00
3100320	H/M ASPH. BASE CR.-TYPE B	780	TON	\$75.00	\$58,500.00
4011004	LIQUID ASPHALT BINDER PG64-22	72	TON	\$800.00	\$57,600.00
4020320	H/M ASPH.INTERMEDIATE CR.TYPE B	340	TON	\$100.00	\$34,000.00
4030320	H/M ASPH.SURF.CR. TYPE B	340	TON	\$110.00	\$37,400.00
7206000	CONCRETE MEDIAN	79	SY	\$75.00	\$5,925.00
	PAVEMENT MARKINGS	1	LS	\$1,260.00	\$1,260.00
	ROADWAY ITEMS OTHERWISE NOT QUANTIFIED	1	LS	\$50,440.00	\$50,440.00
	TRAFFIC SIGNAL	1	LS	\$150,000.00	\$150,000.00
	DRAINAGE AND EROSION CONTROL OTHERWISE NOT QUANTIFIED	1	LS	\$12,610.00	\$12,610.00

Roadway Construction SubTotal \$466,510.00

Construction Contingencies 15% \$70,000.00

ROADWAY CONSTRUCTION TOTAL COST \$540,000.00

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- Clearing and Grubbing estimated at \$12,000 per acre
- Mobilization = 7.5% of total cost of construction items
- Bonds and Insurance = 2% of total cost of construction items
- Construction stakes, Line and Grades = 1% of total cost of construction items
- Traffic Control = 7% of total cost of construction items
- CPM Progress Schedule = 0.5% of total cost of construction items
- Pavement Markings are estimated as 0.5% of construction costs
- Roadway items otherwise not quantified = 20% of total cost of construction items

US-17 at S-584 (15 Mile Landing Rd./Seewee Rd.)

Road Safety Audit

Sign-In Sheet

Name	Company	Email
✓ CHRIS ULMER	PARRISH AND PARTNERS	CULMER@PARRISHANDPARTNERS.COM
✓ Mackenzie Kelley	Charleston Co.	Mkelley@charlestoncounty.org
✓ Evan Drake	Parrish and Partners	EDrake@parrishandpartners.com
✓ Michael Bowers	Chas County F.R.C	mBowers@challco.org
Eugene Taylor	SCDOT HQ	Taylor EA@SCDOT.ORG
Joey Riddle	" "	riddlej@scdot.org
✓ Jennifer Bihl	Bihl Engineering	jennifer@bihl-engineering.com
Josh Johnson	SCDOT DB	johnsj@scdot.org
Luke Weatherford	SCDOT DB	luweather@clmson.edu
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Colt Arrington	CCSO	cbarrington@CharlestonCounty.org
✓ Cassie Aiello	Bihl Engineering	cassie@bihl-engineering.com
✓ SARAH COY	BCDCOG	sarahc@bcdco.com
✓ KYLO JAMES	BCDCOG	kylej@bcdco.com
BILL WALLACE	TOWN OF AWENDAW	wallace.awendaw@tfs.net



US-17 at S-584 (15 Mile Landing Rd./Seewee Rd.)
Road Safety Audit
Pre-Audit Meeting Agenda

Introduction & Background

- Scope and purpose of RSA
- Audit team, affiliation, and qualifications
- Project limits
- Commentary on data received from design team

Review of Prompt List

- Known safety issues based on Audit team's past experiences and studies

General observations regarding site visit.

Findings, suggestions, and prioritization of safety issues

- Safety Issue 1 (most important) – Description of issues, evaluation of safety risk, suggestions for improvements.
- Safety Issue 2 – etc.

US-17 at S-584 (15 Mile Landing Rd./Seewee Rd.)

Road Safety Audit

Pre-Audit Meeting Agenda

Prompt List 1 – Planning Stage Audit

General Topics

1. Scope of project, function, traffic mix, road users
2. Type and degree of access to property and developments
3. Major generators of traffic
4. Staging of construction
5. Future reconstruction projects
6. Wider network effects

Design Issues

1. Route choice
2. Impact of continuity with the existing network
3. Broad design standards
4. Design speed
5. Design volume and traffic characteristics
6. Right of Way
7. Combination of features

Intersections

1. Location, spacing types
2. 'Readability' (perception) by drivers
3. Road users, traffic mix
4. Design consistency
5. Number of lanes

Environmental

1. Surrounding terrain
2. Weather, sunlight
3. Noise barriers, animal fencing
4. Animal crossings
5. Visual distractions
6. Unstable land

Safety Aspects Not Already Covered

Flooding, rail crossings, roadside parking, special events, emergency vehicles, rest areas, etc.

The aim of the RSA is to answer the following questions:

- What elements of the road may present a safety concern: to what extent, to which road users, and under what circumstances?
- What opportunities exist to eliminate or mitigate identified safety concerns?

CHARLESTON COUNTY PUBLIC WORKS
US 17 & SEWEE ROAD/15 MILE LANDING ROAD

Road Safety Audit

May 11/12, 2022

INTRODUCTION

❖ Project Background

- **Fiscal Year 2022 Transportation Sales Tax Request from the Town of Awendaw**
- **Overall project budget is \$253,500**



RSA PROCESS

❖ What is an RSA?

- **Safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team.**
- **Team includes Public Safety, Owners, Engineers, Local Stakeholders**

A MODEL Road Safety Audit Policy



U.S. Department of Transportation
Federal Highway Administration

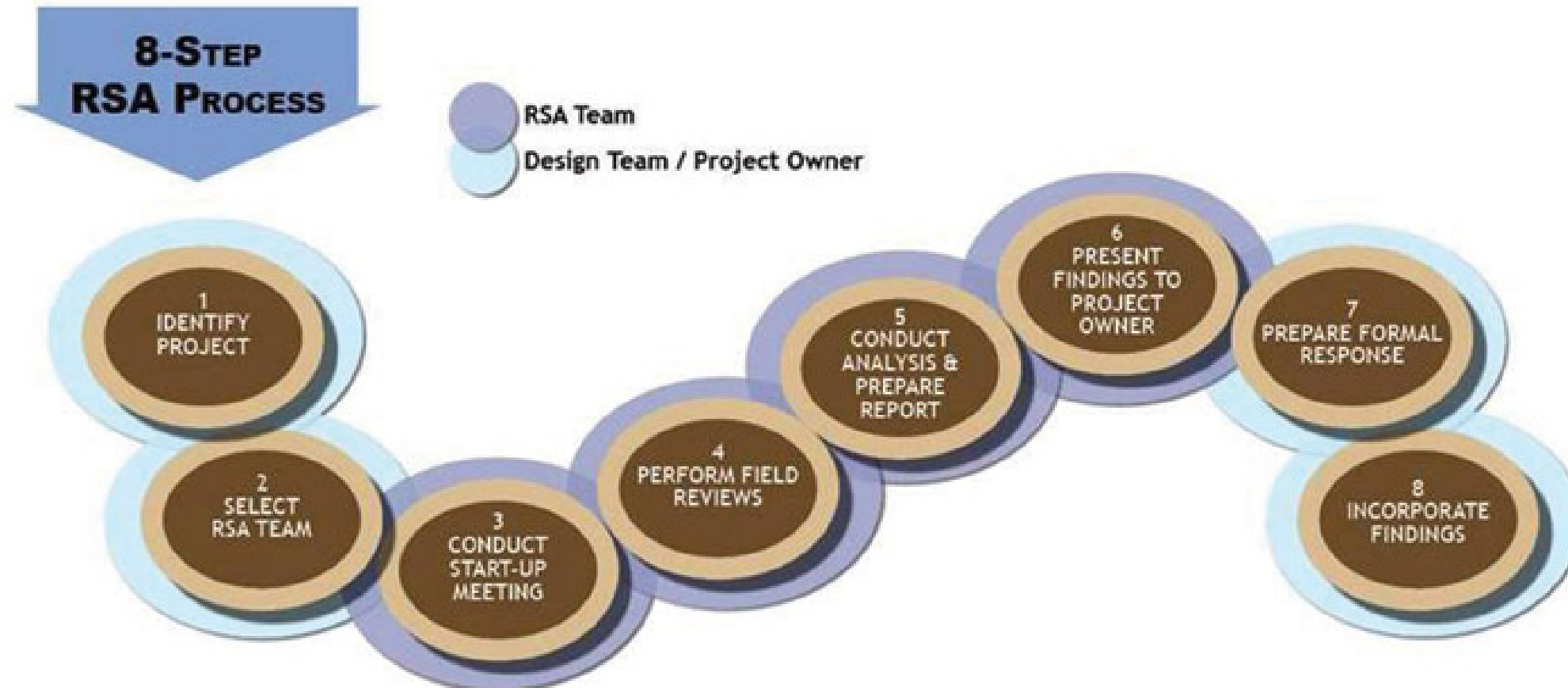


<http://safety.fhwa.dot.gov>

RSA PROCESS

❖ Federal Process

- Eight steps (we are on steps 3 and 4)
- Step 5-7 will be completed by end of July
- Step 8 timeline to be determined



RSA PROCESS

❖ Objectives of RSA

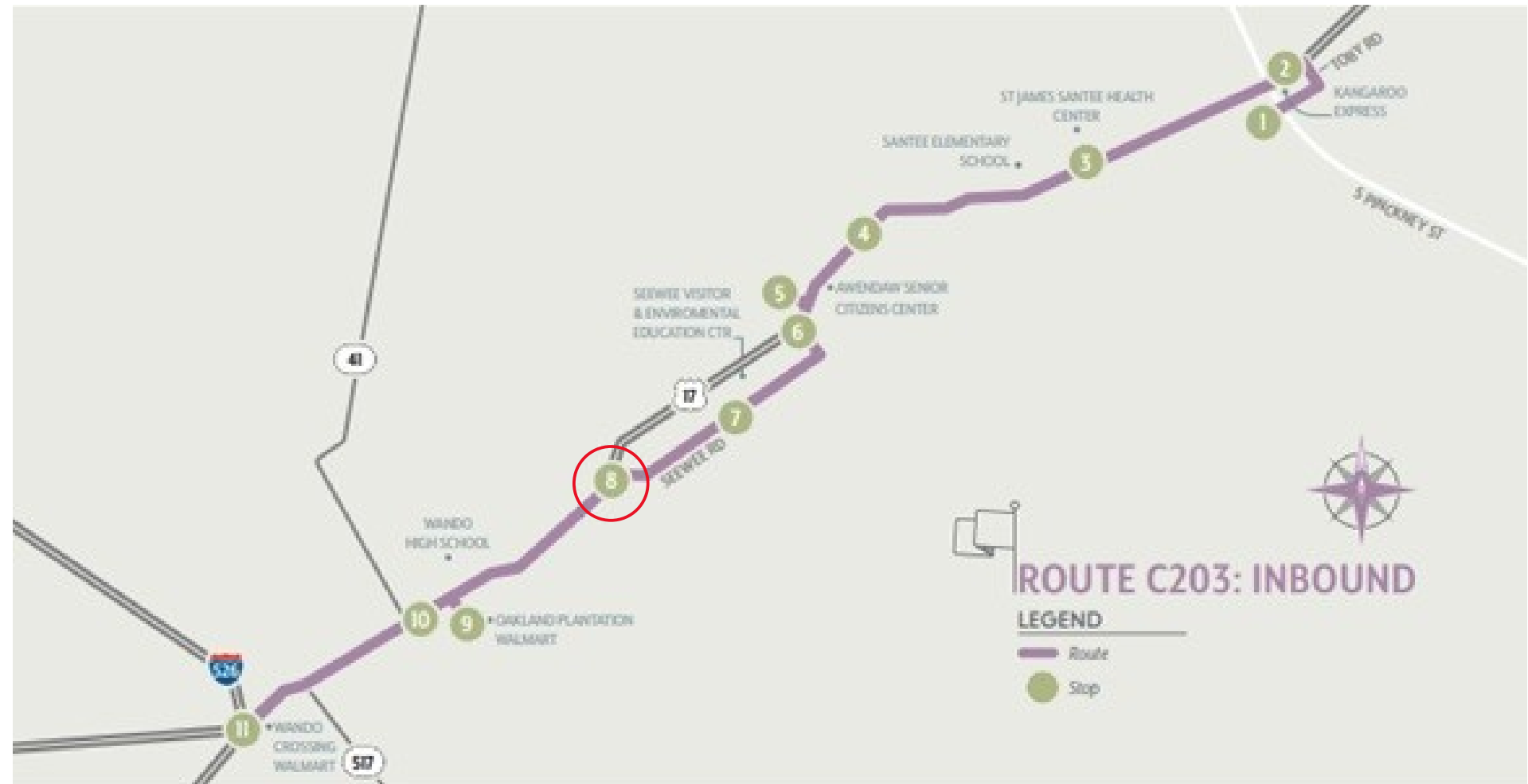
- **Identify elements of the road that may present a safety concern**
- **What opportunities are there to mitigate these concerns?**
- **Identify potential corrective actions**
 - **Short-term projects**
 - **Mid-term projects**
 - **Long-term projects**



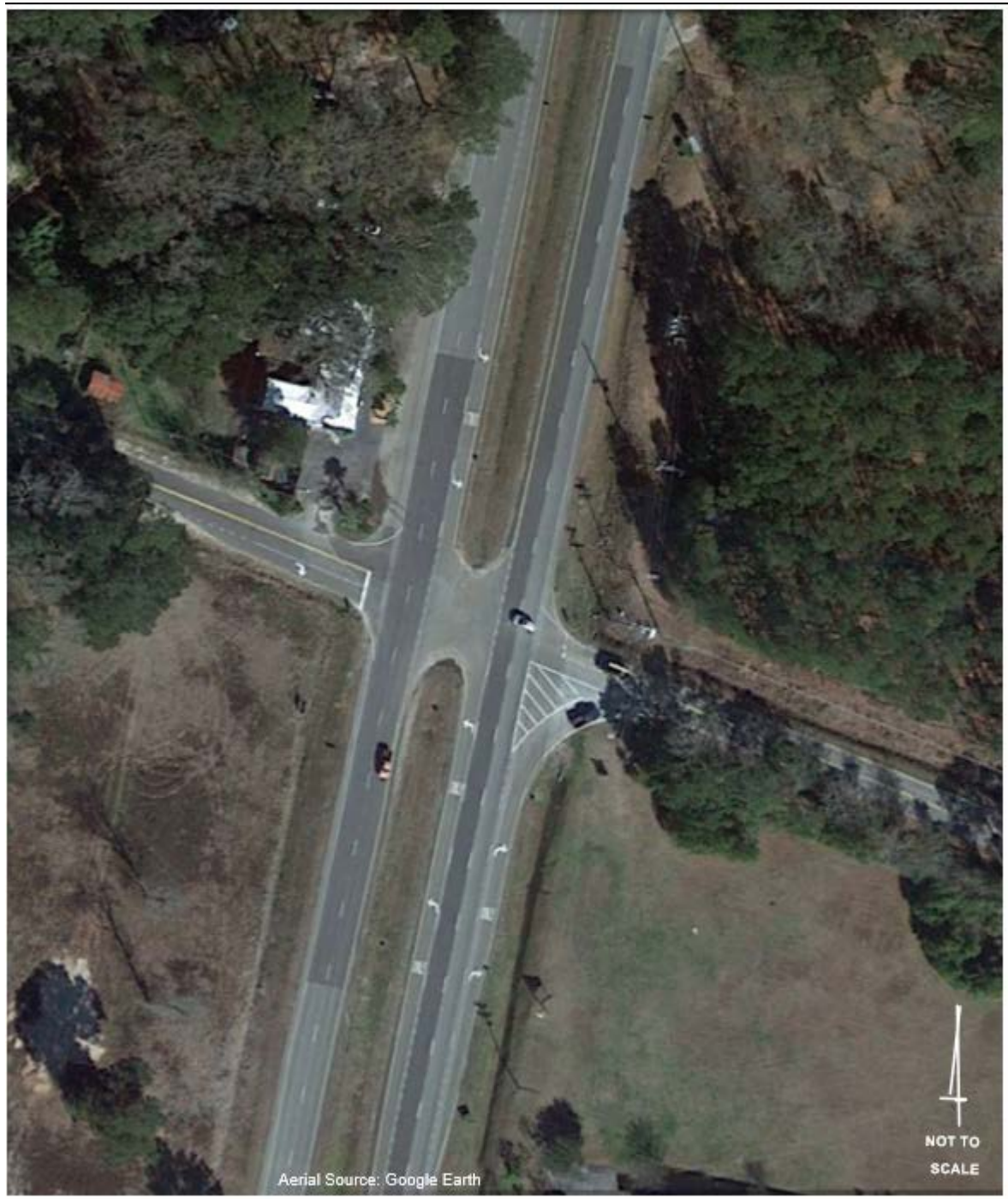
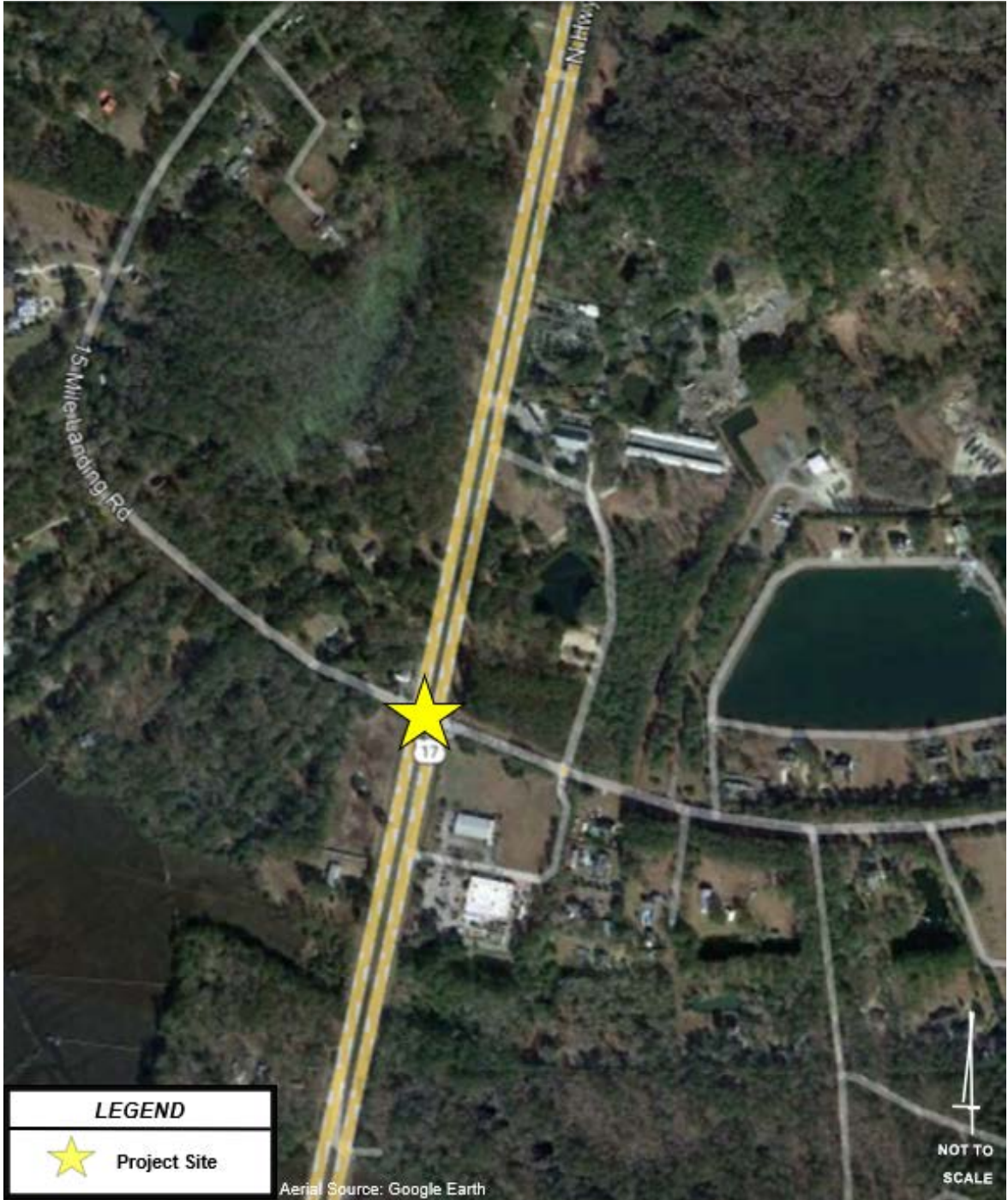
RSA PROCESS

❖ Expected users

- Passenger Cars/Trucks
- TriCounty Link Bus service
- Tractor Trailers
- Limited/No Bikes or Pedestrians



SITE LOCATION



SITE LOCATION



RECENT SAFETY IMPROVEMENTS

❖ SCDOT Safety Review (2017)

- Noted all angle collisions
- Identified a need for pavement marking and signs upgrades
- No sight distance issues noted
- Speed Study performed in 2020. No changes recommended to posted speed.

HMMS # 38442 MP 48.72 (**Signing**) US 17 @ S-584 Seewee Rd/Fifteen Mile Landing Rd
 HMMS # 39142 (**Pavement Markings**) US 17 @ S-584 Seewee Rd/Fifteen Mile Landing Rd
 > Refresh 4" white mini skips through the intersection as noted.
 > Install approx. 175' solid 4" yellow line between the two "No Parking Highway side of Yellow line" on the restaurant side of US 17.

HMMS # 42508 (**Side Street signing**)



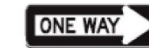
R5-1-36
Existing



W2-1-36
NEED (4) signs
TYPE XI Sheeting



(2) W16-18P
TYPE XI
Sheeting



HMMS WO # 42508
R6-1-36L
R6-1-36R

Install signs above
existing stop signs
on Seewee Rd approaches
R1-1-36



R6-3-30
(2) Signs

R6-3-30 Install below
existing stop signs on
Seewee Rd approaches



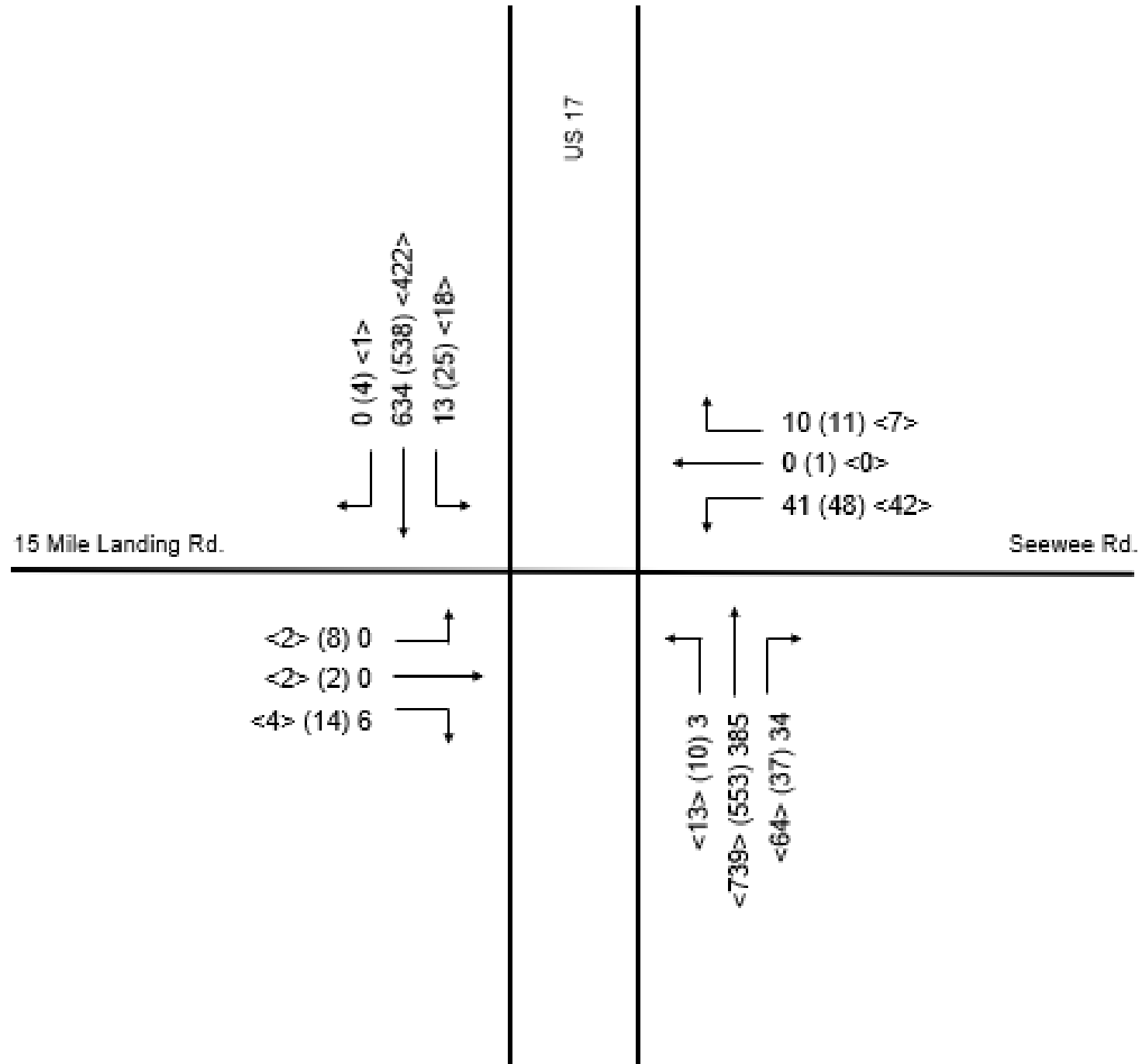
R5-1a-36
Install (3) signs
100' from
"DO Not Enter"
signs

DAILY TRAFFIC TRENDS

SCDOT Average Annual Daily Traffic (AADT) Counts by Year

Roadway	Road Section		Year											% Growth / Year
	Start	End	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
US 17 (sta. 135)	SC 41	15 Mile Landing Road	28,900	28,900	29,600	26,300	37,300	38,600	39,700	41,200	41,500	38,400	50,400	5.72%
US 17 (sta. 137)	15 Mile Landing Road	Tibwin Road	8,200	9,700	9,400	8,400	9,700	10,400	11,300	11,100	11,800	11,000	10,900	2.89%
Seewee Road (sta 512)	US 17	Doar Road	1,400	1,700	1,400	1,600	1,300	1,550	1,400	1,550	1,750	1,850	1,500	0.69%

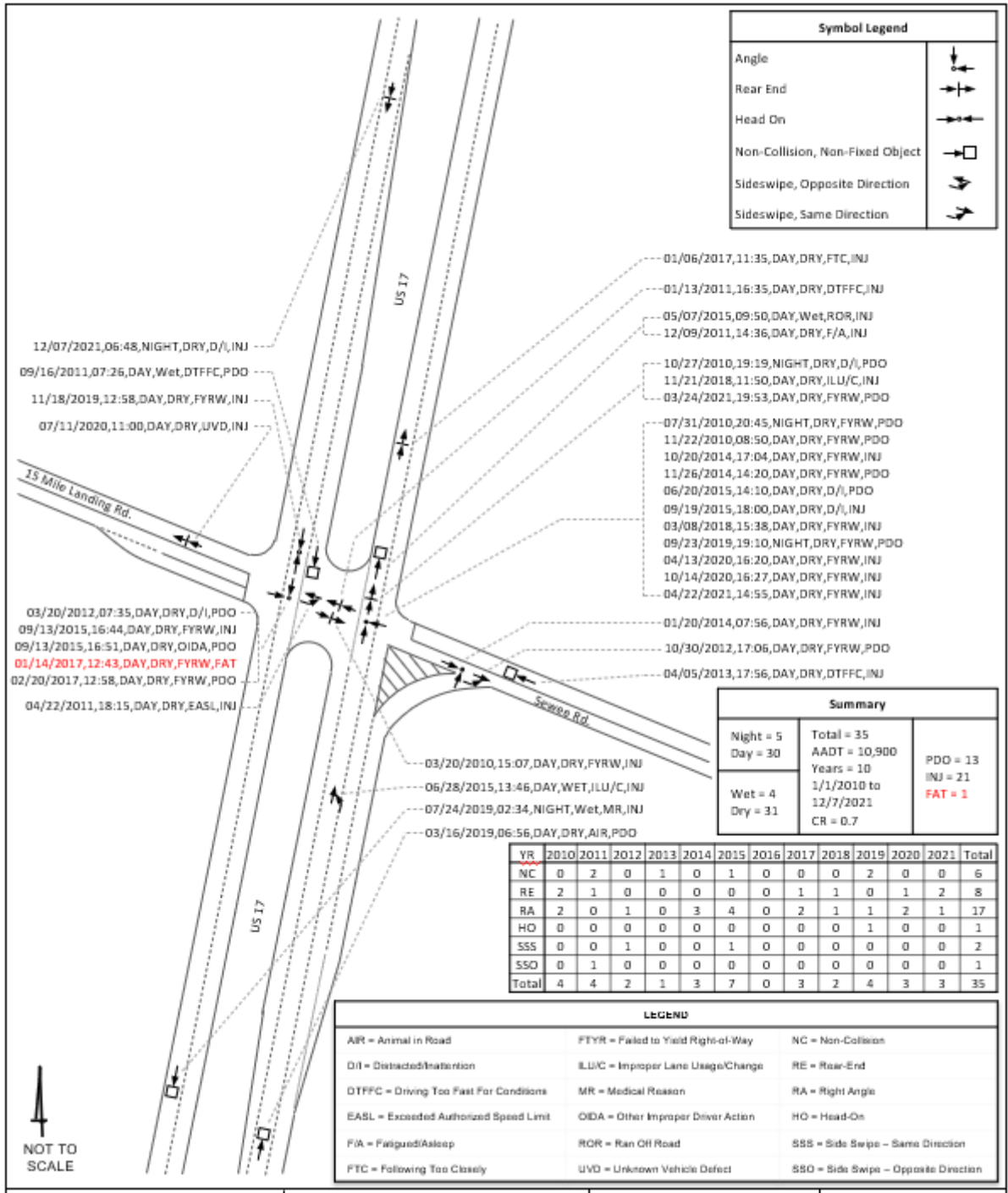
EXISTING TRAFFIC VOLUMES



LEGEND	
XX	AM Peak Hour Traffic (9AM – 10AM)
(XX)	Midday Peak Hour Traffic (12:45PM – 1:45PM)
<XX>	PM Peak Hour Traffic (3:30PM – 4:30PM)

- Limited to no pedestrian traffic
- US 17 – 6% HV
- Seewee Road – 6% HV
- 15 Mile Landing Road – 5% HV

COLLISION DIAGRAM



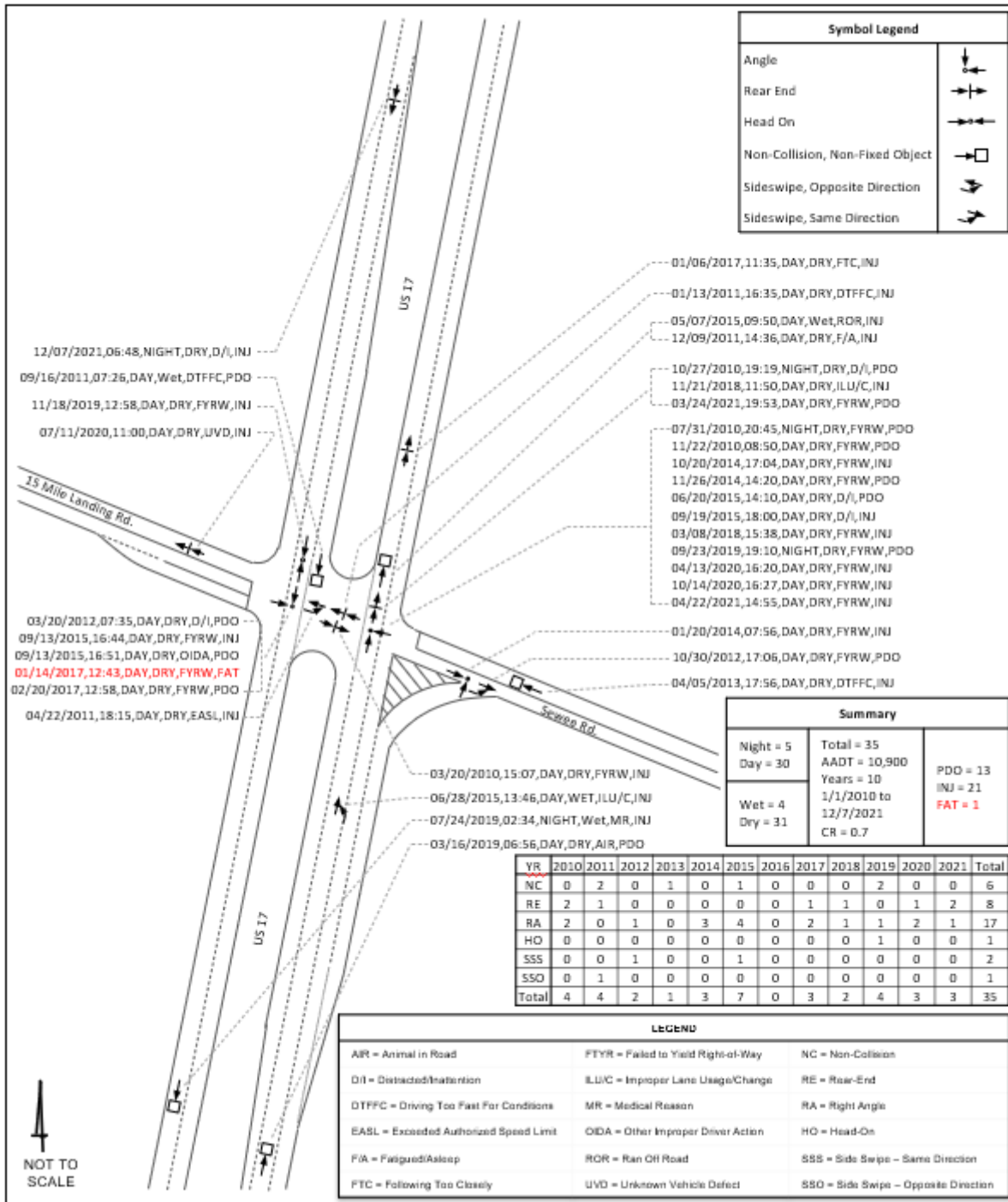
Crash Analysis – Collision Type and Injury Status

Manner of Collision	Number of Collisions	Percent of Total	Injury Status			
			Property Damage Only	Injury	Fatal	
Not Collision with Motor Vehicle	Non-Collision	6	17.1%	2	4	0
	Non-Fixed Object	0	0.0%	0	0	0
	Fixed Object	0	0.0%	0	0	0
	Unknown	0	0.0%	0	0	0
Rear End		8	22.9%	2	6	0
Angle		17	48.6%	8	8	1
Head On		1	2.8%	0	1	0
Sideswipe, Same Direction		2	5.8%	1	1	0
Sideswipe, Opposite Direction		1	2.8%	0	1	0
Total		35	100%	13	21	1

Crash Analysis - Light and Road Surface Conditions

Conditions	Number of Incidents	Percent of Incidents on Road Section	
Light Conditions	Daylight	30	85.7%
	Dark	5	14.3%
Total		35	100%
Road Surface Conditions	Dry	31	88.6%
	Wet	4	11.4%
Total		35	100%

COLLISION DIAGRAM



Crash Analysis – Primary Contributing Factor for Incident		
Cause	Number of Collisions	Percent of Total
Animal in Road	1	2.8%
Exceeded Authorized Speed Limit	1	2.8%
Distracted/Inattention	5	14.3%
Driving Too Fast for Conditions	3	8.6%
Failed to Yield Right of Way	17	49.0%
Followed Too Closely	1	2.8%
Fatigued/Asleep	1	2.8%
Improper Lane Usage/Change	2	5.7%
Medical Reason	1	2.8%
Other Improper Driver Action	1	2.8%
Ran Off Road	1	2.8%
Unknown Vehicle Defect	1	2.8%
Total	35	100%

CONCEPTUAL ALTERNATIVES

❖ Alternative 1

- Convert 15 Mile Road to RIRO and add acceleration lane to US 17 SB



❖ Alternative 2

- Add acceleration lanes on both NB/SB US 17 with concrete median



❖ Alternative 3

- Reconfigure to an RCI



ON SITE MEETING

❖ Where to meet

- **Tractor Supply Parking lot for afternoon**
- **Sewee Restaurant Parking Lot for morning.**



US-17 at S-584 (15 Mile Landing Rd./Seewee Rd.)
Road Safety Audit
Post-Audit Meeting Agenda

General observations regarding site visit.

Findings, suggestions, and prioritization of safety issues

- Safety Issue 1 (most important) – Description of issue, evaluation of safety risk, suggestions for improvements
- Safety Issue 2 – etc.

Formal conclusions / statements

- RSA team members have agreed or reached consensus on its findings.

