Preliminary Project Planning and Environmental Screening Report

Jenkins Island Access Management System

Beaufort County, South Carolina

November 20, 2015

Executive Summary

The Jenkins Island Access Management Study, as reported in this document, is to analyze and evaluate traffic conditions on the island (along US 278 between the J. Wilton Graves bridge and the causeway onto Hilton Head Island) and develop and evaluate alternative roadway improvements to ease the existing access issues on the island, while also improving safety and operational efficiency with minimal disruption to through traffic along US 278. Secondly, the report develops a Purpose and Need, in compliance with NEPA, to prepare the project for future stages of development; evaluating each alternative against potential environmental impacts. This Purpose and Need statement shall guide the project through the NEPA process to ensure that the proposed solution has been duly analyzed to meet the stated Purpose and Need.

US 278 is a four-lane, median divided principal arterial servicing approximately 53,200 vehicles per day (2014 SCDOT data), with access points at Blue Heron Point Rd., Crosstree Dr. and Jenkins Island Rd. All three side roads are stop-controlled at their intersection with US 278. Drivers at these intersections currently (and in the future without any improvements) experience extremely long delays (the time it takes to make a desired turn from the side road onto US 278) and obvious safety concerns. Safety issues include the lack of acceptable gaps in US 278 traffic for left turns, therefore causing motorists to make split-second decisions, and for right turns, the lack of available acceleration lanes for merging movements. These safety concerns have been evaluated through the review of accident data and reports and analyzed against the proposed alternatives.

Analysis of the available accident data shows a total of 79 accidents over a three year period with 67 of the 79 occurring at the three intersection points along US 278 on Jenkins Island. The majority of accidents are rear-end, run-off-the-road and angle type crashes which are attributed to excessive speeds, lack of acceleration / deceleration lanes, inadequate shoulder widths and risky turning movements from side roads. Of the 79 total accidents reported under this study, no fatalities were reported. There are no known geometric deficiencies (horizontal and vertical) along the US 278 corridor within the project boundary excepting line-of-sight deficiencies at intersections. Vegetative growth in the median and adjacent to the roadway, along with intersection alignments relative to the US 278 mainline curvature are instrumental in these existing deficiencies. The speed limit along US 278 is 55 mph within the project area (posted speed beginning on the J. Wilton Graves Bridge) with normal running speeds much higher. Speeds along US 278 are a concern to the citizens of the area and are attributable to a majority of the safety issues along the corridor. Reduction of the speed limit within the project area is a primary recommendation for the project irrespective of any access improvements. A reduction to 45 mph should provide improvement to the safety conditions while at the same time minimizing impacts to the operation of the through traffic along US 278. Speed reduction, along with the access management alternatives studied and recommended in this report, should provide acceptable benefits to the transportation needs of the surrounding communities.

An alternatives analysis was conducted for the corridor to include a No-Build option and two Build options, each analyzing existing and future traffic operations, while also examining potential alternatives for consideration. Alternatives that were considered but eliminated from further review included a grade-separated structure with connector roads and the potential relocation of Crosstree Dr. to Jenkins Island Rd. with the installation of a new traffic signal. The grade-separated structure alternative was eliminated due to considerable residential relocations that would have been required while the proposed, new signal-controlled intersection was eliminated due to failing signal warrant studies. The two Build options that were analyzed, including their notable design features, are shown below;

Alternative 1: Right-in Right-out with Frontage Road

- *Closes all existing median cross-overs, therefore, all left turn movements from side roads and from US 278 would be prohibited; only right-in, right-out movements allowed.*
- *A new frontage road to be constructed between Blue Heron Point Rd. and Jenkins Island Rd.*
- *The intersection of Blue Heron Point Rd. and US 278 would require realignment and widening to accommodate heavy vehicle turning movements.*
- *The Windmill Harbour maintenance access road intersecting Blue Heron Point Rd. would require modifications in order to provide ingress / egress.*
- *Adequate acceleration / deceleration lanes along US 278 to be provided at each intersection.*

Alternative 2A: Modified Super-Street with Traffic Signals

- *Existing median cross-overs at Crosstree Dr. and Jenkins Island Rd. to be closed while the cross-over at Blue Heron Point Rd. to be reconstructed, however, only right-in, right-out movements from the side roads to be allowed at these intersections.*
- *The existing intersection with Blue Heron Point Rd. to be reconstructed to provide a left turn in from US 278 while also constructing a bulb-out to allow westbound US 278 traffic to make a U-turn. The left and U-turn movements would be protected by the proposed placement of a traffic signal in the US 278 eastbound direction.*
- *A second traffic signal would be installed in the westbound direction of US 278, just west of the Jenkins Island Rd. intersection. This traffic signal installation would allow eastbound US 278 traffic to make a protected U-turn.*
- *A third travel lane would be constructed in both the eastbound and westbound directions of US 278 from the end of the J. Wilton Graves bridge to the causeway onto Hilton Head Island. These lanes would provide acceleration / deceleration and capacity along US 278.*
- *A dedicated right turn lane from US 278 onto Crosstree Dr. to be constructed in order to provide storage for vehicles entering Windmill Harbour so that operational capacity of the three lanes on US 278 are not delayed.*

For a new traffic signal to be considered for installation, applicable signal warrant guidelines, as published by the Federal Highway Administration (FHWA) and strictly followed by the SCDOT, must be met prior to consideration. A warrant analysis was conducted for the considered, new signal-controlled intersection at Crosstree Dr. and Jenkins Island Rd. and for the Build option of Alternative 2A as described above. Of the four applicable signal warrants for this study, Alternative 2A met three of the four, while the considered, new signal-controlled intersection met no warrants, thus its feasibility as an applicable alternative was excluded. Approval of new traffic signals by the SCDOT require submittal of the raw traffic data utilized for the warrants along with the signal warrant output data and applicable studies for their review. Should no warrants be met for a location proposed for a traffic signal, the SCDOT will not approve the location. The applicable warrants for this study included eight-hour vehicular volumes, four-hour vehicular volumes, peak hour volumes and crash experience. The considered signal-controlled intersection at Crosstree Dr. and Jenkins Island Rd. does not meet the vehicular volume requirements for the minor road approaches (Crosstree Dr. and

Jenkins Island Rd. volumes combined) respective of the warrant criteria and the project traffic counts. Regarding the warrant for crash experience, a location must have a minimum of five reported crashes within a single year in which the installation of a traffic signal would have made correctable. The traffic signal options studied under this report would not meet this warrant because the majority of the historical accidents within the project area would not be reduced by the implementation of a traffic signal. See Section 4.4 of the report for details of the signal warrant analysis.

An operational analysis was conducted for both Build alternatives to determine the level of service (LOS) conditions for the opening year and the design year (2020 & 2035, respectively). This analysis concluded that each alternative would provide satisfactory operations and LOS through the design year with Alternative 1 providing slightly better operations. The analysis of Alternative 2A indicates that the installation of traffic signals along US 278 would not expect to produce any significant adverse impacts on through traffic along US 278 as the majority of green time would be allocated to the through movements.

The Jenkins Island Access Management Study also researched environmental resources and evaluated their impacts based on the proposed Build alternatives. Evaluated resources include wetlands, fish and endangered species, permitting requirements, cultural resources, noise, air quality, hazardous materials and right-of-way acquisitions. Preliminary environmental impacts associated with Alternative 1 include wetlands requiring US Army Corps of Engineers permitting, floodplain coordination, noise analysis requirements and nearly 6 acres of new right-of-way acquisition. Alternative 2A would require less stringent permitting due to no wetland impacts, no noise analyses and only 1 acre of new right-of-way. The comparison charts below provide positive and negative influences of each alternative based on roadway geometry, operations, safety, cost and environmental impacts.

Alternative 1: Right-in Right-out with Frontage Road

Advantages

1. Provides prohibition of all left turns
2. Provides acceleration / deceleration lanes
3. Significantly reduces the number of conflict points (from 9 to 2)
4. Minimizes disruption to through traffic on US 278
5. Mitigates crashes related to all left-turning movements
6. No median crossovers

Disadvantages

1. Increase in travel distances & time
2. Merging conflicts
3. Some weaving conflicts between side road traffic
4. Most expensive to construct ($13.9 million)
5. Wetland impacts requiring special permitting
6. Increased right-of-way acquisition
7. Noise analysis required
8. Turning movements more difficult for large vehicles
9. Potential negative impacts to Blue Heron Point, Mariners Cove and Windmill Harbour residents

Alternative 2A: Modified Super-Street with Traffic Signals

Advantages

1. Prohibition of left turns from side roads
2. Traffic signals to provide protected left and U-turn movements
3. Reduced number of conflict points (from 9 to 5)
4. Mitigates crashes related to left-turns from side roads
5. Less expensive to construct (approx. $7.4 million)
6. No critical wetland impacts
7. Less right-of-way acquisition
8. No noise analysis required
9. Signals located in areas of adequate visibility and sight distance
10. Provides widening of US 278 to three lanes in each direction (future planned project)

Disadvantages

1. Increase in some travel distances & time
2. Still have to wait for gap in oncoming traffic to turn right from side roads
3. Weaving conflicts for some side road traffic and U-turn movements
4. Minimal disruption to through traffic on US 278
5. Potential increase in accidents related to signals (rear-end)

The proposed Recommended Alternative for this project is Alternative 2A: Modified Super-Street with Traffic Signals. This report shows the operational and safety benefits of the proposed improvements while minimizing impacts and delay to the through traffic along US 278. Costs, environmental impacts and rights-of-way acquisitions are all reduced and / or negated with Alternate 2A. The improvements recommended under this alternate shall also provide for the widening of US 278 to three lanes in each direction, which is an anticipated project on Beaufort County's Long-Range Transportation Plan (LRTP) in order to meet current and future traffic demands. Providing additional credence to the recommended alternative is a project proposed by the Town of Hilton Head Island for improvements to US 278 at the intersection of Squire Pope Rd. The Town's project proposes the construction of a third lane along US 278 in the westbound direction from Squire Pope Rd. to Jenkins Island Rd. which matches the improvements to Alternative 2A. Therefore, to increase the benefit of the proposed third lane along US 278 in the eastbound direction within the Jenkins Island project corridor, it is proposed to potentially extend this lane to the Squire Pope Rd. intersection. These recommended improvements would therefore provide three lanes of travel in each direction from the termini of the J. Wilton Graves Bridge on Jenkins Island to Squire Pope Rd. Alternative 2A will provide added safety for the access points along Jenkins Island while prohibiting left turns from the side roads and protected left turns / U-turns at the signal locations. The existing Crosstree Dr. intersection, while becoming an exclusively right-in / right-out access, will gain a clear gap in US 278 traffic during the green time for the left turn / U-turn phase at the Blue Heron Point Rd. signal location. This will allow traffic to turn right from Crosstree Dr. and navigate to the left turn / U-turn signal past Jenkins Island Rd. safely during the signal phase. Motorists from Crosstree Dr. will still be able to make right turns from the access upon yielding during the signal phase where US 278 is on green. The access point at Jenkins Island Rd. will operate exactly the same as the movements from Crosstree Dr., gaining a clear gap in US 278 traffic during the green phase for the left turn / U-turn signal just past Jenkins Island Rd. This right-turning traffic can then navigate to the left turn / U-turn signal at Blue Heron Point Rd. safely during this gap. Blue Heron Point Rd. shall become right-in / right-out / left-in (from US 278) with the proposed recommendations following the same operations at Crosstree Dr. and Jenkins Island Rd as described above.

The Jenkins Island Access Management Study provides evaluation of the existing conditions, proposed alternatives, traffic operations, signal warrant studies and environmental constraints particular to the project corridor. The document provides specific details and justifications for the proposed recommendations as a tool for future project development and access management improvements for the communities on Jenkins Island and the daily flow of traffic utilizing US 278 between Bluffton and Hilton Head Island.

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1 Introduction

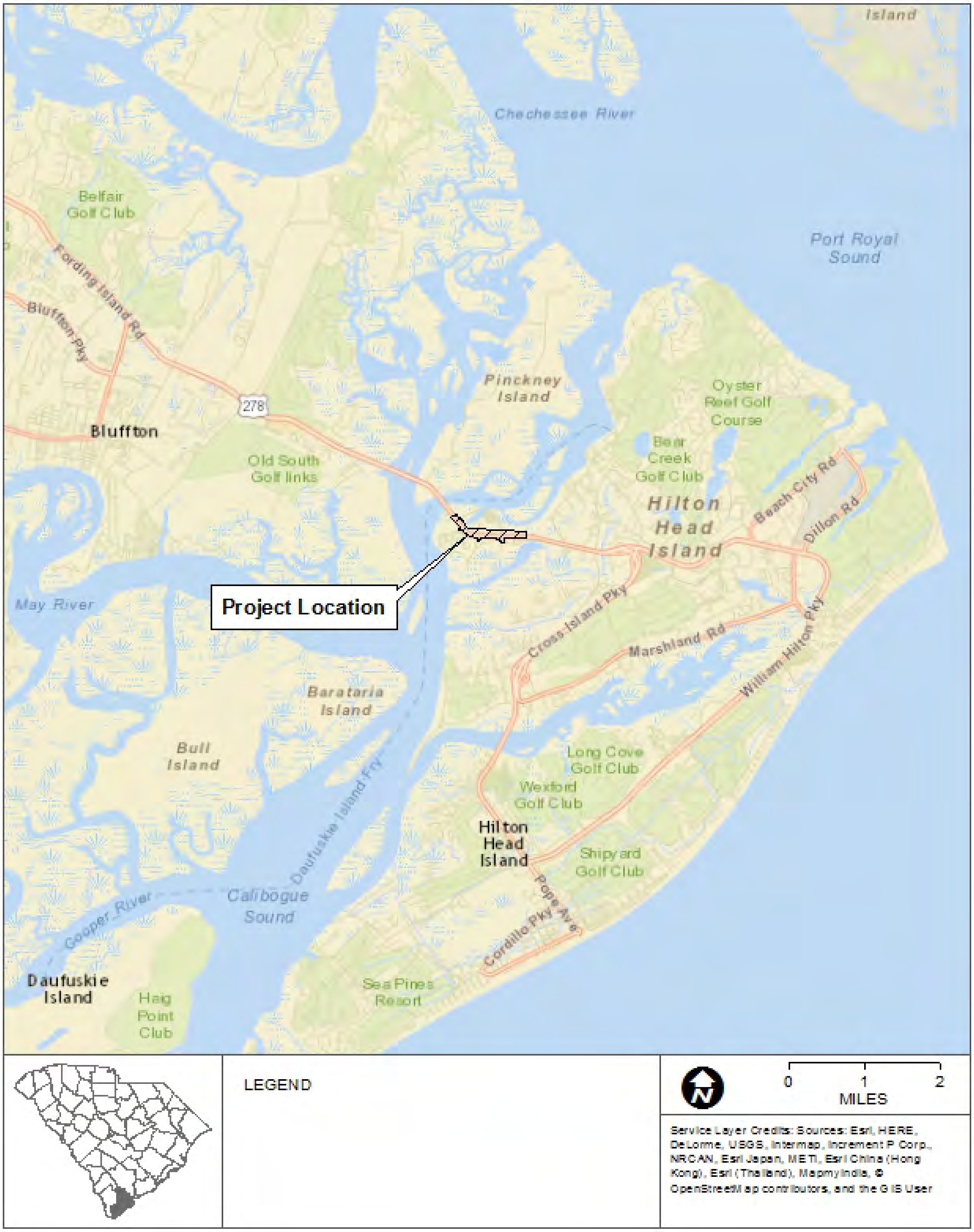
1.1 Project Study Area

The Project Study Area is located on US Highway 278 (herein, US 278) in Beaufort County, between Pinckney Island and Hilton Head Island (Figure 1-1 and Figure 1-2). The Project Study Area includes US 278 from the termini of the J. Wilton Graves Bridge to the beginning of the causeway onto Hilton Head Island, for a length of approximately 5,500 linear feet. The Project Study Area includes approximately 69 acres along Jenkins Island and Hog Island, incorporating portions of the South Carolina Department of Transportation (SCDOT) Right-of-Way, SCDOT-owned parcels, and a high-voltage electrical transmission lines easement owned by Santee Cooper (Figure 1-3). The Town of Hilton Head Island owns a larger parcel north of US 278 on Jenkins Island.

1.2 Project History

Communities within the Project Study Area have expressed concern about safe access to and from US 278 via the three existing median cross-overs: Blue Heron Point Road, Windmill Harbour Entrance, and Jenkins Island Road. During the past several years, the SCDOT, Beaufort County, and Windmill Harbour Property Owners Association have evaluated potential solutions to improve access within the study corridor.

- In 2009, the SCDOT conducted a signal justification study at US 278 and the Windmill Harbor entrance. The study found that volume from Crosstree Drive and Gateway Drive did not warrant signalization. The collision history also did not reveal a pattern of collisions that could be corrected with the installation of a traffic signal.
- In 2010, the Town of Hilton Head Island provided an Engineering Study to the SCDOT indicating that traffic signals were not warranted at US 278 and the Windmill Harbour entrance. The study recommended constructing a parallel route on the northern side of US 278 between Blue Heron Point Road and Jenkins Road as a long-term solution to improve access, operations and safety. The study also considers the use of U-turn median lanes with “jughandles” at the three cross-overs; however, the study found that U-turn lanes generally work in longer segments of road to prevent lane changes in preparation for a left-turn in the median. The study also recommended the SCDOT study reducing the speed limit west of the Project Study Area from 55 MPH to 50 MPH.
- In 2011, at the request of the Town and County, the roadway improvement project was included in SCDOT’s Six Year (2009 to 2015) Statewide Transportation Improvement Program (STIP). Since inclusion in the STIP, the State has managed the project and provided $1,400,000 in funding. The project is not listed in the current STIP, Revision 16, dated March 19, 2015.
- In August 2013, Windmill Harbour Property Owners Association provided Beaufort County with a “Compromise Plan to Provide Major Safety Improvements to Jenkins Island Residents”. The plan expressed concern with the construction of a “flyover”



connecting Bluffton Parkway to US 278 approximately 2 miles west of the Project Study Area.

Figure 1-1. Project Location

Figure 1-2. USGS Topographic MapThis page is intentionally left blank.

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Figure 1-3. Parcels and Communities Surrounding Project Study Area
Source: Beaufort County GIS

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Residents of Windmill Harbour Property Owners Association were concerned that the flyover would eliminate existing gaps in traffic that allow turning movements from Windmill Harbour onto US 278. The plan recommended constructing a new westbound intersection near Blue Heron Point Road that would provide access and egress from US 278 to Windmill Harbour; Mariner's Cove, and Blue Heron Point neighborhoods. The plan also recommended closing the existing Blue Heron Point intersection, converting the back entrance to Windmill Harbour to an exit only option, and deceleration and acceleration lanes on US 278 at the entrance to Windmill Harbour.

- In January 2014, Beaufort County Traffic Engineering provided a review of Windmill Harbour Property Owner's Association Compromise Plan. The review supported the proposed intersection in order to eliminate left-turn exits at Blue Heron Point Rd and Windmill Harbor. The review found that, with additional design revisions, the plan should provide a significant safety benefit to visitors and residents without negatively impacting the significant volume of daily thru traffic on US 278.
- Current construction (SCDOT Project ID 0041808 – 2014) along US 278 at the Windmill Harbour entrance (Crosstree Drive) proposes to extend the outbound acceleration lane (eastbound) to approximately 1000 feet and constructing an offset median left turn lane with median channelization islands. No new rights-of-way are proposed for the construction of this project.

Separately, but directly connected to the transportation issues relative to this project, the Town of Hilton Head Island has proposed improvements at the intersection of Squire Pope Road and US 278, approximately 0.50 miles east of the Jenkins Island Access Management Study project termini. The improvements proposed by the Town include the widening of westbound US 278 from Squire Pope Road to Jenkins Island Road; therefore, adding a full, third lane between these roads. As of the date of this report, the project proposed by the Town of Hilton Head Island is in the preliminary design phase. Future design initiatives involving the Jenkins Island Access Management project should coordinate closely with the Town of Hilton Island and their proposed plans in order to maximize potential transportation benefits offered by both projects.

2 Purpose and Need

2.1 Purpose

The purpose of the project is to improve operational efficiency along the US 278 corridor on Jenkins Island in Beaufort County. A goal of the project is to improve the Level of Service at intersections within the Project Study Area. The scope of the project includes development of a solution through alternative analysis, and in consideration of environmental constraints, to provide a safe and efficient access to local communities with minimum disruption to “through” traffic on US 278.

2.2 Need

2.2.1 System Linkage

The Lowcountry 2007 Long-Range Transportation Plan (LRP) forecasts transportation system conditions within Beaufort, Jasper, and Colleton Counties. US 278 provides an important transportation link between Bluffton and Jenkins Island, Hog Island, and Hilton Head Island in meeting daily transportation needs and as a hurricane evaluation route. Beaufort County and Hilton Head Island have and are continuing to experience rapid population growth.

In the mid-1970s, US 278 was widened from two to four travel lanes within the Project Study Area. US 278 has since been widened to a six-lane divided highway, tapering to four lanes in the approach to Karl V. Bowers Bridge onto Pinckney Island, approximately 2 miles west of the Project Study Area. The US 278 Karl V. Bowers Bridge and J. Wilton Graves bridges over Mackay Creek and Skull Creek, respectively, only accommodate two travel lanes in each direction. US 278 remains a four-lane divided highway on Hog Island and Jenkins Island, widening to a six-lane highway at Squire Pope Road on Hilton Head Island, approximately 0.5 miles from the Project Study Area.

2.2.2 Operational Deficiencies

The LRP identifies the Project Study Area as highly congested. US 278 in the vicinity of the Study Area is a four-lane divided principal arterial serving approximately 53,200 vehicles per day (SCDOT 2014 ADT). Beaufort County commissioned a traffic study to identify transportation deficiencies and the need for improvements.

The traffic study uses Level of Service (LOS) as the measure to evaluate and compare operating conditions within the Project Study Area. LOS is a qualitative measurement of traffic factors including speed, volume, geometric features, interruptions, delay and the ability to maneuver. The Highway Capacity Manual (HCM) defines six levels of service ranging from LOS “A”, which represents the best operating conditions, to LOS “F”, which represents the worst.

The traffic study focused on delays experienced by drivers at the three intersections within the Project Study Area: Blue Heron Point at US 278, Crosstree Drive at US 278, and Jenkins Island Road at US 278. These intersections are not controlled by a traffic signal. The study analyzed how long drivers wait to turn from a secondary roadway onto US 278, otherwise known as the “control delay”. Table 2-1 summarizes the relationship between control delay and Level of Service for unsignalized intersections.

Table 2-1. Level of Service Criteria

Level of Service	Control Delay (seconds/vehicle)	Traffic Flow Description
	Unsignalized Intersection	
A	0-10	Free-flow conditions. Desired movements are virtually unaffected by the presence of other vehicles.
B	> 10-15	Traffic flow is stable. The presence of other vehicles only slightly restricts the freedom to maneuver.
C	> 15-25	Traffic flow is stable, but increasing difficulty of turning maneuvers.
D	> 25-35	Approaching unstable traffic flow conditions.
E	> 35-50	Unstable traffic flow conditions.
F	>50	Unacceptable LOS. Very unstable traffic flow conditions exist.

The traffic study was performed for the existing year (2015), opening year (2020) and design year (2040) traffic volumes. For the 2035 No-Build condition, it was assumed that US 278 would be widened to provide an additional through lane in each direction.

Table 2-2 shows the results of the capacity analyses for no-build condition. The analyses of the existing condition (2015) indicate that all intersections (side road approach) are currently operating at LOS E and LOS F with long delays during peak periods. Due to high volumes of through traffic and not having adequate gaps, some of the side road traffic is expected to wait more than 10 minutes to safely make left-turns onto US 278. During field investigations and public outreach, it was determined that during peak hours many motorists from these side roads are forced to make right-turns and then go to the nearest signalized intersections (more than a mile on US 278) to make a U-turn to reach their destination. Under future no-build conditions, the side road traffic would continue to operate at LOS F with longer delays. It should be noted that for the 2035 no-build condition, US 278 was considered to be widened to provide three lanes in each direction. The capacity analyses (2035 no-build condition) indicate that improvements to US 278 alone would not alleviate the existing operational deficiencies of the side road traffic.

Table 2-2: Intersection Levels of Service Summary – No Build Condition

Intersection	Control	Movement	Condition	AM Peak			PM Peak			Weekend		
				LOS	Delay (Sec)	v/c	LOS	Delay (Sec)	v/c	LOS	Delay (Sec)	v/c
Blue Heron Point Road @ US 278	Free	WB (L)	Existing	E	40.6	0.03	C	18.1	0.06	D	28.0	0.05
			2020	E	42.8	0.03	C	18.6	0.06	D	29.2	0.05
			2035	E	48.9	0.04	C	20.0	0.07	D	32.6	0.06
	Stop	NB	Existing	F	1374	2.55	F	1238	2.07	F	354	0.63
			2020	F	1619	2.93	F	1454	2.38	F	421	0.73
			2035	F	1423	2.68	F	687	1.36	F	275	0.55
Crosstree Drive @ US 278	Free	WB (L)	Existing	F	53.7	0.22	C	20.1	0.20	D	29.4	0.12
			2020	F	57.8	0.24	C	21.9	0.21	D	30.9	0.13
			2035	F	70.2	0.29	C	23.0	0.24	D	34.9	0.15
	Stop	NBL	Existing	F	738	1.04	F	267	0.77	F	430	0.95
			2020	F	842	1.16	F	300	0.83	F	488	1.05
			2035	F	1146	1.53	F	248	0.76	F	627	1.27
Jenkins Road @ US 278	Free	EB (L)	Existing	B	13.3	0.01	F	61.5	0.19	C	21.1	0.14
			2020	B	13.5	0.01	F	66.3	0.20	C	21.9	0.15
			2035	B	14.1	0.02	F	80.7	0.25	C	24.1	0.17
	Stop	SB	Existing	E	48.9	0.21	F	473	1.25	F	70.8	0.30
			2020	F	51.6	0.23	F	547	1.38	F	76.0	0.32
			2035	E	38.0	0.18	F	632	1.55	F	70.4	0.31

Notes:

v/c refers to volume to capacity ratio, which is defined as the number of vehicles on the roadway at a specific time divided by the capacity of the roadway.

Control refers to the movement of the vehicle at the turn. For example, a vehicle traveling westbound on US 278 is not required to stop before turning left onto Blue Heron Point Road. However, a vehicle traveling northbound on Crosstree Drive is required to stop at a stop sign before turning left or right onto US 278.

Beaufort County 2010 Comprehensive Plan establishes a goal of LOS “D” for roads within the County. Red text indicates unacceptable LOS, or those worse than “D”.

3 Existing Facility and Conditions

US 278 in the vicinity of the Project Study Area is a four-lane divided principal arterial serving approximately 53,200 vehicles per day (SCDOT 2014 ADT). The existing roadway has earthen shoulders and a grassed landscaped median. The posted speed limit on US 278 is 55 miles per hour (MPH) west of the Study Area on the J. Wilton Graves Bridge. The speed limit on US 278 reduces to 50 MPH within the Project Study Area. The speed limit reduces to 45 MPH as US 278 approaches Hilton Head Island. US 278 is classified by the SCDOT and Beaufort County as a Principal Arterial Road and a Hurricane Evacuation route.

Three median cross-overs, Blue Heron Point Road, Windmill Harbour Entrance, and Jenkins Island Road, are currently serving the local, adjacent communities with limited or full access control on US 278.

- Blue Heron Point Road provides access to the residential communities on Hog Island, including Blue Heron Point and Mariner's Cove. The entrance to Blue Heron Point Road is located to the south of US 278, approximately 1,000 feet from the base of the J. Wilton Graves Bridge. The road then travels underneath the bridge to provide access to Hog Island. The Blue Heron Point Road intersection is located near the beginning of and within a long, broad horizontal curve on US 278.
    - A gated maintenance access connects Blue Heron Point Road to Crosstree Drive inside the Windmill Harbour community, which was used as the only access to the Windmill Harbour community during past renovations to their main entrance on US 278.
- The entrance to Windmill Harbour, a large residential community south of US 278, is located on Crosstree Drive. Gateway Drive is located across from the Windmill Harbour entrance, north of US 278, and provides access to an undeveloped Town-owned property. A water treatment facility operated by the Hilton Head Public Service District is located on the property.
- Jenkins Island Road provides access to Hilton Head Island RV Resort and Marina, which includes a restaurant, 200 RV sites, recreational facilities, and a 101 slip marina. The roadway is located north of US 278. The intersection is commonly used by recreational vehicles and vehicles pulling boat trailers.

3.1 Typical Section and Right-of-Way

The typical section of US 278 within the Project Study Area includes two, 12 foot travel lanes in each direction (eastbound and westbound) with 12 foot auxiliary left and right turning lanes at its intersections with Blue Heron Point Rd, Gateway Drive / Crosstree Drive and Jenkins Island Road. Two foot paved shoulders exist along the outer eastbound and westbound lanes of US 278 within the project area.

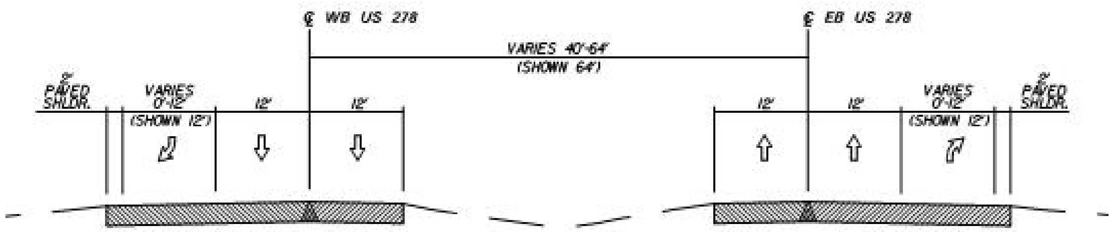

Figure 3-1. Typical Section of Existing US 278 Roadway

All existing side road intersections are stop-controlled. Blue Heron Point Road, Crosstree Drive and Jenkins Island Road provide full-access control with their intersections with US 278. Gateway Drive currently provides right-in / right-out only movements. At all intersections, the left-turn movements conflict with the opposing left-turns from US 278 due to the divided median; therefore, the opposing movements must share the paved median cross-overs for their turning movements and queue storage.

Blue Heron Point Road includes two, 11 foot lanes with no paved shoulders and is considered a local road as it currently serves all residential traffic. The existing Blue Heron Point Road that exists adjacent to the eastbound lanes of US 278 is the original alignment of US 278 prior to the construction of the bridges over Mackay Creek.

Gateway Drive is a two-lane, curb and gutter roadway with a landscaped median that serves an auxiliary Hilton Head Island Public Service District (PSD) site and is constructed wholly within undeveloped Town of Hilton Head Island property. The roadway also crosses the Santee Cooper transmission utility easement.

Crosstree Drive serves as the primary access point for the Windmill Harbour community and is opposite the intersection of Gateway Drive along US 278. The existing roadway at its intersection with US 278 is curb and gutter with a landscaped median. Within the community, all are two-lane, curb and gutter roadways.

Jenkins Island Road includes two, 11 foot lanes with no paved shoulders is considered a local road. It serves the Hilton Head RV Resort and Marina at its termini.

Existing rights of way along US 278 vary, with the majority of the roadway within a 150 foot right of way based upon the eastbound centerline (100 feet north of the centerline, 50 feet south of centerline). All rights-of-way along eastbound US 278 was recorded under SCDOT File No. 7.408 (1977), including the westbound direction from Gateway Drive to the causeway onto Hilton Head Island. The remaining rights-of-way along westbound US 278 (from the bridge to Gateway Drive was recorded under SCDOT File No. 7.419.1 (1978) and is based on the westbound centerline.

3.2 Traffic

3.2.1 Existing Traffic

In order to determine existing traffic demands and vehicular flow patterns, manual 12-hr turning movement counts were collected between 7:00 a.m. - 7:00 p.m. on Tuesday, June 16, 2015 and 7:00 a.m. - 7:00 p.m. on Saturday, June 13, 2015 for the following intersections:

- Intersection of US 278 and Blue Heron Point Road
- Intersection of US 278 and Crosstree/Gateway Drive
- Intersection of US 278 and Jenkins Road

Summarized traffic count sheets are attached in the Appendix A. The existing traffic volumes for the AM and the PM peak periods for the study intersection are summarized in Table 3-1 and are graphically represented in Appendix B (Figure B-1).

Table 3-1. 2015 Existing Traffic Volume Summary

Intersection	Time Period	Total Volume (vph)
Blue Heron Point Road @ US 278	Weekday AM	4366
	Weekday PM	4963
	Weekend Peak	4569
Crosstree Drive/ Gateway Drive @ US 278	Weekday AM	4446
	Weekday PM	5069
	Weekend Peak	4618
Jenkins Road @ US 278	Weekday AM	4423
	Weekday PM	5026
	Weekend Peak	4601

vph = Vehicles per hour

The traffic count data indicates that weekday AM peak hour generally occurs from 7:30 a.m. to 8:30 a.m., weekday PM peak hour generally occurs from 4:30 p.m. to 5:30 p.m., and weekend peak hour generally occurs between 3:45 p.m. to 4:45 p.m. for all the study area intersections.

In addition to the peak-hour manual traffic counts, annual average daily traffic volume on US 278 was obtained from the SCDOT. The 2014 Average Annual Daily Traffic Volume on US 278, which represents 2-way traffic, is approximately 53,200 vehicles per day (SCDOT 2014 ADT).

3.2.2 Future Traffic

In order to develop future traffic volumes, it is necessary to have a basis for projecting local and regional traffic growth. Travel Demand Model is a tool for projecting future traffic and assigning traffic to the roadway considering future growth in the area. The 2030 and 2040 projected traffic volumes within the study area were obtained from the Lowcountry Regional Transportation Model. The output files from the models are attached in Appendix A. Based on these models, an average growth rate of 0.35% per year was estimated. This growth rate was applied to the existing turning movement counts for the study area intersections to estimate opening year (2020) and design year

(2035) traffic volumes. The 2020 opening year and 2035 design year traffic volumes for the study area intersections are attached in Appendix B (Figure B-2 and Figure B-3).

3.3 Safety

To assess the current safety conditions within the study area, crash data was obtained from SCDOT and Town of Hilton Head Island for the most recent three-year period available. The data includes crash data recorded from January 2012 through May 2015. Crash data summary sheets were prepared for the analysis area and are summarized in the following sections. The roadway segments and the intersections within the study area were analyzed. Safety analyses include the total number of crashes, the crash rate, the types of crashes at each location, and a severity summary. Based on recorded crash data, collision diagrams have been developed for the study area intersections and roadway segments. These collision diagrams provide detailed graphical representations of the recorded crashes. The collision diagrams are attached in Appendix C.

Table 3-2 and vpd = vehicles per day

Table 3-3 show the total crashes for the study area roadway segments and intersection locations. Crash rates were then calculated which show the crashes as a proportion of the traffic volume of the roadway segments or total traffic volume entering at that intersection. The following equations were used to determine the crash rates for the roadway segment and intersections.

$$CRsec = C \times 10^8 / (365 \times T \times V \times L)$$

$$CRspot = C \times 10^6 / (365 \times T \times V)$$

Where:

CRsec = Crash Rate for the roadway section per 100 million vehicle miles of travel (100 MVM).

CRspot = Crash Rate for the spot (intersection) per million entering vehicles (MEV)

C = Number of reported crashes

T = Time period of the analysis (years)

V = Annual average daily traffic

L = Length of the segment (miles)

Table 3-2. Roadway Segment Crash Data Summary

Roadway Segments	AADT (vpd)	Segment Length (miles)	Total Crashes	Crash Rate (per 100MVM)
US Route 278	53200	1.04	79	114

vpd = vehicles per day

Table 3-3. Intersection Crash Data Summary

Intersections	Estimated AADT (vpd)	Total Crashes	Crash Rate (per MEV)
Blue Heron Point @ US 278	53,400	26	0.39
Crosstree Drive @ US 278	54,300	28	0.41
Jenkins Road @ US 278	53,600	13	0.19

Notes:
vpd = vehicles per day
MEV = million entering vehicles
The methodology to estimate intersection AADT is shown in Appendix C.

Table 3-4 and Table 3-5 summarize the severity of crashes for the study roadway segment and intersections. For the corridor, there were 19 crashes with injuries (an average rate of around 6 injuries per year). A total of 60 crashes resulted in property damage only (an average rate of around 18 property damage only crashes per year). For the study intersections, there were 16 crashes with injuries (an average rate of around 5 injuries per year). A total of 51 crashes resulted in property damage only (an average rate of around 15 property damage only crashes per year). It should be noted that around 85 percent of the reported crashes have occurred at or near the study intersections.

Table 3-4. Roadway Segment Crash Data by Severity

Roadway Segments		Total Crashes	Fatal	Injury	Property Damage Only
US Route 278	Total	79	0	19	60
	Avg.	*23.7*	*0*	*5.7*	*18*

Table 3-5. Intersection Crash Data by Severity

Intersections		Total Crashes	Fatal	Injury	Property Damage Only
Blue Heron Point @ US 278	Total	26	0	8	18
	Avg.	*7.8*	*0*	*2.4*	*5.4*
Crosstree Drive @ US 278	Total	28	0	8	20
	Avg.	*8.4*	*0*	*2.4*	*6.0*
Jenkins Road @ US 278	Total	13	0	0	13
	Avg.	*3.9*	*0*	*0*	*3.9*
Total	**Total**	**67**	**0**	**16**	**51**
	Avg.	**20.1**	**0**	**4.8**	**15.3**

Table 3-6 and Table 3-7 show a breakdown of each type of crashes by the roadway segment and study intersections. According to the data, the majority of the recorded crashes at or near the study intersections and roadway segment are associated with rear end crashes. A further review of these rear end crashes shows the major contributing factor as driving too fast for conditions. The posted speed limit may be too high for vehicles to properly navigate the roadway. Secondly, there are not adequate acceleration/deceleration lanes and taper lengths to safely merge/diverge the slow moving vehicles to/form through traffic.

The second most type of crashes along the corridor is associated with run-off-the-road types. The contributing factors may include: excessive speed, inadequate shoulder width, and roadside clearance. Several crashes at the study intersections are also associated with angle type of crashes. Due to high through traffic volume, the side road traffic is often forced to make turns in inadequate gap in the traffic stream and, as a result, angle type crashes typically occur. If no improvements are made, these types of accidents would continue to increase, and may even result in a future fatality. With the proposed improvements, consideration should be given so that the side road traffic can make the turns safely without making any unnecessary risks.

Table 3-6. Roadway Segment Crash Data by Types

Roadway Segment		Rear End	Angle	Head On	Side Swipe	Run Off	Other	Total Crashes
US Route 278	Total	40	10	1	4	20	4	79
	%	51%	13%	1%	5%	25%	5%	100%

Table 3-7. Intersection Crash Data by Types

Intersection		Rear End	Angle	Head On	Side Swipe	Run Off	Other	Total Crashes
Blue Heron Point @ US 278	Total	11	3	0	1	10	1	26
	%	42%	12%	0	4%	38%	4%	100%
Crosstree Drive @ US 278	Total	13	7	1	1	5	2	28
	%	46%	25%	4%	4%	18%	3%	100%
Jenkins Road @ US 278	Total	9	1	-	1	1	1	13
	%	68%	8%	0	8%	8%	8%	100%

3.4 Geometry

There are no known horizontal or vertical geometric deficiencies of the US 278 mainline within the Project Study Area per the data available at the time of this report (based on existing plans, aerial imagery and provided GIS contour data). Line of sight deficiencies do exist at the intersections with Blue Heron Point Road, Crosstree Drive and Jenkins Island Road. The sight distance deficiencies at these side roads are due in part to their locations along the sweeping horizontal curve of US 278 and increased by specific median vegetation and signs as well as vegetation adjacent to US 278 overhanging the roadway. Increased travel speeds and volume (since the original construction of the existing alignment of US 278) has increased the needed sight distance for turning vehicles along this corridor.

4 Alternatives

Based on gathered information (traffic data, crash data, previously performed traffic studies, feedback from stakeholders and County staff), alternatives were evaluated to mitigate the existing operational deficiencies of the transportation facilities. Alternatives include: (1) complete closure of existing median cross-overs in conjunction with new frontage roads/connectors, (2) complete closure of existing median cross-overs in conjunction with connector roads and grade separation structures over/under US Route 278, (3) modification to existing median cross-overs in conjunction with median U-turns, and (4) modification to the existing access points and median cross-overs on US 278 to combine into access point(s) with directional movements.

4.1 No-Build Alternative

The no-build alternative, which consists of no improvements to the side roads, was considered a baseline for comparison. Under opening year (2020) no-build condition, it was assumed two through lanes in each direction of US Route 278. Under design year (2035) no-build condition, it was assumed that US Route 278 would be widened to provide an additional through lane in each direction. However, the study intersections would remain the same.

4.2 Alternative Considered But Eliminated From Further Review

A number of alternatives were initially considered to mitigate the existing operational deficiencies. The following presents the alternatives which were considered but eliminated from further review:

- **Relocating the existing Crosstree Drive across from Jenkins Island Road with a possible signal installation**. This alternative was eliminated due to the fact that the proposed intersections would not meet any signal warrant (Section 4.4). Without the signal, the side road traffic would experience the same operational and safety deficiencies as existing.
- **Grade separation structure over/under US 278 and connector road.** This alternative would involve construction of a grade separation structure over/under US 278, construction of connector roads along the north and south sides of US 278. This alternative was eliminated due to significant impact to residential properties and significant construction costs associated with grade separation structures.

4.3 Proposed Alternatives

After thorough analyses/investigation of a number of alternatives, the following were found to provide safe and efficient access to local communities with minimal disruption to through traffic on US 278. The following provides a brief description of each of the alternatives.

4.3.1 Alternative 1: Right-in Right-out with Frontage Road

All existing median cross-overs on US 278 would be closed and existing access points (Blue Heron Point Road, Gateway Drive, Crosstree Drive, and Jenkins Island Road) would be reconstructed to allow only for right-in and right-out movements. A new frontage/access road would be constructed along the north side of US 278 connecting Blue Heron Point Road to the west and Jenkins Island Road to the east. The existing Blue Heron Point Road would be reconstructed / improved to accommodate heavy vehicular traffic. Adequate acceleration and deceleration lanes would be provided at each access point to accommodate safety for merging / diverging to/from the through traffic. This alternative would also require enhancement of the Windmill Harbour maintenance entrance from Blue Heron Point Road. With the construction of the new frontage road and enhancement to the existing access points, full access to all the communities can be maintained without requiring any left-turn maneuvers onto / from US 278. This alternative would remove the major conflicting traffic maneuvers from the access points, hence improving safety and mobility along the corridor. Figure 4-1 and Figure 4-2 illustrate the proposed alternative. The opening year (2020) and design year (2035) projected traffic volumes associated with Alternative 1 are illustrated in Appendix B (Figure B-4 and Figure B-5).

4.3.2 Alternative 2: Modified Super Street

Under this scenario, the existing three median cross-overs would be reconstructed to allow for left-turns into the communities from US 278 while providing better refuge and sight distance for turning vehicles. The existing access points (Blue Heron Point Road, Gateway Drive, Crosstree Drive, and Jenkins Island Road) would be reconstructed which would allow the traffic from the communities to only make right-turns onto US 278. Two new median openings would be constructed between Crosstree Drive/Gateway Drive and Jenkins Road with adequate storage length and U-turn facilities on US 278. Adequate acceleration lanes would also be provided at all access points. The existing left-turn traffic from Blue Heron Point Road and Crosstree Drive would make right-turns on US 278 and then make a U-turn in the new median cross-over to travel westward on US 278. Similarly, the existing left-turn traffic from Jenkins Island Road would make right-turns on US 278 and then make a U-turn on the new median cross-over to travel eastward on US 278. This alternative is illustrated in Figure 4-3 and Figure 4-4.

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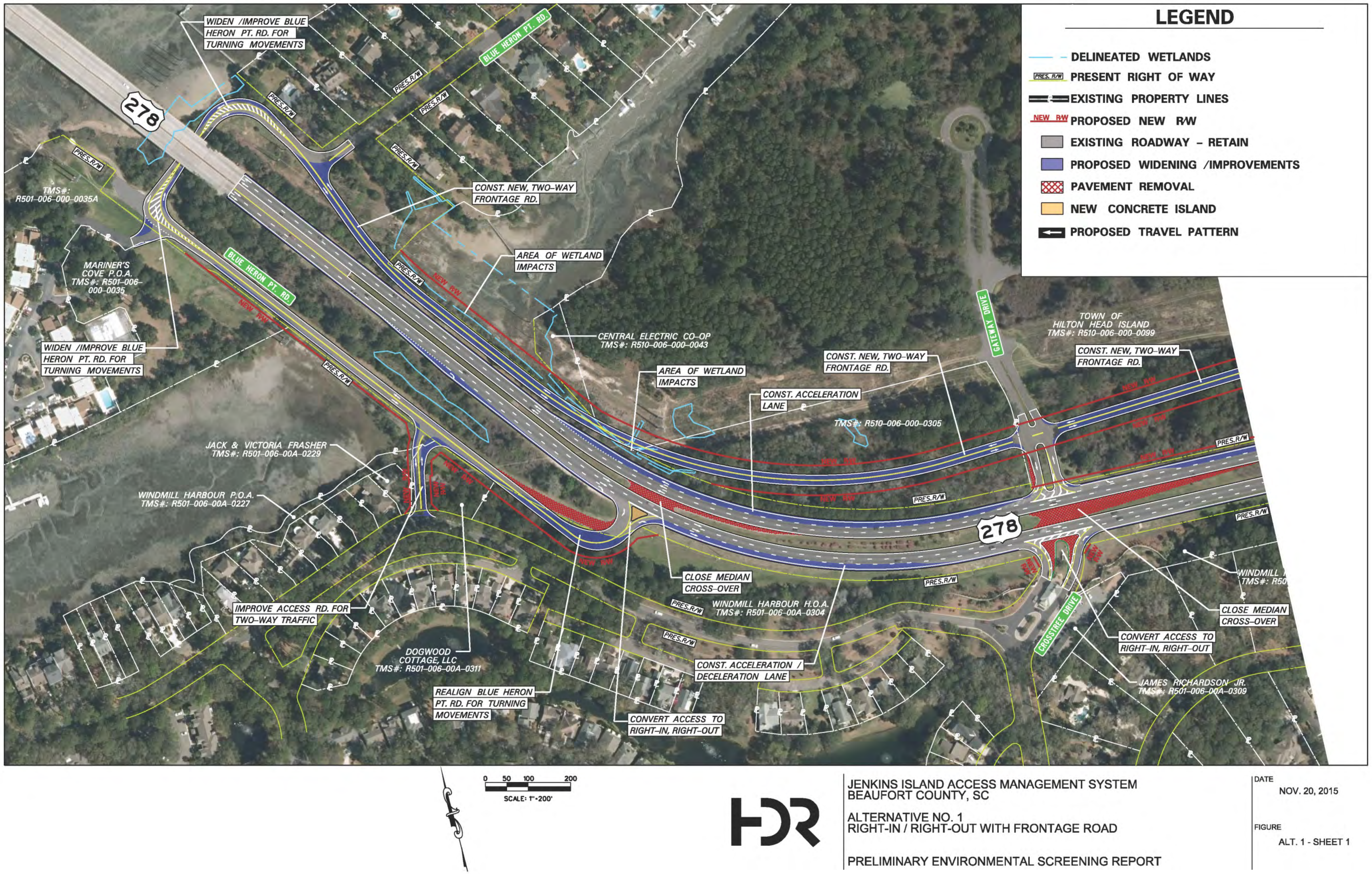

Figure 4-1. Alternative 1 (Sheet 1 of 2)

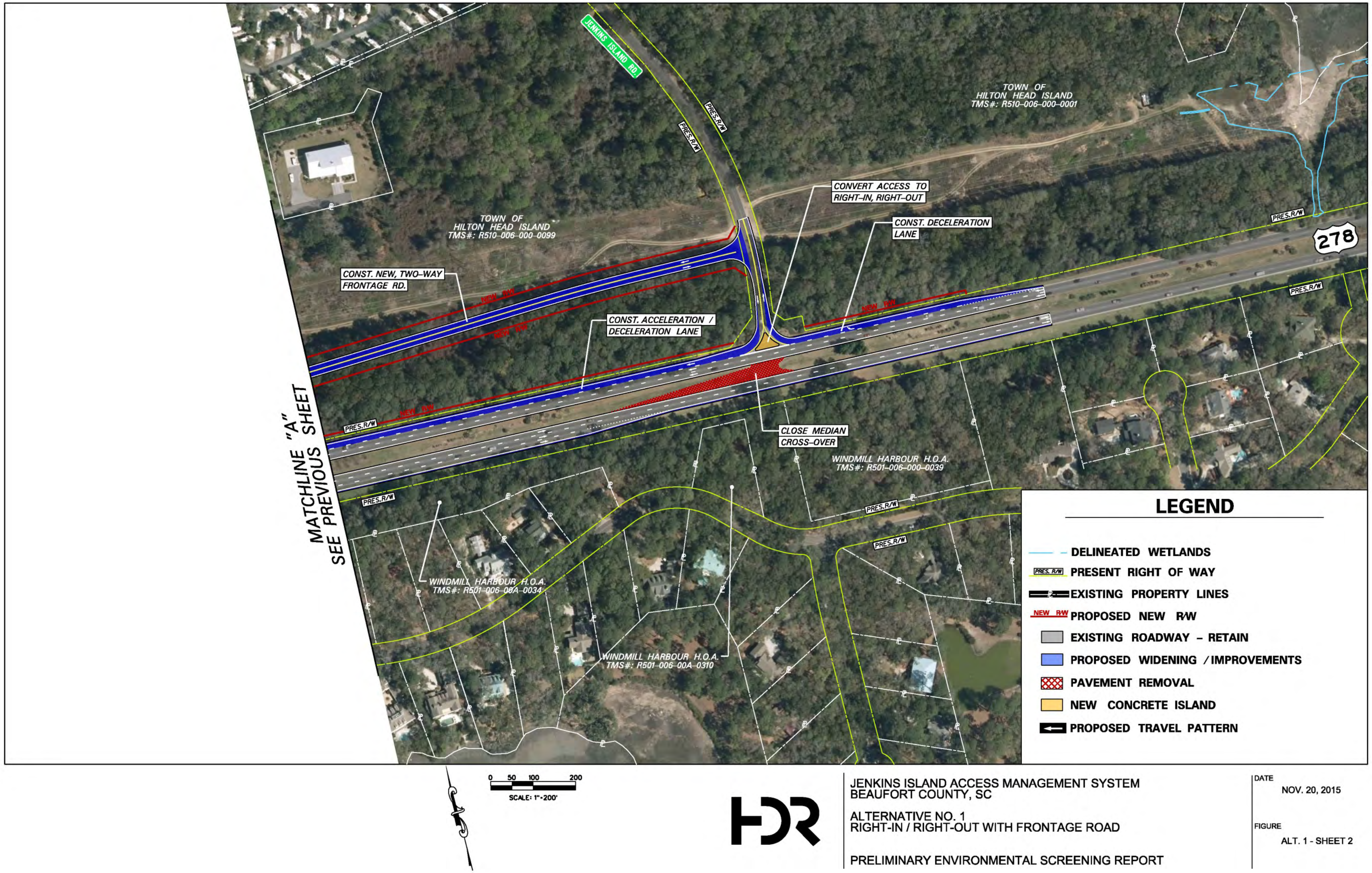

Figure 4-2. Alternative 1 (Sheet 2 of 2)

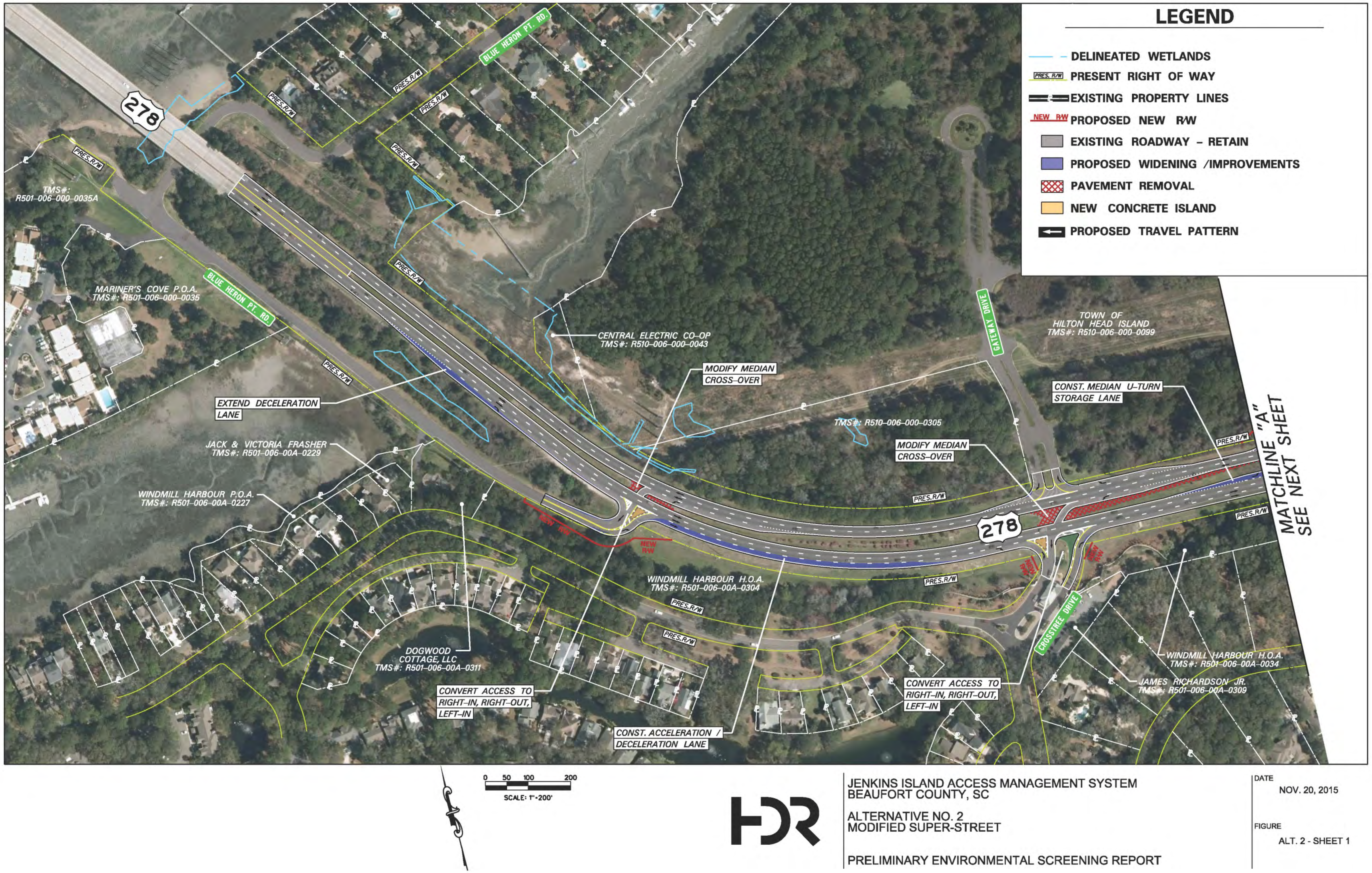

Figure 4-3. Alternative 2 (Sheet 1 of 2)

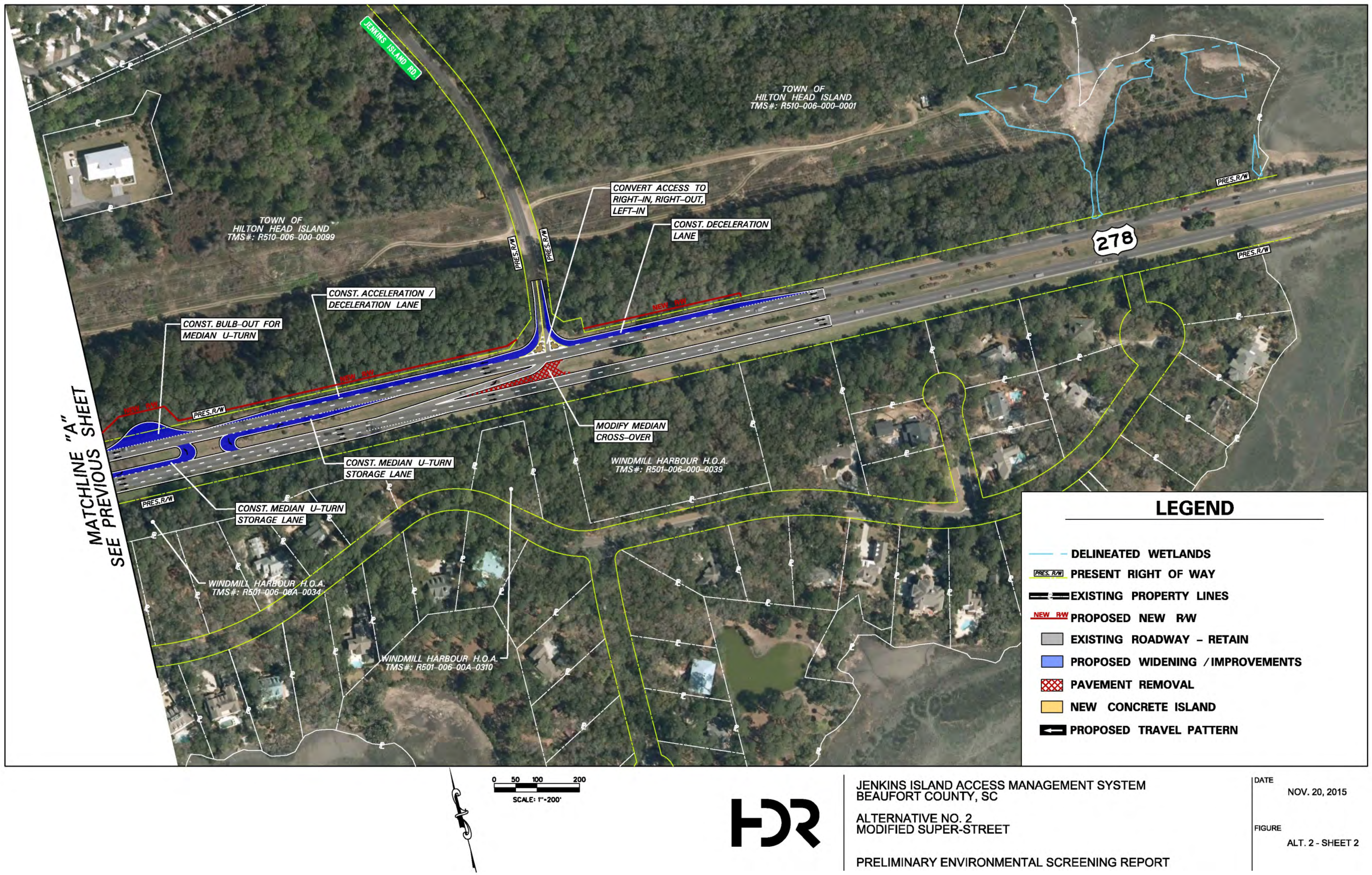

Figure 4-4. Alternative 2 (Sheet 2 of 2)

4.3.3 Recommended Alternative: Modified Super Street with Signals (Alternative 2A)

Based on comments received during the public information meeting, Alternative 2 was modified (becoming Alternative 2A) to include two signals and additional design enhancements to improve the operation of the proposed U-turns. The existing median cross-over at Blue Heron Point would be reconstructed to allow for left-turns into Blue Heron Point and U-turns onto US 278. A new signal with two-phase operation would be installed at this location. The remaining cross-overs at Crosstree Drive and Jenkins Island Road would be reconstructed, allowing traffic from the communities to make only right-turns on US 278. The new median opening was moved to the east of Jenkins Island Road in order to provide adequate left turn / U-turn storage and additional distance for weaving / merging from the Crosstree Drive access point. A new signal with two-phase operation would be constructed at this location as well. The existing left-turn traffic from Blue Heron Point Road and Crosstree Drive would make right-turns on US 278 and then make U-turns at the new median cross-over to travel westward on US 278. The existing left-turn traffic entering into Jenkins Road would also make U-turns at the new median cross-over and then turn right onto Jenkins Road. The existing left-turn traffic from Jenkins Road would make right-turns on US 278 and then make U-turns at Blue Heron Point to travel eastward on US 278. The existing left-turn traffic entering into Crosstree Drive would also make U-turns at the Blue Heron Point cross-over and then turn right onto Crosstree Drive. A third through lane would be introduced in both directions in advance of these intersections. The additional lanes eastbound / westbound on US 278 are proposed to span the limits of the project corridor; from the termini of the J. Wilton Graves Bridge to the causeway onto Hilton Head Island. Additionally, a dedicated right turn lane would be provided between Blue Heron Point Road and Crosstree Drive for storage capacity of right turns into Windmill Harbour, specifically to reduce any potential queues along US 278 from the Crosstree Drive guardhouse situated close to the intersection. Figure 4-5 and Figure 4-6 illustrate the alternative. The opening year (2020) and design year (2035) projected traffic volumes associated with Alternative 2A are illustrated in Appendix B (Figure B-6 and Figure B-7).

4.4 Signal Warrant Analysis

The installation of a traffic signal should improve the overall safety and operation of the intersections and should not seriously disrupt progressive traffic flow. A thorough analysis that considers traffic conditions, pedestrian characteristics, crash history, and physical characteristics of the location such as sight distances and speed limits, and good engineering judgment must all be considered before the installation of a traffic signal is proposed.

A signal warrant study was performed for the following three scenarios:

- *Scenario 1: No-Build* – Under this scenario, all side roads, Blue Heron Point Road, Crosstree Drive, and Jenkins Island Road, are evaluated for their existing configuration.

- *Scenario 2: Relocation* – Under this scenario, Crosstree Drive would be considered to be relocated across from Jenkins Island Road and evaluated for signal installation (see Section 4.2).
- *Scenario 3: Alternative 2 Modified Superstreet* – This scenario is described in Section 4.3.2.

The procedures used in conducting the traffic signal warrant study are consistent with the guidelines set forth in the *Manual on Uniform Traffic Control Devices* (MUTCD), *2009 Edition* published by Federal Highway Administration (FHWA). The MUTCD identifies nine warrants to be considered as justifying criteria necessary to be met before the installation of a traffic signal is considered.

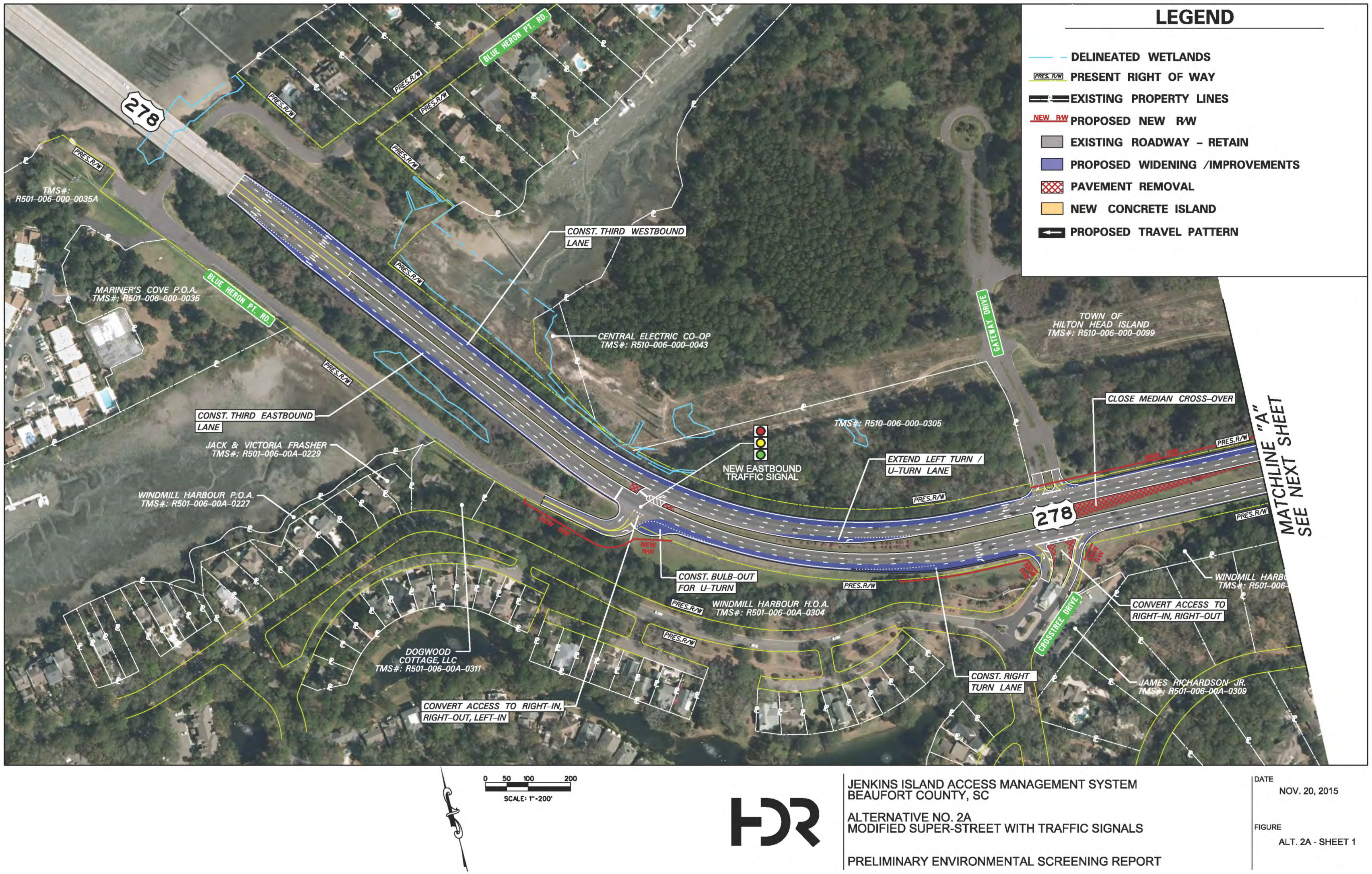

Figure 4-5. Alternative 2A (Sheet 1 and 2)

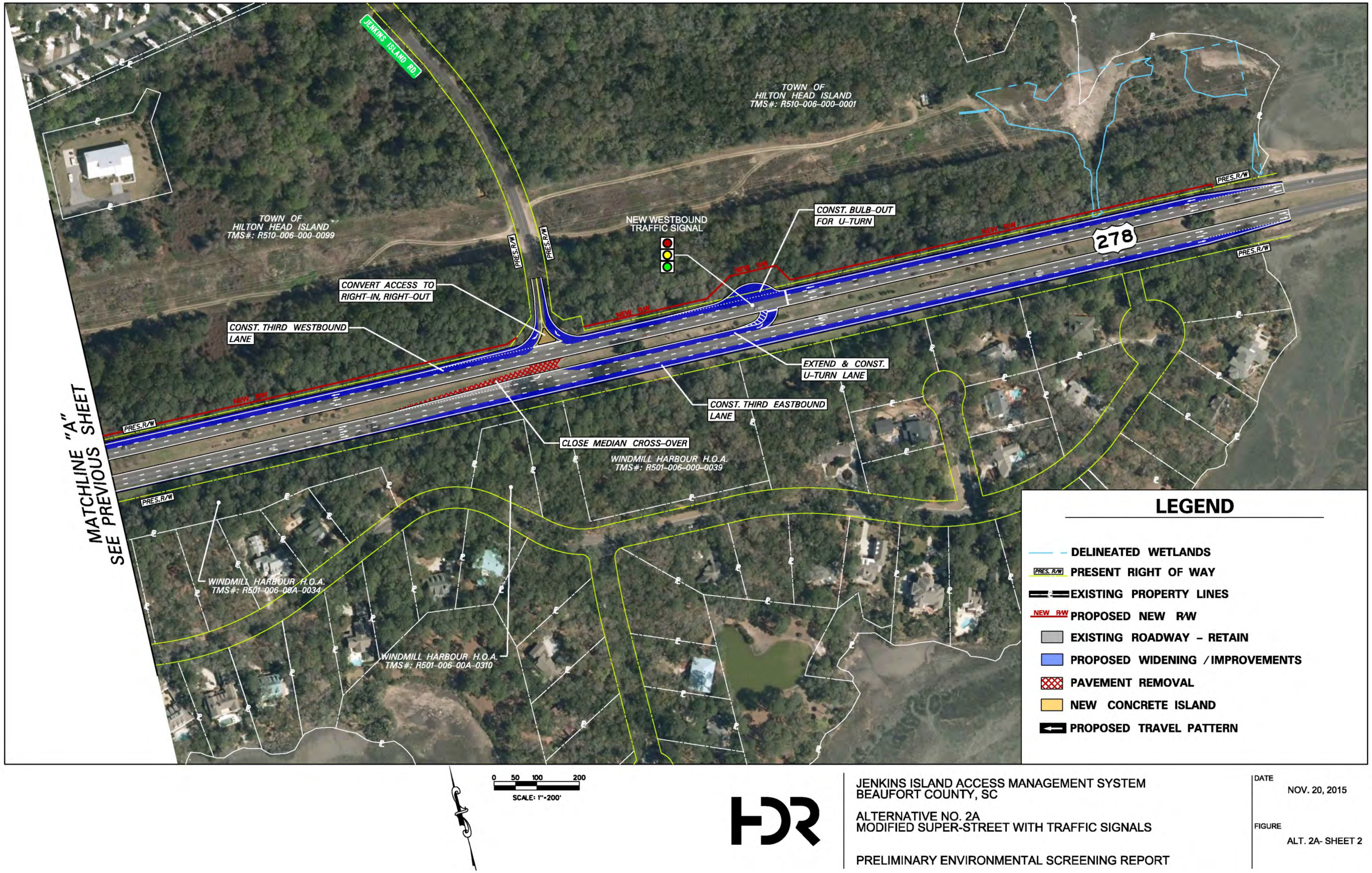

Figure 4-6. Alternative 2A (Sheet 2 and 2)

These warrants are:

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

4.4.1 Warrant 1: Eight Hour Vehicular Volume

Warrant 1 is intended for the application at locations where a large volume of intersecting traffic is the principal reason to consider installing a traffic signal or where the traffic volume on a major street is so heavy that traffic on a minor street suffers excessive delay or conflict in entering or crossing the major street. If either Condition A or B is satisfied, then the criteria for Warrant 1 is satisfied.

To meet the requirements for Warrant 1A (Minimum Vehicular Volume), the total number of vehicles per hour on the major street and the higher volume minor street approaches should meet the required minimum volumes. At least 8 hour volumes of the major street and minor street should meet the minimum volume threshold to satisfy this warrant. Warrant 1A is not satisfied for Scenario 1, Scenario 2, or Scenario 3.

To meet the requirements for Warrant 1B (Interruption of Continuous Traffic), the total number of vehicles per hour on the major street and the higher-volume minor street approach should meet the required minimum volume. At least 8 hour volumes of the major street and minor street should meet the minimum volume threshold to satisfy this warrant.

- Scenario 1 - Warrant 1B not satisfied.
- Scenario 2 - Warrant 1B not satisfied.
- Scenario 3 - Warrant 1B is satisfied for the proposed Blue Heron Point Rd. intersection and shows very close proximity (3 hours over 100%, 3 hours over 90% and 3 hours over 75% warrant threshold value) for the new median U-turn intersection.

Tables showing the results of Warrant 1 analysis for the three scenarios are attached in Appendix D.

4.4.2 Warrant 2: Four Hour Vehicular Volume

Warrant 2 is intended for the application at locations where the volume of intersecting traffic is the principal reason to consider installing a traffic signal. To meet the requirements for Warrant 2, the total number of vehicles per hour on the major street and the higher volume minor street approaches should meet the required minimum volumes. At least 4 hour volumes of the major street and minor street should meet the minimum volume threshold to satisfy this warrant.

- Scenario 1 - Warrant 2 not satisfied.
- Scenario 2 - Warrant 2 not satisfied.
- Scenario 3 - Warrant 2 is satisfied for proposed Blue Heron Point Rd. intersection and shows close proximity (3 hours over 90% and 1 hour over 80% warrant threshold value) for the new median U-turn intersection.

Tables showing the results of Warrant 1 analysis for the three scenarios are attached in Appendix D.

4.4.3 Warrant 3: Peak Hour Vehicular Volume

Warrant 3 is intended to be applied where traffic conditions are such that for a minimum of 1 hour of an average day, the minor street traffic suffers undue delay when entering the major street. Warrant 3 has two conditions. If either Condition A or B is satisfied, then the criteria for Warrant 3 is satisfied.

To meet the requirements for Warrant 3A, all of the following three conditions must be met for the same one hour of the day:

- The total stopped delay experienced by the traffic on the minor-street approach exceeds 5 vehicle-hours for a two lane approach.
- The volume of the minor street approach exceeds 100 vehicles per hour for one moving lane of traffic.
- The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour.

To meet the requirement for Warrant 3B, the total number of vehicles per hour on the major street and the higher volume minor street approaches should meet the required minimum volumes.

- Scenario 1 - Warrant 3 not satisfied.
- Scenario 2 - Warrant 3 not satisfied.
- Scenario 3 - Warrant 3 is satisfied for the proposed Blue Heron Point Rd. intersection and shows close proximity (over 75% threshold value) for the new median U-turn intersection.

Tables showing the results of Warrant 1 analysis for the three scenarios are attached in Appendix D.

4.4.4 Warrant 4: Pedestrian Volume – *Not Applicable*

Warrant 4 is intended for application where the traffic volume on a major street is so heavy that pedestrians experience excessive delay in crossing the major street. To meet Signal Warrant 4, the pedestrian volume crossing the major street at an intersection or midblock location during an average day should be 75 or more for each of any 4 hours or 93 or more during any 1 hour of an average day. This warrant is not applicable.

4.4.5 Warrant 5: School Crossing – *Not Applicable*

Warrant 5 is intended for application where the fact that school children cross the major street is the principal reason to consider installing a traffic signal. This warrant is not applicable. There is no existing school crossing at these intersections.

4.4.6 Warrant 6: Coordinated Signal System – *Not Applicable*

Warrant 6 is applicable in situations where a coordinated signal system sometimes necessitates the installation of a traffic signal to maintain proper platooning of vehicles. The adjacent signalized intersections located more than a mile to the east and west of the study intersections. Thus, a signal can not be justified solely based on the criteria.

4.4.7 Warrant 7: Crash Experience

When there is a history of crashes at an intersection, the Crash Experience Warrant (Warrant 7) can be used to justify the consideration of a traffic signal installation. The following criterion should be considered in the application of this warrant.

Prior to the installation of a traffic signal based on accident history, less restrictive measures must be attempted and enforced. If other measures to reduce accident frequency fail, then a traffic signal installation may be considered. The Crash Experience signal warrant applies to intersections where five or more reported accidents have occurred within a twelve month period that can be avoided by a traffic signal and where vehicular volume or pedestrian traffic is greater than 80 percent of the requirements specified by the Eight-Hour Vehicular Volume warrant or Pedestrian Volume warrant.

The MUTCD states that there must be a history of crashes at the subject intersection amounting to at least 5 reported crashes within the past year resulting in personal injury or property damage above the reporting thresholds. The types of these crashes must also be such that they are correctable by the installation of a traffic signal. An adequate trial of alternatives must also have been attempted, along with increased enforcement. In addition to meeting these criteria, a certain amount of vehicular and pedestrian volumes must be present for 8 hours of the day.

During the last three and half year period, 26 crashes were reported at the existing Blue Heron Point Road cross-over, 28 crashes were reported at Crosstree Drive, and 13 crashes were reported at Jenkins Island Road. The detailed information is provided under Section 3.3. During the last three and half year period, three crashes were related to the left-turning traffic to/from Blue Heron Point Road, seven crashes were related to the left-turning traffic to/from Crosstree Drive, and one crash was related to the left-turning traffic exiting to/from Jenkins Island Road. None of the study intersections have at least 5 reported crashes within a single year period which can be correctable by a signal installation. Thus, the minimum criterion for Warrant 7 is not met.

4.4.8 Warrant 8: Roadway Network – *Not Applicable*

Warrant 8 is intended to be applied to the intersection of two or more major routes. The side street does not exhibit any of the characteristics of a major route. This warrant is not applicable.

4.4.9 Warrant 9: Intersection near a Grade Crossing – *Not Applicable*

Warrant 9 is not applicable for the study intersection since there is no grade crossing near the intersections.

All the vehicular volume warrants: Eight Hour Vehicular Volume Warrant, Four Hour Vehicular Volume Warrant, and Peak Hour Vehicular Volume Warrant are met for the proposed Blue Heron Point intersection and show very close proximity to meet the threshold values for the proposed median U-turn intersection (east of Jenkins Road). Based on the results of the signal warrant analysis, traffic signal is recommended at these two proposed intersections. It should be noted that both signals can be installed with two-phase operation and would not seriously disrupt the progressive traffic flow along US 278.

The traffic signal warrant analysis conducted for the proposed scenarios provides credence to the direct feasibility of the Modified Super-Street / Median U-turn (Alternative 2 / 2A) option. The SCDOT shall require evidence of passing signal warrant studies for the application of new traffic signals prior to their approval and permit for installation. Public input highly recommended the installation of a traffic signal at Crosstree Drive; for this study, a traffic signal was proposed for the relocated intersection of Crosstree Drive at Jenkins Island Road in order to attempt to justify increased side road volumes by combining the volumes from Crosstree Drive and Jenkins Island Road at a single intersection. The results of this analysis shows that even with combined side road volumes, the required minimum volumes to satisfy the warrants were not met.

4.5 Operational Analysis

Operational analyses of the proposed Alternative 1 and Alternative 2A were performed for the opening year (2020) and design year (2035) traffic volumes. The results of the operational analysis are included in Appendix E.

Table 4-1 shows the results of the capacity analyses for Alternative 1. Under future build conditions, all three intersections would operate at satisfactory LOS A with free-flow right-turn movement.

Table 4-1. Intersection LOS Summary – Build Condition – Alternative 1

Intersection	Control	Movement	Condition	AM Peak			PM Peak			Weekend		
				LOS	Delay (Sec)	v/c	LOS	Delay (Sec)	v/c	LOS	Delay (Sec)	v/c
Blue Heron Point Road @ US 278	Free	NBR	2020	A	0.5	0.02	A	0.4	0.02	A	0.6	0.02
			2035	A	0.4	0.02	A	0.4	0.02	A	0.5	0.02
Crosstree Drive @ US 278	Free	NBR	2020	A	0.8	0.03	A	0.9	0.03	A	0.7	0.01
			2035	A	0.7	0.03	A	0.8	0.03	A	0.7	0.01
Jenkins Road @ US 278	Free	SBR	2020	A	1.0	0.01	A	0.8	0.02	A	0.6	0.01
			2035	A	0.8	0.01	A	0.8	0.02	A	0.8	0.01

Table 4-1 Notes:

Control refers to the movement of the vehicle at the turn. For example, a vehicle traveling northbound on Blue Heron Point Road would not be required to stop before merging onto US 278.

Movement refers to vehicle direction and turning movement. For example, NBR indicates a vehicle traveling northbound on Blue Heron Point Road and turning right onto US 278.

Due to free flow conditions, delay were estimated from SimTraffic simulation and v/c were estimated from saturation flow rate.

In Alternative 1, auxiliary lanes were considered between Blue Heron Point Road and Crosstree Drive in the eastbound direction and between Jenkins Island Road and Gateway Drive in the westbound direction. Both of these auxiliary lanes introduce weaving conditions between these intersections. Weaving analyses were performed to evaluate the operating conditions between these intersections. The results of the analyses are shown in Table 4-2. Based on the analyses, both the weaving sections are expected to operate at satisfactory LOS B or better during both opening (2020) and design year (2035) traffic volume conditions.

Table 4-2. Weave Segment Analysis – Build Condition – Alternative 1

Weave Section	Direction	Condition	AM Peak		PM Peak		Weekend	
			LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)
US 278 between Blue Heron Point Road & Crosstree Drive	EB	2020	B	22.0	B	13.3	B	18.0
		2035	B	16.9	A	10.3	B	13.9
US 278 between Jenkins Island Road & Gateway Drive	WB	2020	A	9.7	B	22.7	B	14.1
		2035	A	7.6	B	17.4	A	10.9

Table 4-3 shows the results of the capacity analyses for Alternative 2A. Based on the results of the capacity analysis, both the proposed signalized intersections are expected to operate at satisfactory LOS B or better during 2020 opening and 2035 design year traffic volumes.

Table 4-3. Intersection LOS Summary – Build Condition – Alternative 2A

Intersection	Control	Movement	Condition	AM Peak			PM Peak			Weekend		
				LOS	Delay (Sec)	v/c	LOS	Delay (Sec)	v/c	LOS	Delay (Sec)	v/c
Blue Heron Point Road @ US 278	Signal	Overall	2020	A	5.2	0.71	A	6.9	0.56	A	5.6	0.65
			2035	A	5.4	0.74	A	7.1	0.58	A	5.7	0.67
Crosstree Drive @ US 278	Stop	NBR	2020	D	34.9	0.35	A	9.8	0.10	B	10.1	0.07
			2035	E	41.1	0.41	A	9.9	0.10	B	10.3	0.07
Jenkins Road @ US 278	Stop	SBR	2020	A	9.9	0.03	D	29.5	0.19	B	10.5	0.03
			2035	B	10.0	0.03	D	32.1	0.22	B	10.6	0.04
Median U-Turn east of Jenkins Road	Signal	Overall	2020	B	12.8	0.39	A	8.4	0.72	B	10.6	0.53
			2035	B	12.8	0.40	A	8.9	0.75	B	10.8	0.55

Notes:

Control refers to the movement of the vehicle at the turn. For example, a vehicle traveling northbound on Blue Heron Point Road would be required to stop at a signal before merging onto US 278.

Movement refers to vehicle direction and turning movement. For example, NBR indicates a vehicle traveling northbound on Blue Heron Point Road and turning right onto US 278.

Due to free flow conditions, delay were estimated from SimTraffic simulation and v/c were estimated from saturation flow rate.

SIMTRAFFIC from Synchro 8 software was also used to analyze the travel time and travel speed within the study corridor. The analysis was performed using the 2020 opening year and 2035 design year traffic volumes considering both no-build and build conditions. For both 2035 no-build and 2035 build condition, it was assumed that US 278 would be widened to provide an additional through lane in each direction. The results of the analysis are shown in Table 4-4.

Table 4-4. Arterial Travel Time and Speed Analysis

Movement	Condition	Travel Time (sec)			Travel Speed (mph)		
		AM	PM	Weekend Peak	AM	PM	Weekend Peak
US 278 Eastbound	2020 No-Build Condition	87.3	64.4	70.4	35	46	42
	2020 Build Condition-Alternative 1	*84.7*	*63.3*	*68.0*	*35*	*47*	*44*
	2020 Build Condition-Alternative 2A	*100.0*	*80.6*	*87.6*	*33*	*41*	*38*
	2035 No-Build Condition	65.9	62.3	63.0	45	47	47
	2035 Build Condition- Alternative 1	*64.7*	*61.8*	*63.5*	*46*	*48*	*47*
	2035 Build Condition- Alternative 2A	*78.5*	*75.2*	*76.6*	*42*	*44*	*43*
US 278 Westbound	2020 No-Build Condition	80.7	115.8	85.8	43	30	35
	2020 Build Condition – Alternative 1	*75.3*	*97.4*	*78.8*	*44*	*35*	*42*
	2020 Build Condition – Alternative 2A	*75.8*	*123.6*	*78.9*	*38*	*23*	*37*
	2035 No-Build Condition	74.3	79.4	69.9	45	42	43
	2035 Build Condition – Alternative 1	*68.4*	*72.3*	*74.7*	*49*	*46*	*45*
	2035 Build Condition – Alternative 2A	*73.0*	*78.8*	*71.7*	*40*	*37*	*40*

Table 4-4 shows an improvement on the facility travel time and speeds for the build conditions for Alternative 1. This alternative would eliminate the conflicting left-turning movements from the traffic stream and hence improve the overall traffic operations on US 278. Due to the addition of traffic signals in both the eastbound and westbound directions on US 278, Alternative 2A would have some impact on the travel time and speed for the build conditions. However, both signals would function under two-phase operation and would allocate the majority of green time to the through traffic on US 278. Thus, the proposed traffic signals of Alternative 2A are not expected to have significant adverse impact on the through traffic on US 278.

5 Preliminary Impact Analysis

The following section describes the environmental resources that currently exist in the Study Area. Environmental resources were assessed based on available data, GIS mapping, and a delineation of wetlands and waters within the Project Study Area. This section also provides a preliminary analysis of impacts associated with each Build Alternative. The environmental resources would be evaluated in greater detail and impacts would be refined during future NEPA evaluations for the project. Table 5-1 presents a matrix summarizes the preliminary impacts for each environmental resource.

Table 5-1. Preliminary Impact Analysis Matrix

Resource	Alternative 1 (Right Turn Only with Frontage Road)	Alternative 2A (Modified Super Street with Signal)
Water Resources		
Surface Waters	No Direct Impact; Indirect impacts minimized through BMPs	No Direct Impact; Indirect impacts minimized through BMPs
Wetlands	Approximately 0.3 Acres (0.2 acres of tidal salt marsh and 0.1 acres of freshwater wetlands)	No Impact
Permitting	SCDOT General Permit or NWP #14 NOI for South Carolina NPDES Construction General Permit SCR160000	NOI for South Carolina NPDES Construction General Permit SCR160000
Essential Fish Habitat	0.2 Acres of estuarine wetlands; EFH Assessment required	No Impact
Threatened and Endangered Species	Habitat survey and Biological Assessment needed; Project is not expected to impact protected species	Habitat survey and Biological Assessment needed; Project is not expected to impact protected species
Floodplains	Would likely require coordination with local floodplain administrator	No Impact
Land Use	Potential affect to parks and recreation land use on Town of Hilton Head Island Property	No Impact
Farmlands	No loss of Prime Farmlands	No loss of Prime Farmlands
Cultural Resources	No Impact; Cultural Resource Survey would likely be required.	No Impact; Cultural Resource Survey likely not required.
Section 4(f)	3.1 Acres of ROW Acquisition on Town of Hilton Head Island park property; Would require Section 4(f) evaluation	0.8 Acre of ROW Acquisition on Town of Hilton Head Island park property; Would require Section 4(f) evaluation
Noise	Would require noise analysis	Would not require noise analysis
Air Quality	Low Potential MSAT Effects; Expected to remain in attainment and conformity	Low Potential MSAT Effects; Expected to remain in attainment and conformity
Hazardous Materials	No Impacts	No Impact
Displacements & ROW Acquisition	1.7 Acres of ROW Acquisition No Displacements	0.0 Acres of ROW Acquisition No Displacements

Resource	Alternative 1 (Right Turn Only with Frontage Road)	Alternative 2A (Modified Super Street with Signal)
Environmental Justice	No Impact	No Impact

5.1 Water Resources

5.1.1 Surface Waters

The Study Area is located in the Lower Savannah River subbasin or USGS Hydrologic Unit Code (HUC) No. 03060110. The subwatershed designation is HUC 03060110-03 for the Calibogue Sound (Figure 5-1). The closest USGS named surface waters include MacKay Creek, Skull Creek, and Jarvis Creek. There are no Federal or state wild or scenic rivers within or in close proximity to the Study Area.

Classified Waters and Water Quality Monitoring Stations

The waterways near the Study Area are classified as class "SFH" or Shellfish Harvesting waters, by the South Carolina Department of Health and Environment Control (SCDHEC). SCDHEC defines SFH class waters as “tidal saltwaters protected for shellfish harvesting. Suitable for primary and secondary contact recreation, crabbing, and fishing. Also suitable for the survival and propagation of a balanced indigenous aquatic community of marine fauna and flora.” (SCDHEC, 2012a).

Section 303(d) of the Clean Water Act requires that states develop a list of waters not meeting water quality standards or which have impaired uses. SCDHEC must prioritize these water bodies and prepare a management strategy or total maximum daily load (TMDL). SCDHEC monitors for fecal coliform in the shellfish harvesting waters near the Study Area (Figure 5-2). According to the State of South Carolina Integrated Report for 2014, Part I: Section 303(d) List of Impaired Waters (SCDHEC, 2014), no shellfish monitoring stations are listed for impairments in Skull Creek or Jarvis Creek near the Study Area. The Study Area is not located within a TMDL watershed.

NPDES Permits

The National Pollutant Discharge Elimination System (NPDES) Permit Program was created by Section 402 of the 1972 Federal Clean Water Act. SCDHEC Bureau of Water administers the NPDES Permit Program in SC. Typical regulated point source discharges are:

- Discharges from wastewater treatment systems owned by municipalities, industries, private utilities, State and Federal government, etc.;
- Discharges such as cooling water, boiler blow down, etc.;
- Stormwater discharges from municipal separate storm sewer systems (MS4s);
- Stormwater discharges associated with industrial activity; and
- Stormwater dischargers from Construction Sites.

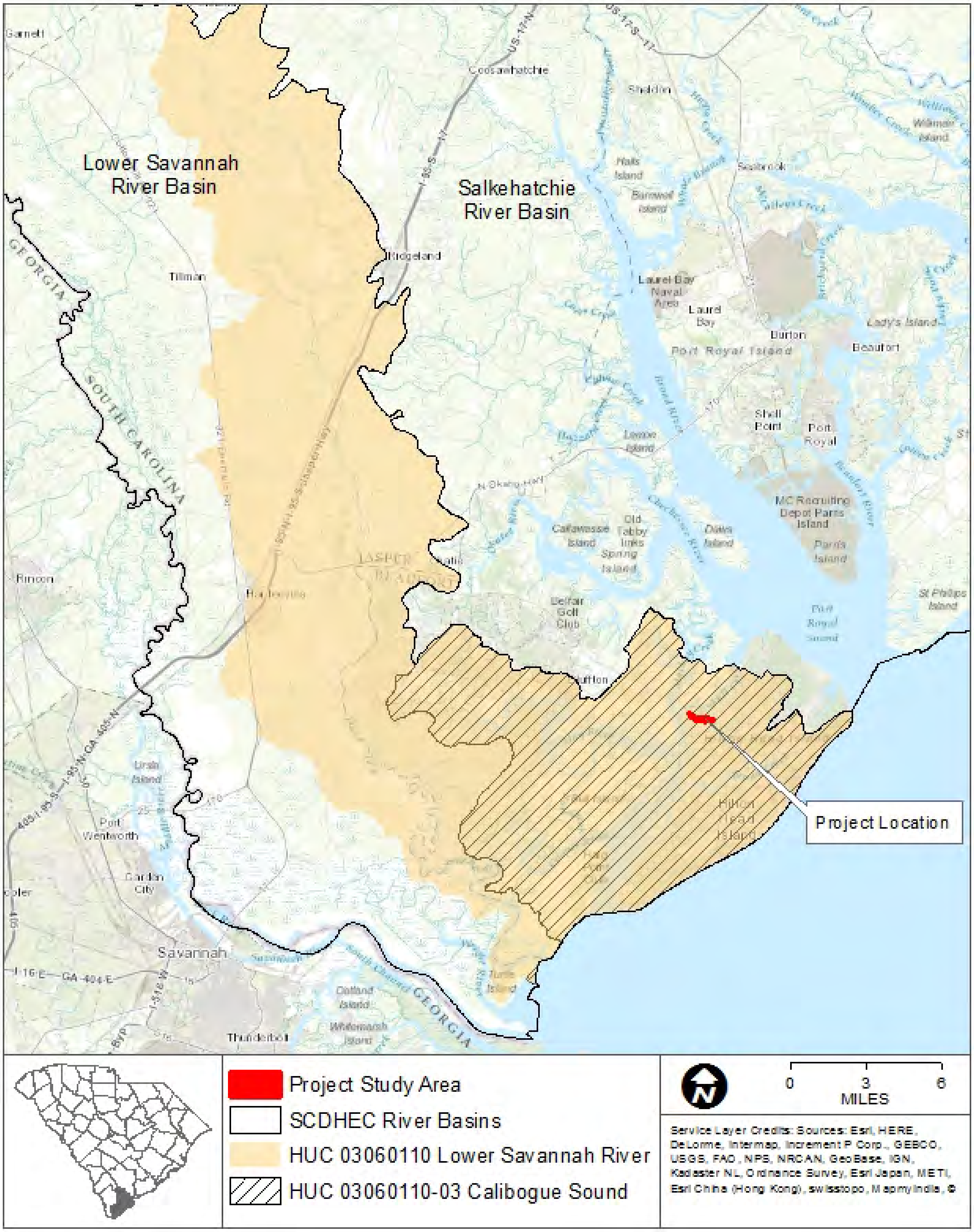

Figure 5-1. Lower Savannah River Basin and Associated Watersheds
Source: USGS

Figure 5-2. SCDHEC Shellfish Monitoring Stations and NPDES Permitted Facilities

Source: SCDHEC

According to the SCDHEC's GIS, no NPDES Permitted facilities are located within the Project Study Area. Two NPDES permitted facilities operated by Town of Hilton Head Island are located north of the Study Area (Figure 5-2).

The proposed project would not result in direct impacts to surface waters. During construction, appropriate sediment and erosion control structures would be employed to minimize impacts to water quality in adjacent waters. Alternative 1 and Alternative 2A would require a Notice of Intent for coverage under South Carolina NPDES Construction General Permit SCR160000. The application would require a Stormwater Pollution Prevent Plan (SWPPP), including Stormwater Management and Sediment Control Plan.

5.1.2 Wetlands

The US Army Corps of Engineers (USACE) and the Environmental Protection Agency (EPA) define wetlands as: "Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." (Environmental Laboratory, 1987). The USACE uses three parameters to identify jurisdictional wetlands. These parameters are as follows: 1) Hydrophytic Vegetation, 2) Wetland Hydrology, and 3) Hydric Soils. Except in certain atypical situations, all three parameters must be present in order for an area to be determined to be a jurisdictional wetland.

Tidal waters within the Project Study Area are also regulated as "Critical Area" by the South Carolina Department of Health and Environmental Control (SCDHEC) Office of Ocean and Coastal Resource Management (OCRM).

On June 5 and 18, 2015, the Project Study Area was reviewed for jurisdictional waters of the U.S. under Section 404 of the Clean Water Act. The Project Study Area was examined according to the methodology described in the USACE 1987 Wetland Delineation Manual, USACE Post-Rapanos guidance, and the USACE Atlantic and Gulf Coastal Plain Regional Supplement. Table 5-2 and Figure 5-3 provide a summary of the delineated features.

Table 5-2. Summary of On-Site Jurisdictional Waters of the U.S.

Site Number or Name	Acres (Approximate)	Latitude	Longitude	Class of Aquatic Resource
Wetland A	1.4	32.22056	-80.7776	Tidal OCRM Critical Area
Wetland B	0.1	32.21972	-80.7769	Freshwater
Wetland C	0.3	32.2221	-80.7795	Tidal OCRM Critical Area
Wetland D	Outside Project Area	32.22039	-80.7786	Tidal OCRM Critical Area
Wetland E	0.2	32.21967	-80.7776	Tidal OCRM Critical Area
Wetland F	1.3	32.21931	-80.7636	Tidal OCRM Critical Area
Wetland G	0.1	32.21924	-80.7651	Freshwater
Wetland H	<0.1	32.21947	-80.7761	Freshwater

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Figure 5-3. Wetlands within Project Study Area

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The Project Study Area contains tidal salt marsh, tidal ditches, and freshwater wetlands. The salt marshes (Wetland A, C, D, E, and F) are tributaries to Mackay Creek and Skull Creek. Wetland D is located outside of the Project Study Area. Observed salt marsh vegetation includes bushy seaside tansy (*Borrichia frutescens*), smooth cordgrass (*Spartina alterniflora*), and black needlerush (*Juncus roemerieanus*). Wetland hydrology indicators in the salt marsh include standing water, saturated soils, and drift deposits.

Figure 5-4. Salt Marsh Between Hog Island and Jenkins Island.

Three freshwater wetlands (Wetland B, G, and H) were also identified within the Project Study Area.

- Wetland B connects to Wetland A through a roadside ditch. Vegetation is disturbed by maintenance of the powerline easement. Remaining vegetation includes wax myrtle (*Morella cerifera*) and Jesuit's bark (*Iva frutescens*) in the shrub layer and swamp smartweed (*Polygonum hydropiperoides*), Johnsongrass (*Sorghum halepense*), and bushy bluestem (*Andropogon glomeratus*) in the herbaceous layer. Hydrology indicators include drift deposits and algal mats.
- Wetland G is located in the powerline easement. Construction of powerline and clearing of right-of-way have disturbed the vegetation and soils. No trees or saplings are present. Jesuit's bark is the primary shrub. Herbaceous vegetation includes cattails (*Typha latifolia*), swamp smartweed, nodding beaksedge (*Rhynchospora inexpansa*), common rush (*Juncus effusus*), and bushy bluestem. Access roads in powerline easement have created a low area where water collects after rain events.
- Wetland H is a forested wetland located adjacent to the powerline easement. The wetland is sparsely-vegetated. Vegetation includes red maple *(Acer rubrum*) trees. Soils were dry during the field visit but water-stained leaves were observed.

Alternative 1 would impact approximately 0.2 acres of tidal salt marsh (Critical Area) and 0.1 acres of freshwater wetlands. Alternative 2A would not impact wetlands. The USACE and SCDHEC-OCRM have not reviewed the wetland and Critical Area boundaries;

therefore, these boundaries are subject to change. This report will be amended if substantial changes are made to the wetland and Critical Area boundaries that result in changes to the recommended alternative.

Permitting

A USACE Section 404 permit is required for impacts to jurisdictional waters of the U.S., including wetlands. Section 404 of the CWA is administered by the USACE. Depending on the type and extent of jurisdictional waters of the U.S., including wetlands, to be affected, Section 404 permitting requirements can range from activities that are considered exempt or preauthorized to those requiring preconstruction notification (PCN) for a Nationwide Permit (NWP), SCDOT General Permit, or Individual Permit from the USACE.

The SCDOT General Permit may be used for the project if the SCDOT elects to be the permit applicant. Under the SCDOT GP, impacts are not to exceed 3.0 acres of freshwater impacts, 0.5 acre of tidal wetland impacts, and/or 300 linear feet of jurisdictional stream impacts. If the SCDOT General Permit is not used for the project, the proposed improvements would likely qualify under the NWP. Under NWP #14 for Linear Transportation Projects, impacts are not to exceed 0.5 acre in freshwater wetlands and 0.33 acre in tidal waters.

If impacts are greater than the thresholds for the SCDOT General Permit or the NWP, the County would be required to submit an application for an Individual Permit. Individual Permit applications typically include detailed project information, permit drawings, biological assessments, and a cultural resource survey. USACE and SCDHEC review and certification typically requires 9 to 12 months, which includes a 30-day public notice period.

SCDHEC administers the Water Quality Certification program pursuant to Section 401 of the CWA. Section 401 requires that the state issue certification for any activity which requires a USACE Section 404 permit and may result in a discharge to State waters. All activities requiring a Section 404 permit result in a discharge to waters or wetlands. Therefore, SCDHEC must take certification action on all Section 404 permit applications. The Section 404 permit is not valid until Section 401 certification is approved.

Compensatory Mitigation

Compensatory mitigation for wetland and stream impacts would require purchasing mitigation credits from an approved mitigation bank, based on credit availability. Permittee-responsible mitigation to cover the mitigation credits may be required if no credits are available at the time of permitting. The required mitigation for this project would be determined during final design through consultation with SCDOT, the USACE and other resource agencies.

5.2 Essential Fish Habitat

In accordance with Magnuson-Stevens Fishery Conservation and Management Act, Federal agencies (e.g., FHWA) must consult with the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) on all projects that may adversely affect Essential Fish Habitat (EFH). Essential fish habitat includes all types of aquatic habitat—wetlands, coral reefs, seagrasses, rivers—where fish spawn, breed, feed, or grow to maturity (NOAA-NMFS, 2015).

While a detailed EFH assessment has not been conducted for the project, the Study Area contains EFH. Estuarine wetlands, or salt marsh, between Hog Island and Jenkins Island would be considered EFH. Alternative 1 would impact approximately 0.2 acres of estuarine wetlands; Alternative 2A would not impact EFH.

If there are adverse impacts to EFH from a proposed project, the EFH Survey Form would be completed during the NEPA phase and submitted to NOAA-NMFS for coordination. The EFH Survey Form would provide information on the proposed alternative, analysis of EFH impacts, and proposed avoidance, minimization and mitigation measures.

5.3 Threatened and Endangered Species

The Endangered Species Act (ESA) of 1973, as amended, states that any action likely to adversely affect a species classified as federally protected is subject to review by the USFWS. This act makes illegal the killing, harming, harassing, or removing of any federally listed species from the wild. Section 7 of the ESA requires federal agencies to ensure that actions they fund or authorize do not jeopardize any federally listed species. The assessment also considers species protected under the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668-668c), which prohibits anyone, without a permit issued by the Secretary of Interior, from “taking” bald or golden eagles, including their parts, nests, or eggs.

A resource list was obtained from the US Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) site. A total of 14 Federally Endangered and Threatened species were identified on the resource list (Table 5-3). According to IPaC, there are no USFWS-designated Critical Habitats for the above-listed species within the Project Study Area.

The South Carolina’s Department of Natural Resources’ (SCDNR) GIS database for rare, threatened, and endangered species and vegetation communities was also consulted. As shown in Figure 5-5, no species or communities were identified within the Project Study Area.

Table 5-3. Evaluated Federally Endangered and Threatened Species (IPaC 2015)

Common Name	*Scientific Name*	Designation
American Chaffseed	*Schwalbea americana*	Endangered
Canby’s dropwort	*Oxypolis canbyi*	Endangered
Pondberry	*Lindera melissifolia*	Endangered
Frosted flatwoods salamander	*Abystoma cingulatum*	Threatened
Kirtland’s Warbler	*Setophaga kirtlandii*	Endangered
Piping plover	*Charadrius melodus*	Threatened

Common Name	*Scientific Name*	Designation
Red Knot	*Calidris canutus rufa*	Threatened
Red-Cockaded woodpecker	*Picoides borealis*	Endangered
Wood stork	*Mycteria americana*	Threatened
Shortnose sturgeon	*Acipenser brevirostrum*	Endangered
West Indian Manatee	*Trichechus manatus*	Endangered
Green sea turtle	*Chelonia mydas*	Threatened
Kemp's ridley sea turtle	*Lepidochelys kempii*	Endangered
Leatherback sea turtle	*Dermochelys coriacea*	Endangered

5.3.1 Habitat Descriptions

The following provides summarized habitat descriptions for Federally-Listed species listed from USFWS IPaC (Table 5-3). During the NEPA process, the Study Area would be evaluated for potential suitable habitat for the above listed species. A biological assessment would be prepared and submitted to USFWS for review and concurrence.

American chaffseed (*Schwalbea americana*) – E

American chaffseed is a perennial herb approximately 1 to 2 feet in height, with mostly unbranched stems. The 2-lipped flowers are yellow with purple highlights and bloom from April through June in its historical southern range. American chaffseed is found primarily in the coastal plain along the Atlantic and Gulf Coasts. Its historic range is from Florida to Massachusetts and westward to east Texas. Its preferred habitat in is open pine flatwoods, bogs, palustrine pine savannahs, and lowland pine forests, as it requires acidic-sandy or peaty soils. A U.S. Fish and Wildlife Service (USFWS) survey in 1995 ([U.S. Fish and Wildlife Service [USFWS], 1995) documented 42 occurrences of this species in South Carolina (NatureServe, 2014a).

Canby's dropwort (*Oxypolis canbyi*) – E

Canby's dropwort is a perennial plant found in the South Carolina Coastal Plain with erect stems from 2.6 to 3.9 feet tall (USFWS, 2010). The leaves are slender, hollow and quill-like, and the flowers are compound umbels with white petals that appear from mid-August to early October, giving off a slight dill odor. The flowers fruits are 4 to 6 millimeters (mm) in length, with prominent wings, and split into multiple single seeded parts upon maturation. Canby's dropwort reproduces primarily via asexual means through rhizomes. Approximately 53 populations have been documented over the past 30 years in Georgia, Maryland, North Carolina, and South Carolina in pond cypress wetlands, pineland savannas, Carolina bays, and along the edges of cypress-pine ponds. There have been 33 documented findings in the following South Carolina counties: Allendale, Bamberg, Barnwell, Berkeley, Clarendon, Colleton, Florence, Hampton, Richland, Sumter, and Williamsburg (NatureServe 2014b).

Figure 5-5. Species Occurrence Data

Source: SCDNR GIS

Pondberry (*Lindera melissifolia*) – E

Pondberry is a dioecious deciduous shrub from 1.6 to 6.5 feet in height, and usually grows in large clonal clumps. The small yellow flowers bloom from March to April and the fruits mature in early fall. When crushed, the leaves give off a lemony-sassafras odor. Pondberry is known to occupy a variety of habitats from bogs, fens, and forested wetlands to hardwood forests, as long as its hydrological requirements are met. It's usually found in shaded areas but is able to tolerate full sun. The pondberry's range is primarily the Atlantic coastal plain from Florida to North Carolina and along the Gulf coastal plain from Alabama to Mississippi. South Carolinas' historical documented populations have been found in Beaufort, Berkeley, and Colleton Counties (NatureServe, 2014d).

Frosted flatwoods salamander (*Ambystoma cingulatum*) – T

The frosted flatwoods salamander has a black body with varying amounts of gray dorsal markings that create a net-like appearance. Adults reach lengths of 1 to 1.3 inches and can weigh up to 0.4 ounces. Breeding habitats include small (generally <1 to 10 acres (ac) acidic, depressional standing bodies of fresh water (wetlands) that are seasonally flooded by rainfall, are geographically isolated from other water bodies, and occur within pine flatwoods–savanna communities. Non-breeding habitat includes upland pine flatwoods–savanna habitat that is open, mesic woodland maintained by frequent fires and is within 1,500 ft of adjacent and accessible breeding ponds. Frosted flatwoods salamander's range includes the lower southeastern coastal plain of the U.S. from South Carolina to north-central Florida and westward into southern Georgia and from there south into northern Florida. In South Carolina, they've been observed breeding in the same waters as the Mabee's salamander (Ambystoma mabeei) which it is commonly confused with (NatureServe, 2014c).

Kirtlands warbler (*Setophaga kirtlandii*) – E

The Kirtlands warbler is a coastal migrating songbird reaching 6 inches in length and 0.45 ounces in weight. They have blue-gray plumage with black streaks and a yellow underbelly. Eggs are usually laid between late May and June and chicks are fledged between 8 and 12 days after hatching. Nest mortality is generally a result of predation by American crows, blue jays, hognose and garter snakes, and squirrels (NatureServe, 2014h).

Kirtlands warblers preferred breeding habitat is fire generated dense stands of jack pine with little or no hardwoods present. However, they also nest on the ground at the base of pine trees in their breeding ranges of upper Michigan, Wisconsin, and Ontario, Canada. Winter migration sightings occur along their route from their breeding habitats to their destination in the Bahamas, including areas of the southeastern coast of the U.S (NatureServe 2014h).

Piping plover (*Charadrius melodus*) – T

The piping plover is considered small for a shorebird averaging approximately 6.5 to 7.0 inches in length and between 1.6 and 2.3 oz. in weight. They are mostly white in color with a dark band across the front of the crown and black shoulder patches. During breeding season, adult females arrive at the breeding area several weeks after the males have arrived and have established territories (NatureServe 2014k).

Piping plovers preferred foraging habitat consists of beach dunes, intertidal flats, and tidal pool edges. U.S. breeding locations have been documented in the Great Plains, eastern Montana, Minnesota, the Dakotas, southeastern Colorado, Iowa, Nebraska, New York, New Jersey, Massachusetts, Virginia, and North Carolina. Wintering populations reside from Florida to North Carolina, and at various locations in the Gulf Coast States (NatureServe 2014k).

Rufa red knot (*Calidris canutus rufa*) –T

The rufa red knot (RRK) is approximately 9 to 11 inches in length with an average wingspan of 22 inches. The RRK is about the size of a robin with a mottled pattern of black, gray, and rose colored feathers on its back and a rose underbelly reaching up through the throat and around the eyes (Fretwell 2014). They feed primarily on horseshoe crab eggs along their US Atlantic Coast seasonal migration route but have also been known to feed on mollusks and marine worms (USFWS 2010). Delaware Bay and coastal Virginia remain their largest concentration areas during their spring and fall migrations, but overwintering populations have been observed on sandy beaches and in mud flats on the South Carolina coast. RRK nests are found on the ground in shallow depressions lined with leaves and lichens near water (SCDNR 2014n).

Red-cockaded woodpecker (*Picoides borealis*) – E

The red-cockaded woodpecker (RCW) is approximately 7.1 to 7.9 in length with a 13.8 to 15.0 cm wingspan. It has a dull white breast with black spots, barred back feathers of black and white, black wings, a black cap, and a tell-tale large white patch on both cheeks. It gets its name from the distinctive red streaks or “cockades” on the sides of the head which are more visible on females and juveniles than on adult males (Chadwick 2003).

The RCW requires mature stands of longleaf and/or loblolly pine to excavate a living cavity and encircles the cavity with small holes to encourage the flow of tree sap which is believed to protect it from predators (USFWS 2003). This habitat requires burning, which eliminates scrub oaks and other hardwoods which discourage nesting of RCWs. RCWs lay their eggs between April and June and fledge their offspring between 26 and 29 days after hatching. The RCW’s historic range extends from New Jersey to Texas and inland to Missouri, but its current range excludes New Jersey, Maryland, and Missouri (NatureServe 2014e).

Wood stork (*Mycteria americana*) –T

Adult wood storks are one of the largest wading birds in North America with a wingspan of 59 to 65 inches and a head-to-tail length of 33 to 45 inches (USFWS 1997). They are all white in color except for the black primary and secondary wing and tail feathers, and a long thick black bill. Their habitats consist of cypress swamps, bottomland hardwood forests, tidally influenced freshwater wetlands, and abandoned rice fields maintained for water fowl, but they also feed in salt marshes (Brooks 2007). Wood storks generally nest in colonies from February to April and lay eggs from March to late May. Hatchlings usually emerge from early May to mid-June and fledge in July or August.

The wood stork's historic breeding range is from South Carolina and Florida to Mexico, Central America, Cuba, and Northern Argentina. Today's North American populations are increasing in South Carolina primarily due to migration from Florida as a result of decreasing habitat. The wood stork species was recently reclassified from endangered to threatened when an average of 6,000 nesting pairs were recorded and more than 1.5 chicks per nest per year reached fledgling age, over a 3 year period (USFWS 2014; Rodgers et al. 2008).

Shortnose sturgeon (*Acipenser brevirostrum*) – E

The shortnose sturgeon can reach up to 3.3 feet in length, has a heterocercal tail, a short shovel-shaped blunted snout, ventral mouth, and large bony scutes on the head, back, and sides. Adults feed at the freshwater/saltwater boundary in their southern range and swim upstream to spawn. Spawning generally begins in late winter or early spring and last a few days to several weeks and usually does not occur in consecutive years. Females can live up to 67 years and males up to 30 years (NMFS 2007).

The shortnose sturgeons' historic range is along the Atlantic Coast of North America from the Saint John River in New Brunswick to the St. Johns River in Florida. The federal recovery plan (NMFS 1998) identified 4 distinct populations in South Carolina; Winyah Bay, Santee River Basin, Cooper River, and the Ace Basin (NatureServe 2014o).

West Indian manatee (*Trichechus manatus*) – E

The Florida manatee, also known as the West Indian Manatee, is a large brown/gray herbivorous marine mammal reaching 10 to 13 feet in length and up to 1,000 ponds (lbs.) in weight. They are slow moving inquisitive animals with large flattened tails and paddle like forelimbs. Females reach breeding age from 7 to 9 years and males from 9 to 10 years with longevity of more than 50 years. Manatees are usually solitary; however they sometimes cavort in large groups or can be found in mating herds. Manatee habitats are fully marine although they are attracted to freshwater outlets. They prefer slow moving waters 3 to 6 feet deep and feed on marsh grass at high tide, floating vegetation, and algae off of marine structures. The U.S populations appear to originate from Florida, but transient groups and individuals are commonly found in Alabama, Georgia, and South Carolina coastal waters (NatureServe 2014d).

Green sea turtle (*Chelonia mydas*) – T

Although it's common name is the "green" sea turtle, its carapace is predominantly brown with wavy dark blotches with a mostly white plastron. Adults generally weigh between 250 and 650 lbs. and have carapace lengths between 3 and 4 feet. Adults migrate up to 1,850 miles between breeding habitats (beaches) and feeding habitats. Adults prefer shallow low energy waters with adequate submerged vegetation, mollusks, sponges, crustaceans, and jellyfish for feeding (NatureServe 2014f).

Kemp's ridley sea turtle (*Lepidochelys kempii*) – E

The kemp's ridley sea turtle has an olive green nearly circular carapace and yellow plastron; juveniles have a gray colored carapace. Adults generally weigh between 80 and 100 lbs. with carapace lengths between 23 and 30 inches. Adults prefer shallow marine and estuarine waters in the Gulf of Mexico where crabs are plentiful. Juveniles feed primarily on sargassum and mollusks. In addition to the Gulf, Kemps sea turtles also inhabit waters in the Long Island Sound, New England, and Nova Scotia. Sixty percent of all nesting occurs at the Rancho Nuevo Beach, in Tamaulipas, Mexico, although sporadic nesting has been documented on North Carolina beaches (NatureServe 2014g).

Leatherback sea turtle (*Dermochelys coriacea*) – E

The leatherback is the largest of the sea turtles with a carapace length of 53 to 74 inches and weighs between 650 to 2,000 lbs. Their carapace is dark blue to blackish in color with seven prominent longitudinal ridges and no scutes. Adults have been documented migrating between hundreds and thousands of miles between nesting and feeding waters. Preferred nesting habitat is on sloping continental beaches with the absence of a fringing reef, often near deep and/or rough ocean waters. Those nesting in the Caribbean are known to migrate north along the Atlantic Coast, reaching New England by late summer. Considered almost entirely pelagic, they move from the open ocean to the edge of continental shelves (NatureServe 2014i).

Bald eagle (*Haliaeetus leucocephalus*) – BGEPA

Adult bald eagles are large raptors with a distinctive white head and tail, dark brown body, and bright yellow bill and feet (SCDNR, 2014). Bald eagle nests are typically found within approximately 0.5 miles of open water. Coastal areas, bays, large river systems, and lakes provide adequate foraging opportunities for fish, waterfowl, and water birds. Preferred nesting habitat is usually found in large conifer trees with open limb structure.

5.4 Floodplains

The Project Study Area is located on Hog Island and Jenkins Island, which are surrounded by MacKay Creek, Skull Creek, and Jarvis Creek. The Project Study Area is located within Zone A8 of the Federal Emergency Management Agency (FEMA) FIRM 4500250118D and 4500250115D (Figure 5-6). These areas are subject to inundation by the 1-percent-annual-chance flood event. The Base Flood Elevation for this zone is 15 Feet.

Alternative 2A would have minimal fill impacts within the floodplains. While Alternative 1 would be designed to avoid and minimize the placement of above grade fill within FEMA regulated floodplains, this alternative would likely require coordination with the local floodplain administrators. Alternative 1 would be designed to maintain flood flows across US 278; the road elevation would not impede or divert flows.

Two 60-inch culverts are located under US 278 at the base of the J. Wilton Graves Bridge. These culverts were intended to maintain tidal flows in the creek and salt marsh between Hog Island and Jenkins Island. According to stakeholders and local residents, the culverts are clogged and tidal flows are not connected under US 278. If Alternative 1 is constructed, the culverts may be extended beneath the frontage road and maintained to support tidal exchange under US 278.

5.5 Land Use

Table 5-4 shows the zoning designations for the communities and properties within the Study Area. The surrounding communities and properties are within the Town of Hilton Head Island and unincorporated areas of Beaufort County, South Carolina. Land use surrounding the proposed project includes wooded, undeveloped areas and residential development. Jenkins Island Road leads to the privately-owned Hilton Head Island RV Resort and marina. The Town of Hilton Head Island owns a larger parcel north of US 278 on Jenkins Island, which is designated for parks and recreation land use. The parcel is not currently operated or managed as a park or recreation area. A portion of the Town-owned property is used by the public service district. Jenkins Island Cemetery is also located north of the Project Study Area.

The proposed project is not expected to modify existing residential land use or change the timing or density of development in the area. The frontage road proposed in Alternative 1 would require right-of-way acquisition within the Town of Hilton Head Island Parcel. Alternative 1 would require coordination with the Town to determine how the proposed roadway improvements would affect potential parks and recreation land use on the surrounding parcel. Alternative 2A would not result in any land use changes.

Table 5-4. Land Use Within and Surrounding Project Study Area

Parcel/Community	Zoning Designation
Mariner’s Cove	Neighborhood Mixed-Use
Blue Heron Point	Neighborhood Mixed-Use
Hilton Head Island RV Resort and Marina	Neighborhood Mixed-Use
Windmill Harbour	Existing Planned Unit Development
Town of Hilton Head Island Property	Parks and Recreation

Source: Beaufort County. 2010.
Town of Hilton Head Island. 2014.

Figure 5-6. Flood Zones

Source: FEMA

5.6 Farmlands

The USDA Natural Resources Conservation Service (NRCS) has classified lands into three categories based on suitability for agricultural uses. These include soils of prime, unique, and statewide importance. Criteria used for prime and unique farmlands were published January 31, 1978 in the Federal Register and amended in June 17, 1994. Soils of prime, unique and statewide importance occurring within the Study Area are shown in Figure 5-7 and summarized in Table 5-5.

The USDA has defined Prime farmlands (PFL) as soils that are best suited to producing crops, feed, forage, fiber, and oil seed crops, and also available for these uses (the land could be cropland, pastureland, rangeland, forest land, or other land, but not urban built-up land or water). These soils produce the highest yields with minimal inputs of energy and economic resources. Unique farmlands include soils that have a special set of properties that are unique for producing certain high value crops. Farmland of Statewide Importance are lands that do not meet the requirements for prime farmland but that are of statewide importance for the production of food, feed, fiber, forage, and oil seed crops.

Table 5-5. Soils of Prime, Unique and Statewide Importance

Map Unit	Potential Statewide Importance or Prime Farmland	Acres in Study Area	Percent in Study Area
Coosaw	Statewide Importance	6	9%
Bertie	Prime farmland	12	17%

None of the Study Area is currently in agricultural production. Coosaw soils are mapped on Hog Island and are listed as soils of Statewide Importance. Bertie soils are mapped north of US 278 and are listed as Prime Farmland. Yemassee soils have the potential to be prime farmland, if drained; Wando and Seabrook soils have the potential to be prime farmland, if irrigated. The proposed project would not result in the loss of any Prime Farmlands. Alternative 1 would impact approximately 2.2 acres of land classified as Farmland of Statewide Importance or Prime Farmland. Alternative 2A would not impact land classified as Farmland of Statewide Importance or Prime Farmland.

5.7 Cultural Resources

The National Register of Historic Places (NRHP) is the nation's inventory of historic places and the national repository of documentation on the variety of historic property types, significance, abundance, condition, ownership, and other information. A database search of the NRHP listed no known historical structures or historical districts located within the Study Area, or on Jenkins Island or Hog Island (NRHP, 2014). The online resource, ArchSite, operated by the South Carolina Institute of Archaeology and Anthropology (SCIAA) and the South Carolina Department of Archives and History (SCDAH) was also consulted. Figure 5-8 shows no sites were identified within the Study Area on ArchSite. Therefore, no direct or indirect impacts to NRHP listed structures or sites are anticipated. The State Historic Preservation Office (SHPO) would likely require a cultural resource survey for Alternative 1 because of the proposed frontage road through previously-undisturbed property. Alternative 2A may not require a cultural resource survey because the improvements are confined to previously-disturbed areas.

Figure 5-7. NRCS Soils
Source: NRCS

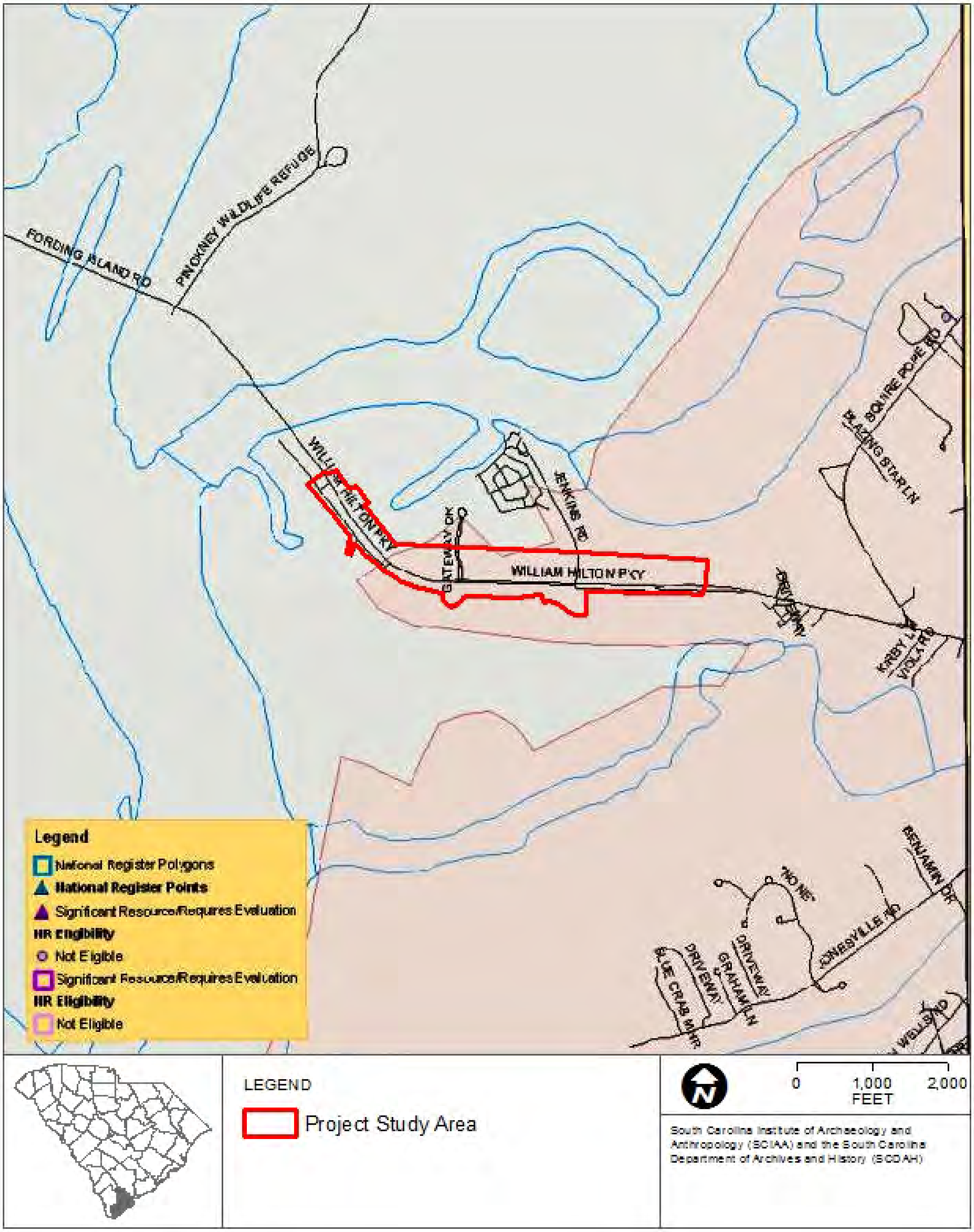

Figure 5-8. National Register of Historic Places

Source: SCIAA-SCDAH ArchSite

5.8 Section 4(f)

Section 4(f) of the Department of Transportation Act of 1966 requires the FHWA to consider a project's affect on:

- Parks and recreational areas of national, state, or local significance that are both publicly owned and open to the public,
- Publicly owned wildlife and waterfowl refuges of national, state, or local significance that are open to the public to the extent that public access does not interfere with the primary purpose of the refuge, and
- Historic sites of national, state, or local significance in public or private ownership regardless of whether they are open to the public.

The Project Study Area does not contain wildlife and waterfowl refuges and public or private historic sites subject to Section 4(f) review.

A parcel within the Study Area is owned by the Town of Hilton Head Island and is zoned for Parks and Recreation use. While this parcel is not currently managed as a park or recreation area, coordination would be required with the Town of Hilton Head Island about the property's intended use.

The frontage road proposed in Alternative 1 would impact the Town parcel and require approximately 3.1 acres right-of-way acquisition from the Town. Alternative 2A would also require approximately 0.8 acres of right-of-way from the Town parcel to accommodate the U-turn and acceleration/deceleration lanes.

Therefore, both alternatives would likely require preparation of a Section 4(f) evaluation. The evaluation would determine whether there is a feasible and prudent alternative that completely avoids the use of Town property and identify the required next steps for compliance with Section 4(f).

5.9 Noise

The proposed project would be conducted in accordance with 23 CFR 772, "Procedures for Abatement of Highway Traffic Noise and Construction Noise," effective July 2011 and the SCDOT Traffic Noise Abatement Policy, effective September 1, 2014.

A noise analysis is required for proposed federal-aid highway projects that would physically alter an existing highway or increase the number of through-traffic lanes. Alternative 1 would involve construction of a roadway in a new location; therefore, this alternative would require a detailed noise analysis. Because Alternative 2A does not involve additional lanes or new roads, a noise analysis would not be required.

For Alternative 1, a noise analysis would be conducted to evaluate the existing noise levels and potential noise impacts associated with the proposed project. Existing and future noise levels would be evaluated. When traffic noise impacts are identified, FHWA and SCDOT require that noise abatement be evaluated for feasibility and reasonableness. Noise abatement, such as barriers, would be evaluated for the affected receptors. A noise barrier evaluation would be performed to determine whether feasible and reasonable barriers could be constructed at the noise sensitive sites as means to reduce or eliminate traffic noise impacts. Noise barriers must achieve a 5 dBA reduction for at least 75 percent or more of the affected receptors, achieve an 8 dBA reduction for at least 80 percent of the benefited receptors, and is cost effective. If the cost per benefitted receptor is more than $30,000 then the barrier is determined to not be cost effective.

5.10 Air Quality

Beaufort County is currently in attainment with national ambient air quality standards. This report includes a basic analysis of the likely Mobile Source Air Toxics (MSATs) emission impacts of this project. Alternative 1 and 2 would be considered “Projects with Low Potential MSAT Effects” because the proposed improvements would not add substantial new capacity.

Available technical tools do not enable us to predict the project-specific health impacts of the emission changes associated with the alternatives in this report. Due to these limitations, the following discussion is included in accordance with Council on Environmental Quality (CEQ) regulations (40 CFR 1502.22(b)) regarding incomplete or unavailable information.

Evaluating the environmental and health impacts from MSATs on a proposed roadway project would involve several key elements, including emissions modeling, dispersion modeling in order to estimate ambient concentrations resulting from the estimated emissions, exposure modeling in order to estimate human exposure to the estimated concentrations, and then final determination of health impacts based on the estimated exposure. Each of these steps is encumbered by technical shortcomings or uncertain science that prevents a more complete determination of the MSAT health impacts of this project.

As discussed above, in Appendix C of FHWA’s December 6, 2012 guidance, “Interim Guidance Update on Air Toxic Analysis for NEPA Documents,” technical shortcomings of emissions and dispersion models and uncertain science with respect to health effects prevent meaningful or reliable estimates of MSAT emissions and effects of this project. Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis. A qualitative analysis provides a basis for identifying and comparing the potential differences among MSAT emissions, if any, from the various alternatives. The qualitative assessment presented below is derived in part from a study conducted by the FHWA entitled A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives, found at: www.fhwa.dot.go/environment/air_quality/air_toxics/research_and_analysis/methodology/methodology00.cfm.

The purpose of the project is to improve operational efficiency at the three intersections on Jenkins Island. The project would not result in additional capacity within the Study Area. Alternative 1 and 2A would improve the Level of Service for turning movements at the intersections; thereby, reducing vehicle idling time that contributes to MSAT emissions.

The additional frontage road contemplated as part of the Alternative 1 would have the effect of moving some traffic closer to nearby homes; therefore, there may be localized areas where ambient concentrations of MSATs could be higher under Alternative 1 than Alternative 2A and the No-Build Alternative. However, the magnitude and the duration of these potential increases compared to the No-Build alternative and Alternative 2A cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts.

In sum, the localized level of MSAT emissions for the Build Alternatives could be higher relative to the No-Build Alternative, but this could be offset due to reductions in congestion (which are associated with lower MSAT emissions). Also, MSAT would be lower in other locations when traffic shifts away from them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, would over time cause substantial reductions that, in almost all cases, would cause region-wide MSAT levels to be significantly lower than today.

5.11 Hazardous Materials

A review of environmental records available at SCDHEC was conducted to determine if any sites with potential or existing environmental contamination were present within or directly adjacent to the Project Study Area. Databases included, but were not limited to, above ground storage tanks (ASTs), Underground Storage Tanks (USTs), leaking underground storage tanks (LUSTs), dry cleaners, and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites.

No sites were identified within the Project Study Area (Figure 5-9). The records review indicated t two USTs are located on Jenkins Island, one at Windmill Harbour marina and one at Hilton Head Island RV Resort Marina. The USTs are over 2,000 feet from the Project Study Area; therefore, not impacts to hazardous material sites are anticipated as part of the proposed project.

It is SCDOT’s practice to avoid the acquisition of USTs and other hazardous waste materials, if at all possible. If soils that appear to be contaminated with petroleum products were encountered during construction, SCDHEC would be informed. If stained soils or potentially hazardous materials are identified during construction, further investigation in the form of Phase I Environmental Site Assessment may be required to assess potential recognized environmental concerns. Hazardous materials would be tested and removed and/or treated with the U.S. Environmental Protection Agency (EPA) and SCDHEC requirements, if necessary.

5.12 Displacements and Right-of-Way Acquisition

Alternative 1 would require the acquisition of approximately 5.9 acres of new right-of-way, while Alternative 2A would require approximately 1.0 acre of right-of-way. After review of the proposed project, it has been determined that the project would not result in the relocation/displacement of any residential establishments.

Figure 5-9. Underground Storage Tanks surrounding Project Study Area
Source: SCDHEC

5.13 Environmental Justice

EPA's Office of Environmental Justice defines Environment Justice as follows: "The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies."

Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations directs federal agencies to analyze “the environmental effects, including human health, economic and social effects, of Federal actions, including effects on minority communities and low income communities” when doing a NEPA analysis. The 2010 U.S. Census Data from the Project Study Area was gathered to identify communities that were either minority or low-income (Table 5-6). Based on this data the town of Hilton Head Island would not be considered a Low Income Community.

Based on the 2010 census data, approximately 37,099 people live in the Town of Hilton Head Island. The population of the Town of Hilton Head Island is 82.9% white and 7.5% black or African American. The population of Beaufort County as a whole is 71.9% white and 19.3% black or African American. The median household income in Town of Hilton Head Island is higher than the median household income in Beaufort County and the State median. The percentage of individuals living below the poverty level is lower in Hilton Head Island (8.5%) than the levels for Beaufort County (12.5%) and South Carolina (18.1%).

The proposed project is not located within a low-income community and would not have an adverse affect on any group, including minorities or low income populations. The project would not result in the displacement of any person or community. The proposed project would result in improved service and access to the residents of Hilton Head Island and the surrounding areas and communities.

Table 5-6. Select Socioeconomic Characteristics of Study Area

Attribute	Town of Hilton Head Island	Beaufort County	South Carolina
POPULATION AND RACE			
Population	37,099	162,233	4,625,364
White	82.9%	71.9%	66.2%
Black	7.5%	19.3%	27.9%
American Indian and Alaskan Native	0.2%	0.3%	0.4%
Asian	0.9%	1.2%	1.3%
Native Hawaiian and Other Pacific Islander	0.1%	0.1%	0.1%
Other	7.3%	5.2%	2.5%
Two or More Races	1.2%	2.1%	1.7%
AGE, HOUSEHOLD SIZE, AND INCOME			
Median Age	50.9	40.6	37.9
Average Household Size	2.23	2.42	2.49
Median Household Income (in dollars)	$69,772	$57,316	$44,779
Below poverty Level	8.5%	12.5%	18.1%
EDUCATION LEVELS OF POPULATION 25+ YEARS IN AGE (BY PERCENT)			
Up to 12th Grade, No Diploma	7.6%	12.1%	23.7%
High School Diploma or Equivalent	18.1%	24.2%	30.0%
Some College, No Degree	21.8%	23.5%	19.3%
Associate Degree	6.6%	6.9%	6.7%
Bachelor’s Degree	30.8%	21.6%	13.5%
Graduate or Professional	15.1%	11.7%	6.9%
HOUSING CHARACTERISTICS			
Median Home Value (owner occupied; in dollars)	$447,900	$275,500	$137,400
Number of Housing Units	33,306	93,023	2,137,683
Owner Occupied	36.1%	49.3%	58.4%
Renter Occupied	13.5%	20.5%	25.9%
Vacant	50.4%	30.2%	15.7%

Source:

U.S. Census Bureau, Census of Population and Housing 2010. Accessed August 28, 2015 and August 31, 2015. Available from: http://www.census.gov/2010census/popmap/ipmtext.php

US Census Bureau. 2010 Census. American FactFinder. Accessed August 28, 2015 and August 31, 2015. Available from: http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml

U.S. Census Bureau, Census 2000 Summary File 3, Matrices P37 and PCT25.

U.S. Census Bureau, 2009-2013 5-Year American Community Survey (ACS)

6 Utility Coordination

The information provided below regarding existing utilities was obtained from field visits to record above-ground facilities and initial coordination with utility owners to obtain copies of available records. No field surveying has been conducted at this time, therefore, no actual utility locates have been requested. Prior to field surveying services, these utilities should be marked by SC811.Subsurface utility engineering (SUE) may be deemed necessary dependent upon the proposed improvements and potential conflict areas. At the time of this report, none of the utility companies surveyed have plans for extensions or relocations to the existing lines.

6.1 Water and Sewer

Existing water and sewer service in the Project Study Area is owned and maintained by Hilton Head PSD (1 Oak Park Drive #21, Hilton Head Island, SC 29926). In general, the majority of the PSD utilities are located adjacent to and along the boundary of Santee Cooper's transmission line right-of-way. Additional crossings of US 278 right-of-way occur at the intersections with Blue Heron Point Road, Gateway Drive / Crosstree Drive and Jenkins Island Road. See Appendix F for exhibit of Hilton Head PSD water and sewer utilities within the Project Study Area.

6.2 Electrical

Electrical service in the Project Study Area is provided by Palmetto Electric (1 Cooperative Way, Hardeeville, SC 29927). In general, Palmetto Electric's cable and equipment is outside of the SCDOT right-of-way, except at crossings. They do have power along the northern edge of Santee Cooper's transmission line right-of-way to supply power to two wells for Hilton Head PSD. There are no plans for expansion in this area, per coordination with Palmetto Electric. However, Palmetto Electric indicated they would build to serve any new loads that may not currently be identified. See Appendix F for exhibit of Palmetto Electric electrical power service utilities within the Project Study Area.

Electrical transmission utilities in the Project Study Area are owned by Santee Cooper and exist along both the north and south side of US 278. Multiple facilities along the north side of US 278 lie within a 150 foot transmission utility easement bisecting the Town of Hilton Head Island-owned property. A single transmission line exists along the south side of US 278 from Bluffton to the existing maintenance access road for Windmill Harbour intersecting Blue Heron Point Road. The utility line then crosses Blue Heron Point Road and US 278 into the existing transmission easement. Santee Cooper shall require an encroachment permit for any developments / encroachments within their easement, therefore, initial and regular contact with the utility during the design phase of the project would be paramount to the project design and construction schedule. Santee Cooper design standards also require certain horizontal setbacks from their facilities and vertical clearance requirements that must be met. If the selected alternative affected the transmission line, future designs should avoid and minimize direct impacts to the transmission line structures because of the costs associated with the relocation of such structures.

6.3 Communication and Cable

Communication and cable service in the Project Study Area is provided by Hargray Communications (PO Box 3380, Bluffton, SC 29910). In general, Hargray has communication lines (cable and fiber) throughout the Project Study Area along the US 278 corridor including portions of the centerline, northern and southern shoulders and perpendicular crossings. Some of these utilities were recently (or in the process of being) relocated by Hargray for the intersection improvement at US 278 and Windmill Harbour. See Appendix F for exhibit of Hargray's communication and cable service utilities within the Project Study Area.

6.4 Stormwater Drainage

Existing stormwater drainage structures in the Project Study Area (within SCDOT-maintained rights-of-way) are owned and maintained by SCDOT. These pipes and swales likely would require modifications due to future proposed improvements. Any future roadway improvements would need to be studied to ensure applicable water quality standards are met. Additionally, depending on the nature of any improvements or impacts to the existing storm drainage system, permitting may also involve state and federal agencies such as SCDHEC-OCRM and USACE.

Public involvement on this project, specifically with the stakeholder's, Mariner's Cove and Blue Heron Point Road communities, identified the existence of dual, 60" reinforced concrete pipe culverts under US 278 between the end of the J. Wilton Graves bridge and the intersection with Blue Heron Point Road, installed under SCDOT File No. 7.419.1 (1978). Tidal cross-flow between Hog Island and Jenkins Island, presumably the reason for the initial installation of these culverts, has degraded over the years with complete non-functionality today. Excavations necessary to uncover and clean these pipes, and / or determine a more efficient and economical way to restore the tidal flow is an important issue to the citizens of the area; although outside of the scope of the access management study, it is recommended that future design efforts investigate the necessary requirements, feasibility, traffic control and permitting issues that would involve improvements to this issue. See Appendix F for exhibit of SCDOT File 4.419.1 (1978) and letter from Town of Hilton Head Island to SCDOT documenting issue.

6.5 Potential Utility Impacts

There are numerous utilities located in the Project Study Area that may be impacted by any proposed improvements. The impact and modifications to the existing utilities would need to be studied further as the project progresses and as detailed plans for improvements are available. Alternative 1 would result in greater utility impacts and necessary coordination because the proposed frontage road would cross the Santee Cooper transmission line right-of-way. Alternatives 1 and 2A would each have comparable effects on existing utilities that parallel US 278 within the current right-of-way.

7 Public Involvement / Scoping

7.1 Stakeholder's Scoping Meeting

A project stakeholder's scoping meeting was held for the project on Tuesday, June 16, 2015 at the Hilton Head Island Library Meeting Room. Those invited to the meeting as stakeholder's included representative employees and officials of Beaufort County, representatives of SCDOT, representatives from each of the affected communities on the island and personnel from the consultant engineering team including HDR/ICA Engineering, HDR and Ward-Edwards. The purpose of the stakeholder's meeting was to provide information regarding project activities, status and schedule; and also to obtain feedback on the project issues, deficiencies and vision. Community outreach via community meetings and an online survey was also discussed.

The meeting included 22 representatives from the above-stated stakeholder parties. Key project issues discussed at the meeting included traffic and safety concerns, potential alternatives to be studied and discussions of the positive and negative attributes of the currently proposed alternatives. The alternatives discussed included the construction of a frontage road along the northern side of US 278, creating right-hand turns for all existing access points, and a median U-turn option.

Environmental issues and impacts due to future project construction were also discussed. The majority of concern involved the health and vitality of the area's natural wetlands and that reduction of these impacts should be greatly considered. Additional conversation included the potential to re-open existing 60" concrete pipe culverts under US 278 so that natural tidal cross-flow could be maintained between Hog Island and Jenkins Island.

See Appendix E for Stakeholder Meeting Minutes.

7.2 Public Information Meetings

Public information meetings were held August 10th and August 12th, 2015 with each of the four affected communities on Jenkins Island. Prior to the meetings, an online survey of project issues and opinions for improvements was developed and included on the Beaufort County website. Venues for the meetings, times and dates were coordinated with individual stakeholders for each community. Notices of the meetings were developed and coordinated directly with the stakeholders for dissemination to residents via email blasts, fliers, community newsletters and active community committees.

Individual meetings were held for each community because of their unique geographic locations and different uses as residential and vacation / hospitality areas.

Large-scale drawings of two proposed alternatives (Alternative 1: Right-In Right-Out with Frontage Road and Alternative 2: Modified Super Street) were brought to each meeting along with a project information sheet, sign-in sheets and hard copies of the online survey.

The Jenkins Island Access Management Project Community Survey was developed in coordination with Beaufort County and per issues and discussion from the project stakeholder meeting. The questions within the survey were developed to illicit responses specific to the opinions of each specific neighborhood. Questions included opinions on existing traffic and safety issues and opinions on proposed solutions. The online survey garnered responses from 211 individuals / households with the majority of responses from the Windmill Harbour community at 79%. The remaining results included percentage of responses by the following; Blue Heron Point (7%), Mariner's Cove (7%), Hilton Head Harbor RV Resort and Marina (4%), with the remaining 3% of results as "other". Separate from motor vehicle access questions, the survey also asked whether respondents would be favorable toward the addition of a dedicated pedestrian / bicycle pathway along US 278; all of the communities polled with a majority favorable toward the issue.

The online survey was also provided in hard-copy at each of the meetings for residents to complete and return or mail-in. The following discussion of individual meetings provides information on community-specific survey responses.

See Appendix F for Public Information Meeting documents for each community.

7.2.1 Hilton Head Harbor RV Resort and Marina

A meeting was held Monday, August 10, 2015 from noon to 2 P.M. at the Hilton Head Harbor RV Resort and Marina Owner's Lounge. The RV Resort includes approximately 200 RV sites and caters to several full-time residents, seasonal vacation and rental sites, marina and hospitality and recreational sites. In attendance were 37 members of the community and county officials. Key issues from this meeting included the concern over ingress / egress from the resort, specifically, the tight movements that large vehicles (trucks and RV's) would need to navigate to the resort should Alternative 1 be constructed. Main issues addressed with Alternative 2 included the potential difficulty to make a U-turn from US 278 under the typical traffic volumes of US 278. Residents of the community were also concerned about the lack of left-turn access from Jenkins Island Road onto US 278, thus increasing the drive time from the RV Resort onto the island.

The Hilton Head Harbor RV Resort and Marina submitted 19 survey responses (9 online and 10 hard copy). Most respondents had an unfavorable opinion on gap times, while traffic visibility was mostly between acceptable and somewhat acceptable. All of the respondents indicated that left-turning movements and traffic movements were the most difficult during the morning and evening peak hour periods, with all-day on weekends (nearly tied) for the third most problematic time period. The respondents overwhelming disapproved of closing median cross-overs with nearly the same stating that right hand turns were not favorable. Safety, turning movements and property values were the most important issues when evaluating a solution with traffic signal installation, acceleration / deceleration lanes and "other" as the preferred solutions. The "other" included the relocation Crosstree Drive opposite Jenkins Island Road (2 responses) with a traffic signal.

7.2.2 Windmill Harbour

A meeting was held Monday, August 10, 2015 from 4 P.M to 6 P.M. at the South Carolina Yacht Club within the Windmill Harbour community. Windmill Harbour is the largest residential community on the island with approximately 300 home sites and a private marina located along the south side of the island. In attendance were 132 community members. Specific issues and concerns addressed at this meeting included intersection safety, travel speeds along US 278 and the lack of left-turning ability during peak volumes. The majority of the discussions from the residents stated the need for a traffic signal at the Windmill Harbour entrance. This improvement was studied and determined that existing traffic volumes from Windmill Harbour would not meet the necessary traffic signal warrants as required by SCDOT.

The Windmill Harbour community submitted 176 survey responses (166 online and 10 hard copy). Most respondents had an unfavorable opinion on gap times and existing traffic visibility and speeds. The majority of the respondents indicated that left-turning movements and traffic movements were the most difficult during the morning and evening peak hour periods with weekend afternoons as the third most problematic time period. The respondents were nearly evenly split on the favorability of closing median cross-overs. The survey included a Windmill Harbour-specific question regarding favorability toward providing neighborhood association property for potential access easements which garnered a 77% percent approval of respondents. Safety, turning movements and motor vehicle / pedestrian / bicycle movements were the most important issues when evaluating a solution with traffic signal installation, providing right hand turns for entrance and exit and the construction of acceleration / deceleration lanes as the preferred solutions.

7.2.3 Blue Heron Point

A meeting was held Wednesday, August 12, 2015 from 4 P.M. to 6 P.M. at the Hilton Head Island Library Meeting Room. In attendance were 22 residents of the community. The Blue Heron Point community is comprised of approximately 28 single-family residences along Blue Heron Point Road on the north side of US 278. The community is located on Hog Island while their access to US 278 is located on Jenkins Island. Key issues as determined from this meeting included concern regarding the influx of traffic in front of the community with Alternative 1 and U-turn safety and viability concerns (specifically during peak hours) with Alternative 2. Residents in this community had very similar concerns as those from the Hilton Head Harbor RV Resort.

The Blue Heron Point community submitted 21 survey responses (15 online and 6 hard copy). The results included a mix of opinions on gap times and traffic visibility with most responses of “somewhat acceptable”. Traffic speeds along US 278 and the bridges were considered “not acceptable” by a majority of respondents. The majority of the respondents indicated that left-turning movements and traffic movements were the most difficult during the weekend morning peak, followed closely by the weekday morning and evening peaks (nearly tied). Nearly all of the respondents overwhelming disapproved of closing median cross-overs, but those who approved were willing to travel up to a half-mile to make a right-hand turn. Safety was the important issue when evaluating a solution, closely followed by turning movement provisions, property values, environmental stewardship and noise. The most favorable solutions included traffic signal installation, construction of a frontage road, acceleration / deceleration lanes and providing right hand turns for entrance / exits.

7.2.4 Mariner's Cove

The Mariner's Cove meeting was the final pubic information meeting held for the project on Wednesday, August 12, 2015 from 6:30 P.M. to 8:30 P.M. at the Hilton Head Public Service District Community Meeting Room. Mariner's Cove is a 40-unit condominium community, townhouses and flats and is situated opposite from Blue Heron Point on Hog Island. Mariner's Cove also shares the same US 278 access as the residents of Blue Heron Point. In attendance at this meeting were 13 members of the community. Alternative 2 was preferred by most of the residents in attendance, but others were concerned with safety aspects of the design. Regarding Alternative 1, concerns were voiced about wetland disturbance and environmental impacts, as well as the widening of Blue Heron Point Road that would be required in order to bring the road up to standards and to facilitate large vehicles.

The Mariner's Cove community submitted 15 survey responses (14 online and 1 hard copy). The results included a mix of opinions on gap times and traffic visibility with most responses of "somewhat acceptable". Traffic speeds along US 278 and the bridges were considered "not acceptable" by a majority of respondents. The majority of the respondents indicated that left-turning movements and traffic movements were the most difficult during the weekday morning peak, followed closely by the weekday afternoon and weekend afternoon peaks (nearly tied). Nearly all of the respondents overwhelming disapproved of closing median cross-overs, but those who approved were willing to travel up to a half-mile to make a right-hand turn. Safety was the important issue when evaluating a solution, closely followed by turning movement provisions, property values, environmental stewardship and noise. The most favorable solutions included traffic signal installation, construction of a frontage road, acceleration / deceleration lanes and providing right hand turns for entrance / exits.

8 Conclusions and Recommendations

The proposed project and study area were evaluated to identify alternative solutions for the access management along US 278 on Jenkins Island and to identify potential environmental constraints and preliminary impacts that may result from the construction of transportation improvements within the project area. The existing conditions of the project area, to include existing traffic, operational and safety deficiencies, existing roadway facilities and geometry, utilities and existing environmental conditions were evaluated and serve as the basis for any proposed project improvements. Potential improvements, developed through alternative analyses, and in consideration of environmental constraints and in order to provide a safe and efficient access to local communities with minimum disruption to “through” traffic on US 278; the following feasible alternatives have been identified:

- Alternative 1: Right-in Right-Out with Frontage Road,
- Alternative 2A: Modified Super Street with Signals (Recommended Alternative).

Existing traffic conditions, safety and LOS (segmental and intersection) are deficient and would continue to deteriorate without prudent transportation improvements. Both alternatives evaluated in this report provide comparable improvements to traffic conditions, safety and LOS, with differing impacts to the adjacent landscape and environment. Through a comparative analysis of safety, operations, cost, rights-of-way impacts and environmental impacts, Alternative 2A has been concluded as the Recommended Alternative.

Alternative 1 studied in this report provides for the overall safest alternative as all median cross-overs and left turn movements would be prohibited, but when compared to other advantages and disadvantages, Alternative 2A provides for adequate safety as all left turns from side roads are to be prohibited while the left turn from US 278 at Blue Heron Point Rd. and the U-turns will be traffic signal-protected movements. Right turn movements from the side roads, under Alternative 2A, shall also gain a clear gap in US 278 traffic during the median U-turn signal green time, attributing to the increased safety of this alternative.

In order to mitigate rear-end and run-off-the-road crashes as well as increased general safety, the following improvements are proposed:

- Reducing the speed limit along the corridor to 45 mile per hour, along with increased traffic enforcement and / or increased presence of officers along the corridor to ensure that the posted speed limit is obeyed, and;
- Providing adequate turn lane storage lengths, acceleration/deceleration lanes and taper lengths for the study area intersections.
- The widening of the shoulder along the corridor and installation of rumble strips.
- Provide adequate sight distance by clearing roadside obstacles and vegetation within necessary sight lines.

Both alternatives provide for similar level of service operations and capacity with Alternative 1 providing the best. Alternative 2A has a reduction in level of service for US 278 due to the proposed traffic signal installation and the periods of stopped traffic. Although the level of service is affected, no significant adverse impacts to the through traffic along US 278 would be produced because the majority of green time within the traffic signal cycle will be allocated to the through movements.

Additional improvements to the project area, as determined through initial stakeholder scoping and public involvement with affected communities, include the following recommendations:

- Excavations necessary to uncover and clean existing, dual 60” reinforced pipe culverts, and / or determine a more efficient and economical way to restore the tidal cross-flow between Hog Island and Jenkins Island. It is recommended that future design efforts evaluate the hydraulic conditions, feasibility, construction techniques, traffic control and permitting issues that would be required to improve this issue.
- Evaluate, design and construct a dedicated bicycle / pedestrian pathway along US 278, from the termini of the bridge to existing facilities across the causeway on Hilton Head Island.

Alternative 2A has fewer environmental impacts as compared to Alternative 1. No wetland or threatened / endangered species impacts (although further investigations of Biological Assessments is needed), or other major environmental impacts are anticipated. The alternative would require rights-of-way, although a zero-cost is assumed for the acquisition of all Town of Hilton Head Island and other government-owned tracts, as well as Windmilll Harbour P.O.A. properties.

Cost comparisons reflect that Alternative 2A would cost approximately less than half of the probable cost of Alternative 1 while providing nearly identical operational and safety benefits. Beaufort County’s LRTP (Long-Range Transportation Plan) has identified the widening of US 278 within the Jenkins Island project area to six lanes as a future, necessary project to keep pace with ever-growing traffic volumes. Alternative 2A proposes to construct a third lane in the eastbound and westbound directions within the project area in order to maximize the operation and capacity along US 278 with the installation of traffic signals. Therefore, the future widening of US 278 could be accomplished under the construction of this project.

Providing additional credence to Alternative 2A is the improvement project proposed by The Town of Hilton Head Island for the intersection of US 278 at Squire Pope Road. The Town’s project is currently in the preliminary design stage and proposes to widen US 278 in the westbound direction from Squire Pope Rd. to Jenkins Island Rd., thus providing a third travel lane in this direction; therefore, the improvements proposed for Alternative 2A would tie-in directly with the improvements proposed by the Town. Alternative 2A, although not directly addressed in this report, should therefore consider extending the third eastbound lane to Squire Pope Rd. in order to provide a full, six-lane section from the bridge termini to the existing six-lane section at Squire Pope Rd. Consequently, these additional improvements would incur additional project costs associated with construction, rights-of-way and potential wetland impacts and permitting costs associated with widening along the causeway.

Alternative 2A, as proposed, is the lower-cost, near-term alternative solution with the least amount of environmental constraints and impacts that improves the operational efficiency along US 278 while also providing safe access to the local communities with minimum disruption to through traffic along US 278.

8.1 Cost Analysis

Estimates of probable cost have been conducted for Alternative 1 and Alternative 2A based on the conceptual designs and engineering assumptions. The estimates and cost comparisons are shown in the table below with detailed cost estimate spreadsheets provided in Appendix I of this document.

Table 8-1. Cost Analysis

Alternative	Probable Cost
Alternative 1: Right-Right-Out with Frontage Road	$13.9 million
Alternative 2A: Modified Super-Street w/ Traffic Signals	$7.4 million

Note: Above estimates include roadway construction totals, CE&I, engineering, utility relocations and rights-of-way costs. Costs for wetland mitigation are not included.

Unit prices were established by evaluating the bid tabulations for the most recent project(s) in Beaufort County, specifically the US 278 at Windmill Harbour intersection improvement project (SCDOT Project ID 0041808). All major quantities were calculated to include pavement, curb and gutter, concrete islands, traffic signals (where appropriate) and pavement removals. Upon evaluation of the recent bid tabulation, it was determined that the estimated quantities accounted for approximately 45% of the roadway-specific construction sub-total. Additionally, necessary costs for CE&I, professional engineering and utility relocations were included based on percentages of total roadway construction cost and typical of similar projects. Rights-of-way acquisition costs were also included in the total by utilizing available costs comparable to the project area and in coordination with Beaufort County. Contingencies were added to the subtotal of roadway construction and miscellaneous costs to determine the Total Estimated Construction Cost. This total was then adjusted to reflect the cost in the construction year by assuming a 4% yearly inflation. The estimates do not include costs associated with environmental permitting or any potential wetland mitigation deemed necessary, specifically for Alternative 1.

The pavement design assumed for these conceptual designs and estimates was reflective of existing SCDOT plans (Project ID 0041808) of current construction within the project area. Rights-of-way costs for each alternative were based upon the square footage of new rights-of-way to be obtained, assumed conservative contingencies and acquisition costs per parcel (legal, rights-of-way agent fees, deeds, etc.). Rights-of-way to be obtained from the Town of Hilton Head Island and other government-owned properties, as well as Windmill Harbour P.O.A. tracts, are not included in the estimates as it is assumed dedicated rights-of-way could be obtained.

8.2 Availability of Funding/Funding Recommendations

At the time of this study, there are no existing funding sources available to implement any proposed project improvements. It is recommended that funding sources be researched and evaluated specific to applicable federal funds and / or grants that may be available for construction of the project. The project is no longer on the STIP (Statewide Transportation Improvement Program), therefore, no funding is directly allocated from the state, but there may be minimal funds available though the MPO (Metropolitan Planning Organization) and LATS (Lowcountry Area Transportation Study), although neither of these sources could provide funding for the current construction costs. A local-option sales tax renewal for transportation improvements may be the most viable and cost-assured avenue of potential funding for the project; such a program would be a renewal of previous sales tax proposals initiated by Beaufort County in the past to improve transportation facilities within the county.

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A

Appendix A - Traffic Counts and Modeling

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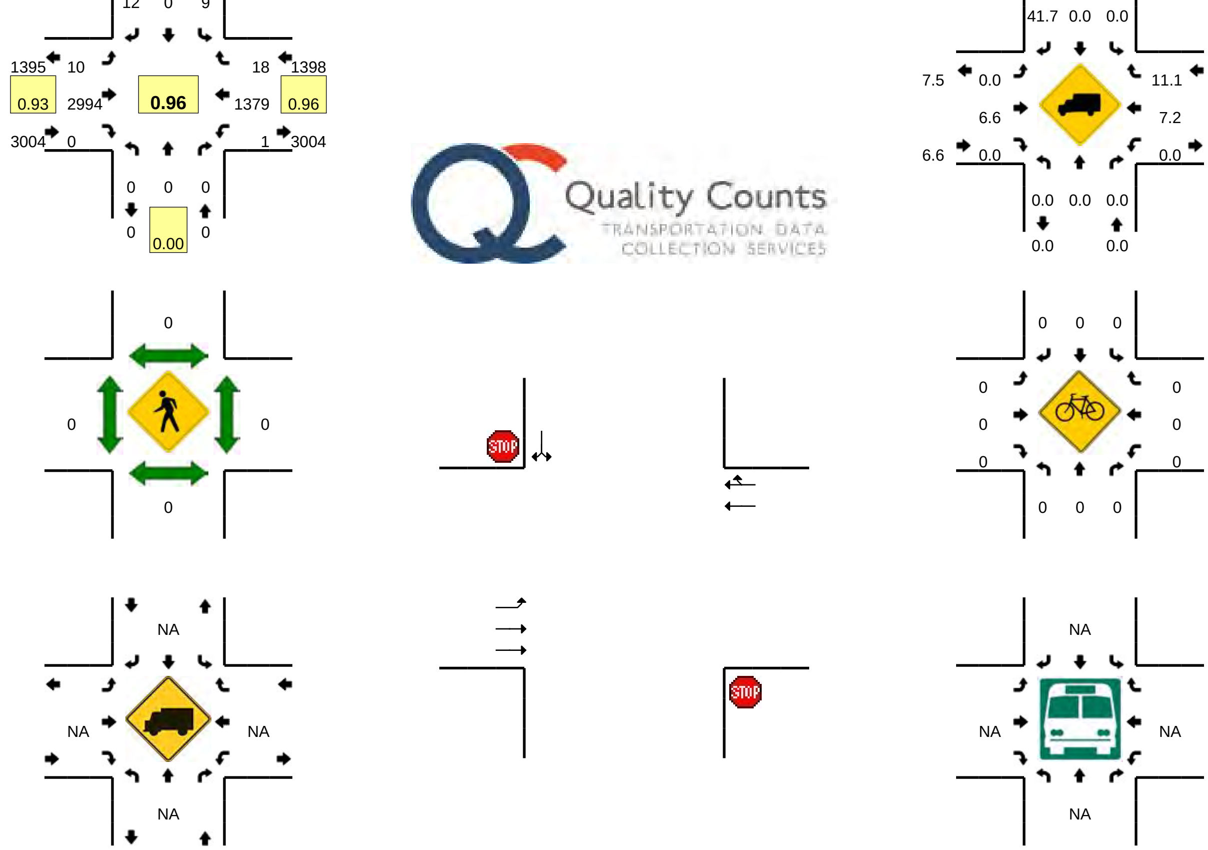
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: Jenkins Rd -- US 278 | **QC JOB #:** 13333501

CITY/STATE: Hilton Head Island, SC | **DATE:** Tue, Jun 16 2015

Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



15-Min Count Period Beginning At	Jenkins Rd (Northbound) Left	Thru	Right	U	Jenkins Rd (Southbound) Left	Thru	Right	U	US 278 (Eastbound) Left	Thru	Right	U	US 278 (Westbound) Left	Thru	Right	U	Total	Hourly Totals
7:00 AM	0	0	0	0	1	0	0	0	2	540	0	1	0	234	1	0	779	
7:15 AM	0	0	0	0	2	0	1	0	2	669	0	1	0	305	3	0	983	
7:30 AM	0	0	0	0	4	0	2	0	0	807	0	2	0	329	3	0	1147	
7:45 AM	0	0	0	0	2	0	2	0	2	738	0	0	0	340	7	1	1092	4001
8:00 AM	0	0	0	0	1	0	5	0	1	762	0	2	0	321	3	0	1095	4317
8:15 AM	0	0	0	0	2	0	3	0	3	687	0	0	0	389	5	0	1089	4423
8:30 AM	0	0	0	0	2	0	3	0	4	662	0	4	0	320	0	1	996	4272
8:45 AM	0	0	0	0	3	0	2	0	0	729	0	2	0	405	6	1	1148	4328
9:00 AM	0	0	0	0	2	0	4	0	0	493	0	1	0	400	7	0	907	4140
9:15 AM	0	0	0	0	1	0	2	0	2	500	0	0	0	381	3	1	890	3941
9:30 AM	0	0	0	0	2	0	8	0	5	533	0	3	0	406	0	1	958	3903
9:45 AM	0	0	0	0	5	0	1	0	4	535	0	0	0	425	5	2	977	3732
10:00 AM	0	0	0	0	6	0	9	0	1	442	0	0	0	434	7	0	899	3724
10:15 AM	0	0	0	0	3	0	5	0	3	439	0	0	0	427	2	1	880	3714
10:30 AM	0	0	0	0	6	0	4	0	5	487	0	1	0	409	3	0	915	3671
10:45 AM	0	0	0	0	9	0	8	0	1	433	0	2	0	445	6	0	904	3598

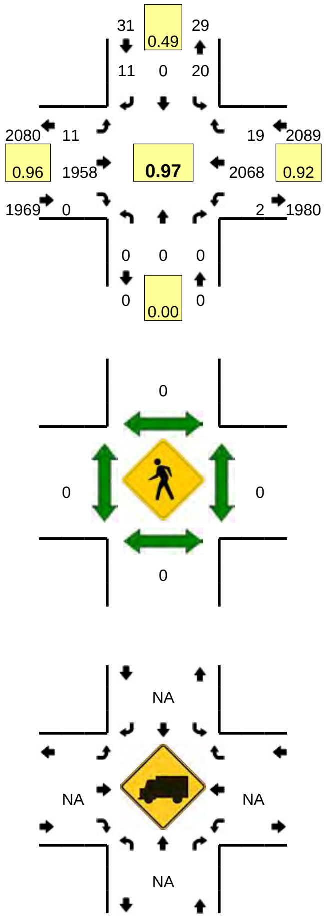
Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	0	0	0	0	16	0	8	0	0	3228	0	8	0	1316	12	0	4588
Heavy Trucks	0	0	0		0	0	8		0	204	0		0	76	0		288
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

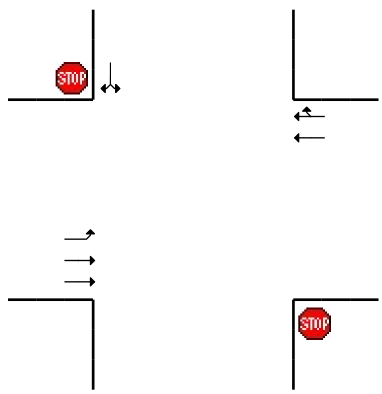
Comments:

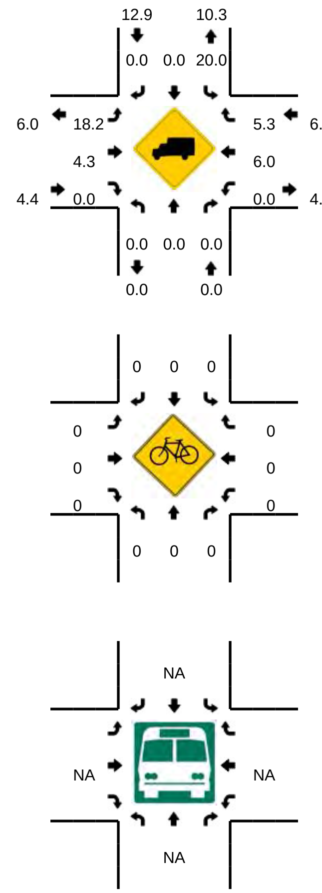
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: Jenkins Rd -- US 278 **QC JOB #:** 13333502
CITY/STATE: Hilton Head Island, SC **DATE:** Tue, Jun 16 2015

Peak-Hour: 2:00 PM -- 3:00 PM
Peak 15-Min: 2:45 PM -- 3:00 PM







15-Min Count Period Beginning At	Jenkins Rd (Northbound) Left	Thru	Right	U	Jenkins Rd (Southbound) Left	Thru	Right	U	US 278 (Eastbound) Left	Thru	Right	U	US 278 (Westbound) Left	Thru	Right	U	Total	Hourly Totals
11:00 AM	0	0	0	0	14	0	8	0	3	424	0	0	0	362	2	0	813	
11:15 AM	0	0	0	0	4	0	2	0	3	472	0	0	0	442	3	0	926	
11:30 AM	0	0	0	0	7	0	2	0	3	453	0	0	0	515	3	0	983	
11:45 AM	0	0	0	0	6	0	0	0	3	483	0	4	0	524	4	1	1025	3747
12:00 PM	0	0	0	0	3	0	3	0	1	432	0	1	0	466	3	2	911	3845
12:15 PM	0	0	0	0	2	0	3	0	5	426	0	1	0	518	5	1	961	3880
12:30 PM	0	0	0	0	4	0	2	0	5	466	0	1	0	486	8	0	972	3869
12:45 PM	0	0	0	0	1	0	1	0	2	463	0	1	0	441	4	2	915	3759
1:00 PM	0	0	0	0	4	0	2	0	1	442	0	0	0	461	4	0	914	3762
1:15 PM	0	0	0	0	7	0	2	0	2	482	0	1	0	471	5	1	971	3772
1:30 PM	0	0	0	0	3	0	1	0	1	477	0	0	0	498	4	1	985	3785
1:45 PM	0	0	0	0	4	0	0	0	3	451	0	1	0	486	4	0	949	3819
2:00 PM	0	0	0	0	7	0	2	0	1	475	0	0	0	490	5	0	980	3885
2:15 PM	0	0	0	0	4	0	6	0	4	509	0	1	0	497	6	1	1028	3942
2:30 PM	0	0	0	0	5	0	1	0	1	501	0	0	0	519	1	1	1029	3986
2:45 PM	0	0	0	0	4	0	2	0	4	473	0	0	0	562	7	0	1052	4089

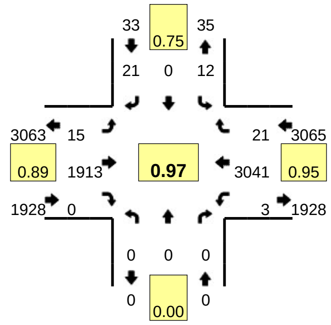
Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	0	0	0	0	16	0	8	0	16	1892	0	0	0	2248	28	0	4208
Heavy Trucks	0	0	0		0	0	0		0	72	0		0	164	4		240
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

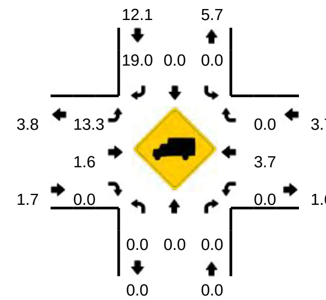
Report generated on 6/24/2015 6:41 AM SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

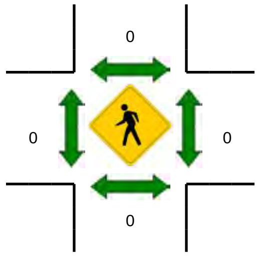
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

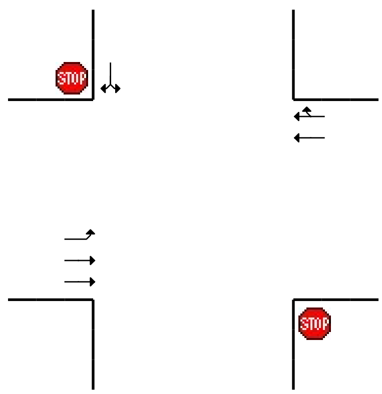
LOCATION: Jenkins Rd -- US 278 | **QC JOB #:** 13333503
CITY/STATE: Hilton Head Island, SC | **DATE:** Tue, Jun 16 2015

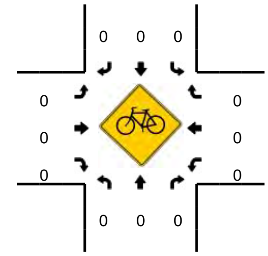


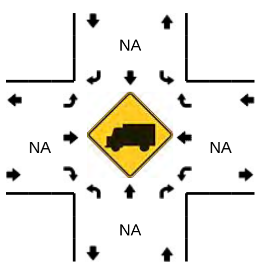
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

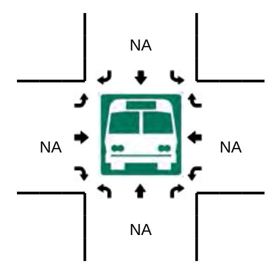












15-Min Count Period Beginning At	Jenkins Rd (Northbound) Left	Thru	Right	U	Jenkins Rd (Southbound) Left	Thru	Right	U	US 278 (Eastbound) Left	Thru	Right	U	US 278 (Westbound) Left	Thru	Right	U	Total	Hourly Totals
3:00 PM	0	0	0	0	4	0	1	0	3	492	0	2	0	559	5	1	1067	
3:15 PM	0	0	0	0	4	0	1	0	2	464	0	1	0	655	4	0	1131	
3:30 PM	0	0	0	0	4	0	4	0	1	493	0	0	0	669	5	0	1176	
3:45 PM	0	0	0	0	6	0	5	0	1	568	0	1	0	673	5	0	1259	4633
4:00 PM	0	0	0	0	4	0	3	0	5	422	0	1	0	634	9	1	1079	4645
4:15 PM	0	0	0	0	5	0	2	0	3	449	0	0	0	671	3	0	1133	4647
4:30 PM	0	0	0	0	3	0	7	0	2	473	0	0	0	799	7	2	1293	4764
4:45 PM	0	0	0	0	7	0	5	0	4	486	0	1	0	739	4	0	1246	4751
5:00 PM	0	0	0	0	2	0	2	0	3	472	0	0	0	707	3	0	1189	4861
5:15 PM	0	0	0	0	0	0	7	0	5	482	0	0	0	796	7	1	1298	5026
5:30 PM	0	0	0	0	3	0	4	0	2	469	0	1	0	694	2	0	1175	4908
5:45 PM	0	0	0	0	3	0	2	0	8	445	0	5	0	663	9	2	1137	4799
6:00 PM	0	0	0	0	6	0	2	0	5	440	0	0	0	510	3	2	968	4578
6:15 PM	0	0	0	0	7	0	3	0	2	401	0	0	0	481	7	0	901	4181
6:30 PM	0	0	0	0	8	0	0	0	3	382	0	0	0	435	2	1	831	3837
6:45 PM	0	0	0	0	0	0	2	0	1	370	0	0	0	435	5	2	815	3515

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	0	0	0	0	0	0	28	0	20	1928	0	0	0	3184	28	4	5192
Heavy Trucks	0	0	0		0	0	0		4	16	0		0	108	0		128
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/24/2015 6:41 AM

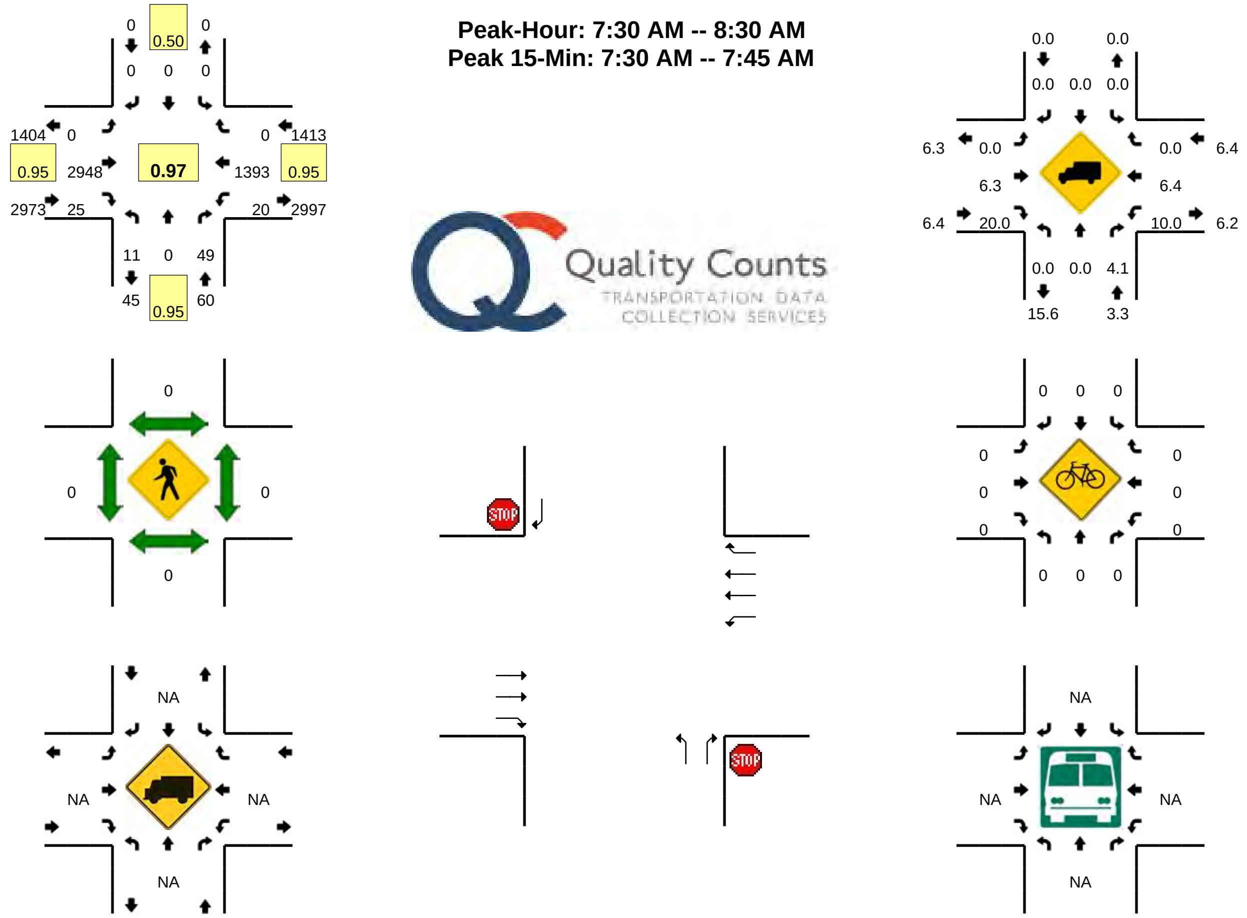
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: Gateway Dr/Crosstree Dr -- US 278
CITY/STATE: Hilton Head Island, SC

QC JOB #: 13333504
DATE: Tue, Jun 16 2015

Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



15-Min Count Period Beginning At	Gateway Dr/Crosstree Dr (Northbound) Left	Thru	Right	U	Gateway Dr/Crosstree Dr (Southbound) Left	Thru	Right	U	US 278 (Eastbound) Left	Thru	Right	U	US 278 (Westbound) Left	Thru	Right	U	Total	Hourly Totals
7:00 AM	1	0	5	0	0	0	0	0	0	527	3	0	3	232	1	0	772	
7:15 AM	4	0	9	0	0	0	1	0	0	695	2	0	2	308	0	0	1021	
7:30 AM	3	0	10	0	0	0	0	0	0	786	4	0	5	333	0	0	1141	
7:45 AM	3	0	11	0	0	0	0	0	0	747	6	0	4	342	0	0	1113	4047
8:00 AM	3	0	12	0	0	0	0	0	0	758	5	0	5	329	0	0	1112	4387
8:15 AM	2	0	16	0	0	0	0	0	0	657	10	0	6	389	0	0	1080	4446
8:30 AM	9	0	11	0	0	0	0	0	0	669	11	0	8	335	0	0	1043	4348
8:45 AM	5	0	17	0	0	0	0	0	0	713	16	0	11	390	0	0	1152	4387
9:00 AM	11	0	15	0	0	0	0	0	0	476	13	0	14	399	0	0	928	4203
9:15 AM	6	0	18	0	0	0	0	0	0	499	10	0	6	388	1	0	928	4051
9:30 AM	10	0	14	0	0	0	1	0	0	533	11	0	9	395	0	0	973	3981
9:45 AM	9	0	16	0	0	0	0	0	0	521	8	0	14	439	0	0	1007	3836
10:00 AM	6	0	11	0	0	0	1	0	0	434	10	0	15	425	2	0	904	3812
10:15 AM	6	0	15	0	0	0	0	0	0	442	8	0	8	428	0	0	907	3791
10:30 AM	8	0	13	0	0	0	0	0	0	498	6	0	14	424	0	0	963	3781
10:45 AM	9	0	16	0	0	0	0	0	0	416	7	0	15	454	0	0	917	3691

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	12	0	40	0	0	0	0	0	0	3144	16	0	20	1332	0	0	4564
Heavy Trucks	0	0	0		0	0	0		0	200	8		0	76	0		284
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

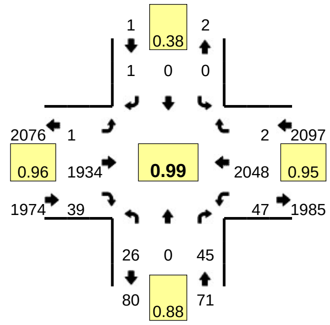
Comments:

Report generated on 6/24/2015 6:41 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

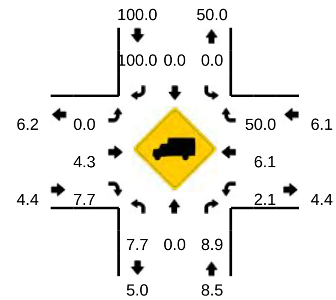
Type of peak hour being reported: Intersection Peak — Method for determining peak hour: Total Entering Volume

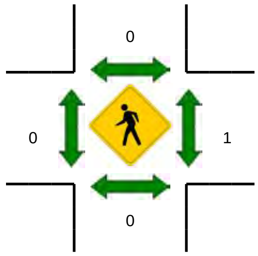
LOCATION: Gateway Dr/Crosstree Dr -- US 278 — **QC JOB #:** 13333505

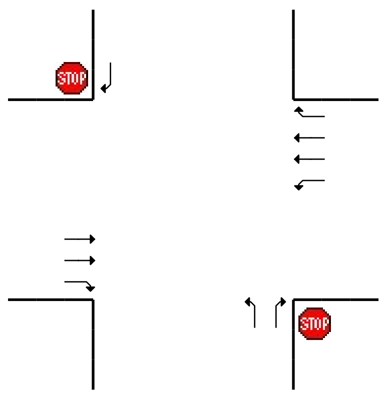
CITY/STATE: Hilton Head Island, SC — **DATE:** Tue, Jun 16 2015

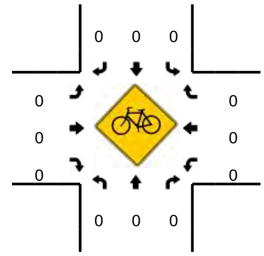


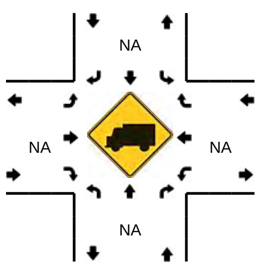
Peak-Hour: 2:00 PM -- 3:00 PM
Peak 15-Min: 2:15 PM -- 2:30 PM

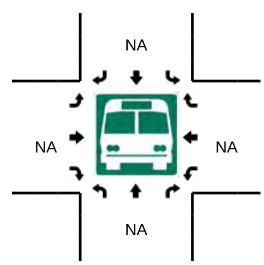












15-Min Count Period Beginning At	Gateway Dr/Crosstree Dr (Northbound) Left	Thru	Right	U	Gateway Dr/Crosstree Dr (Southbound) Left	Thru	Right	U	US 278 (Eastbound) Left	Thru	Right	U	US 278 (Westbound) Left	Thru	Right	U	Total	Hourly Totals
11:00 AM	5	0	21	0	0	0	0	0	0	409	9	0	10	376	1	0	831	
11:15 AM	10	0	20	0	0	0	2	0	0	462	5	0	7	421	1	0	928	
11:30 AM	7	0	17	0	0	0	1	0	0	444	8	0	9	528	0	0	1014	
11:45 AM	4	0	22	0	0	0	0	0	0	453	6	0	12	517	0	0	1014	3787
12:00 PM	11	0	14	0	0	0	0	0	0	441	8	0	13	467	0	0	954	3910
12:15 PM	9	0	12	0	0	0	0	0	0	417	5	0	10	532	0	0	985	3967
12:30 PM	3	0	19	0	0	0	0	0	0	462	7	0	12	485	0	1	989	3942
12:45 PM	9	0	14	0	0	0	0	0	0	458	12	0	11	447	0	0	951	3879
1:00 PM	9	0	13	0	0	0	0	0	0	422	8	0	15	453	0	0	920	3845
1:15 PM	4	0	17	0	0	0	0	0	0	487	9	0	6	478	0	1	1002	3862
1:30 PM	8	0	16	0	0	0	0	0	0	454	2	0	15	476	0	1	972	3845
1:45 PM	8	0	9	0	0	0	0	0	0	447	3	0	12	491	0	0	970	3864
2:00 PM	5	0	12	0	0	0	0	0	0	468	11	0	8	489	1	1	995	3939
2:15 PM	10	0	11	0	0	0	1	0	0	503	10	0	12	501	0	3	1051	3988
2:30 PM	5	0	12	0	0	0	0	0	0	494	6	1	9	523	1	0	1051	4067
2:45 PM	6	0	10	0	0	0	0	0	0	469	12	0	12	535	0	2	1046	4143

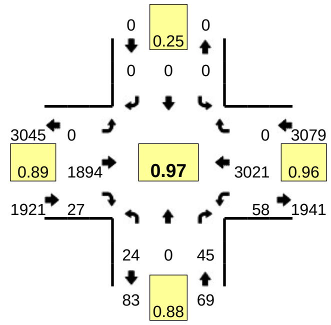
Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	40	0	44	0	0	0	4	0	0	2012	40	0	48	2004	0	12	4204
Heavy Trucks	4	0	0		0	0	4		0	92	4		0	104	0		208
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

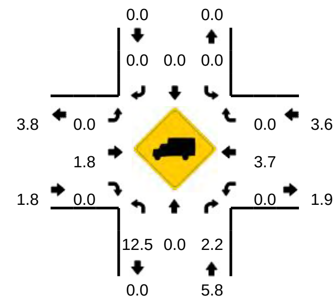
Report generated on 6/24/2015 6:41 AM — SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

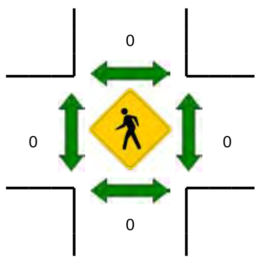
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

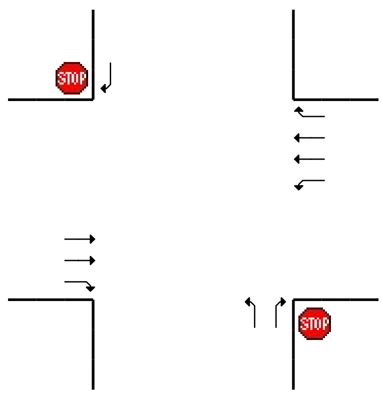
LOCATION: Gateway Dr/Crosstree Dr -- US 278 **QC JOB #:** 13333506
CITY/STATE: Hilton Head Island, SC **DATE:** Tue, Jun 16 2015

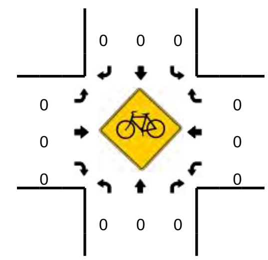


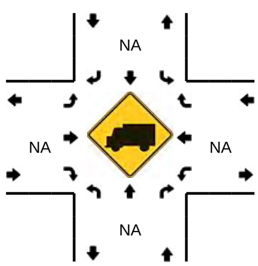
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

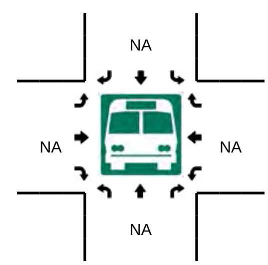












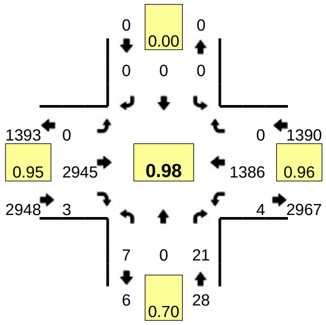
15-Min Count Period Beginning At	Gateway Dr/Crosstree Dr (Northbound) Left	Thru	Right	U	Gateway Dr/Crosstree Dr (Southbound) Left	Thru	Right	U	US 278 (Eastbound) Left	Thru	Right	U	US 278 (Westbound) Left	Thru	Right	U	Total	Hourly Totals
3:00 PM	6	0	12	0	0	0	1	0	0	476	11	0	12	552	0	1	1071	
3:15 PM	7	0	13	0	0	0	0	0	0	445	5	0	15	640	0	0	1125	
3:30 PM	7	0	15	0	0	0	0	0	0	485	8	0	15	662	0	0	1192	
3:45 PM	3	0	14	0	0	0	0	0	0	543	16	0	15	671	0	1	1263	4651
4:00 PM	5	0	11	0	0	0	0	0	0	413	3	0	12	639	0	1	1084	4664
4:15 PM	11	0	9	0	0	0	0	0	0	456	2	0	12	665	0	0	1155	4694
4:30 PM	5	0	14	0	0	0	0	0	0	469	11	0	13	780	0	1	1293	4795
4:45 PM	6	0	8	0	0	0	0	0	0	474	2	0	18	749	0	0	1257	4789
5:00 PM	9	0	14	0	0	0	0	0	0	464	8	0	17	697	0	0	1209	4914
5:15 PM	4	0	9	0	0	0	0	0	0	487	6	0	8	795	0	1	1310	5069
5:30 PM	2	0	8	0	0	0	0	0	0	458	11	0	15	712	0	0	1206	4982
5:45 PM	6	0	12	0	0	0	0	0	0	443	8	0	14	708	0	1	1192	4917
6:00 PM	4	0	10	0	0	0	0	0	0	454	6	0	6	502	0	0	982	4690
6:15 PM	5	0	8	0	0	0	0	0	0	392	3	0	14	477	0	1	900	4280
6:30 PM	4	0	5	0	0	0	0	0	0	366	7	0	18	422	0	0	822	3896
6:45 PM	4	0	7	0	0	0	0	0	0	367	5	0	6	436	0	0	825	3529

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	16	0	36	0	0	0	0	0	0	1948	24	0	32	3180	0	4	5240
Heavy Trucks	4	0	0		0	0	0		0	28	0		0	108	0		140
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

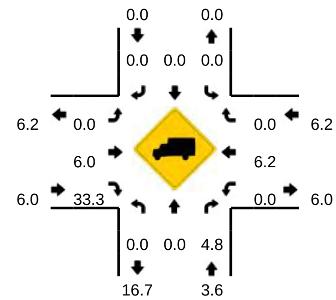
Comments:

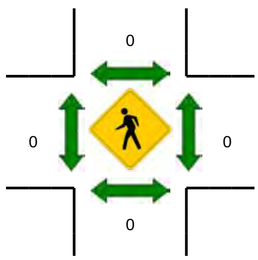
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

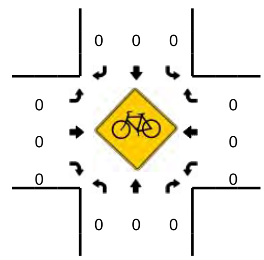
LOCATION: Blue Heron Point Rd -- US 278 | **QC JOB #:** 13333507
CITY/STATE: Hilton Head Island, SC | **DATE:** Tue, Jun 16 2015

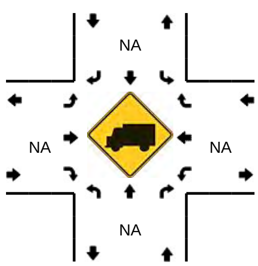


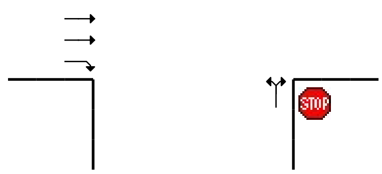
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

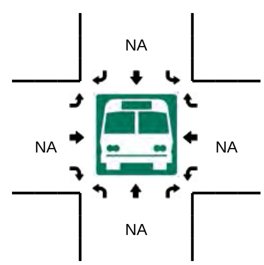












15-Min Count Period Beginning At	Blue Heron Point Rd (Northbound) Left	Thru	Right	U	Blue Heron Point Rd (Southbound) Left	Thru	Right	U	US 278 (Eastbound) Left	Thru	Right	U	US 278 (Westbound) Left	Thru	Right	U	Total	Hourly Totals
7:00 AM	0	0	1	0	0	0	0	0	0	514	2	0	0	228	0	0	745	
7:15 AM	0	0	4	0	0	0	0	0	0	670	0	0	0	320	0	0	994	
7:30 AM	1	0	8	0	0	0	0	0	0	779	0	0	0	328	0	0	1116	
7:45 AM	2	0	4	0	0	0	0	0	0	770	0	0	0	339	0	0	1115	3970
8:00 AM	1	0	2	0	0	0	0	0	0	751	2	0	1	332	0	0	1089	4314
8:15 AM	3	0	7	0	0	0	0	0	0	645	1	0	2	387	0	1	1046	4366
8:30 AM	2	0	4	0	0	0	0	0	0	670	2	0	0	344	0	0	1022	4272
8:45 AM	0	0	6	0	0	0	0	0	0	721	0	0	0	397	0	2	1126	4283
9:00 AM	1	0	3	0	0	0	0	0	0	482	2	0	2	405	0	0	895	4089
9:15 AM	1	0	4	0	0	0	0	0	0	515	3	0	3	396	0	2	924	3967
9:30 AM	2	0	4	0	0	0	0	0	0	544	0	0	1	397	0	2	950	3895
9:45 AM	1	0	1	0	0	0	0	0	0	549	0	1	4	445	0	1	1002	3771
10:00 AM	0	0	4	0	0	0	0	0	0	439	4	1	3	418	0	1	870	3746
10:15 AM	1	0	4	0	0	0	0	0	0	472	4	0	2	421	0	0	904	3726
10:30 AM	3	0	2	0	0	0	0	0	0	511	1	0	5	434	0	0	956	3732
10:45 AM	3	0	7	0	0	0	0	0	0	430	4	0	0	448	0	0	892	3622

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	4	0	32	0	0	0	0	0	0	3116	0	0	0	1312	0	0	4464
Heavy Trucks	0	0	4		0	0	0		0	208	0		0	72	0		284
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

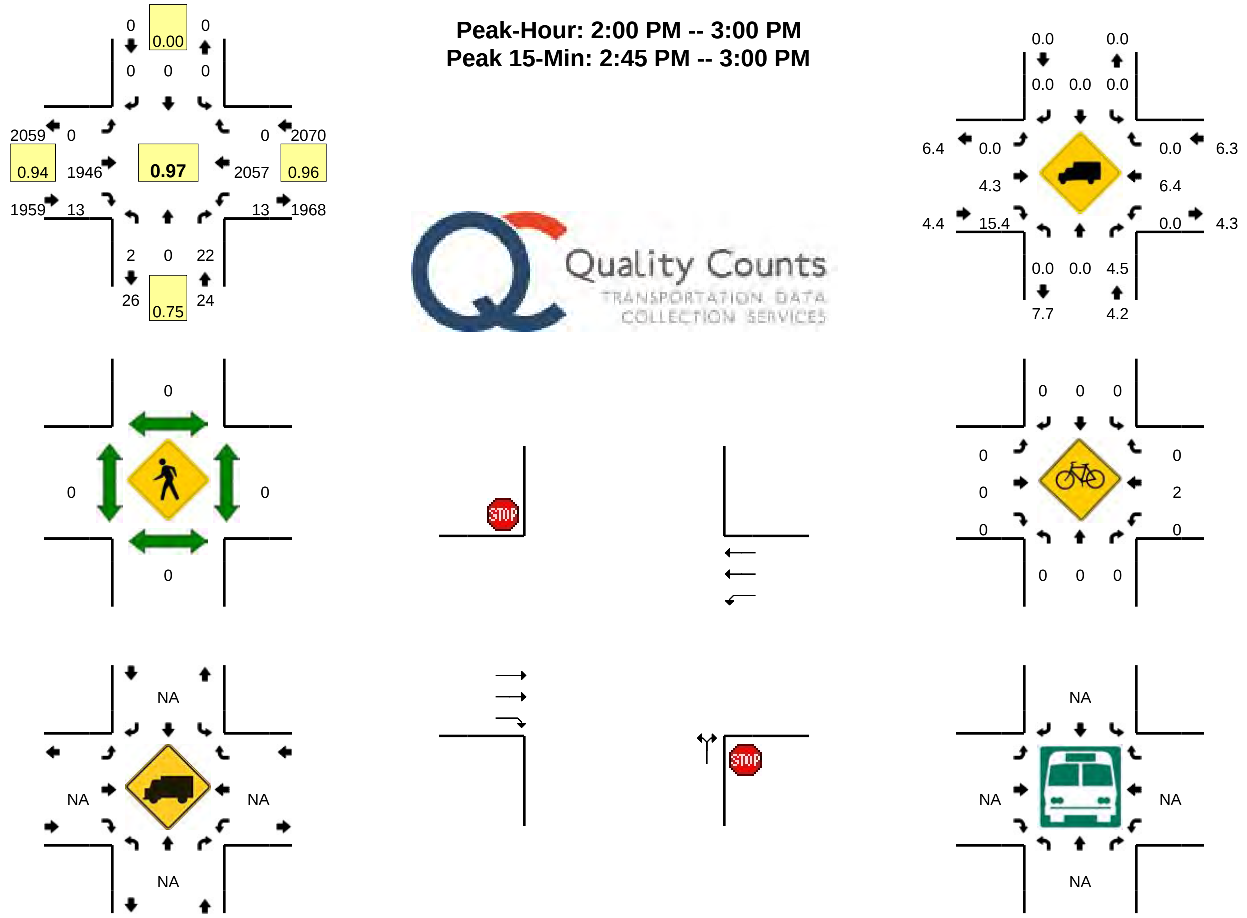
Comments:

Report generated on 6/24/2015 6:41 AM

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: Blue Heron Point Rd -- US 278 **QC JOB #:** 13333508
CITY/STATE: Hilton Head Island, SC **DATE:** Tue, Jun 16 2015

Peak-Hour: 2:00 PM -- 3:00 PM
Peak 15-Min: 2:45 PM -- 3:00 PM



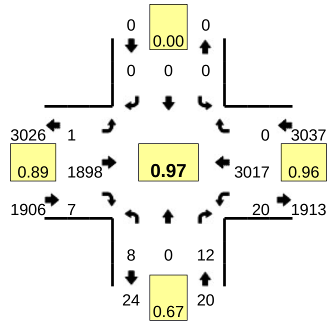
15-Min Count Period Beginning At	Blue Heron Point Rd (Northbound) Left	Thru	Right	U	Blue Heron Point Rd (Southbound) Left	Thru	Right	U	US 278 (Eastbound) Left	Thru	Right	U	US 278 (Westbound) Left	Thru	Right	U	Total	Hourly Totals
11:00 AM	2	0	3	0	0	0	0	0	0	416	1	0	6	376	0	0	804	
11:15 AM	1	0	4	0	0	0	0	0	0	460	1	0	3	429	0	2	900	
11:30 AM	1	0	3	0	0	0	0	0	0	475	1	0	3	526	0	0	1009	
11:45 AM	4	0	0	0	0	0	0	0	0	480	1	0	3	512	0	1	1001	3714
12:00 PM	2	0	6	0	0	0	0	0	0	446	3	0	1	463	0	1	922	3832
12:15 PM	0	0	3	0	0	0	0	0	0	432	1	0	2	544	0	0	982	3914
12:30 PM	1	0	4	0	0	0	0	0	0	471	2	0	4	476	0	0	958	3863
12:45 PM	2	0	1	0	0	0	0	0	0	490	2	0	2	456	0	0	953	3815
1:00 PM	0	0	1	0	0	0	0	0	0	455	3	0	2	456	0	1	918	3811
1:15 PM	0	0	1	0	0	0	0	0	0	519	4	0	2	483	0	0	1009	3838
1:30 PM	1	0	4	0	0	0	0	0	0	459	0	0	2	483	0	0	949	3829
1:45 PM	1	0	2	0	0	0	0	0	0	446	2	0	1	490	0	0	942	3818
2:00 PM	0	0	6	0	0	0	0	0	0	447	2	0	4	488	0	0	947	3847
2:15 PM	1	0	7	0	0	0	0	0	0	518	2	0	3	511	0	0	1042	3880
2:30 PM	0	0	5	0	0	0	0	0	0	485	5	0	5	521	0	0	1021	3952
2:45 PM	1	0	4	0	0	0	0	0	0	496	4	0	1	537	0	0	1043	4053

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	4	0	16	0	0	0	0	0	0	1984	16	0	4	2148	0	0	4172
Heavy Trucks	0	0	0		0	0	0		0	76	0		0	168	0		244
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

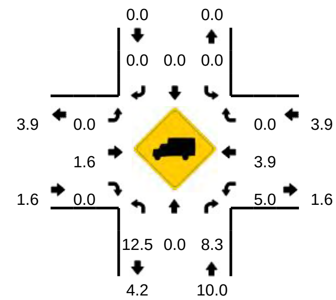
Comments:

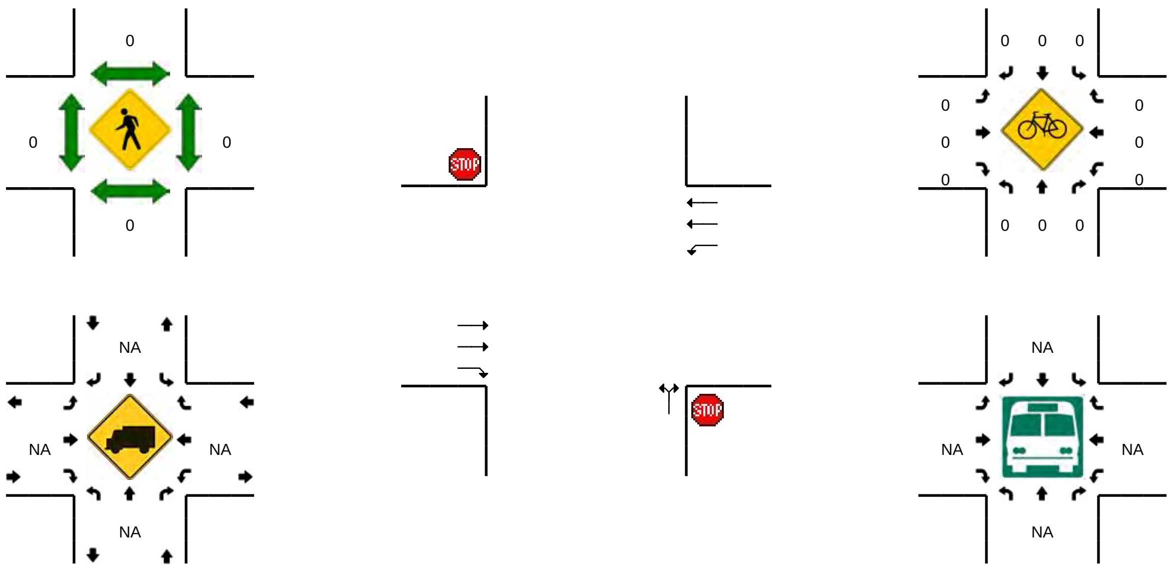
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: Blue Heron Point Rd -- US 278 | **QC JOB #:** 13333509
CITY/STATE: Hilton Head Island, SC | **DATE:** Tue, Jun 16 2015



Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:15 PM -- 5:30 PM





15-Min Count Period Beginning At	Blue Heron Point Rd (Northbound) Left	Thru	Right	U	Blue Heron Point Rd (Southbound) Left	Thru	Right	U	US 278 (Eastbound) Left	Thru	Right	U	US 278 (Westbound) Left	Thru	Right	U	Total	Hourly Totals
3:00 PM	2	0	5	0	0	0	0	0	0	473	0	0	1	559	0	0	1040	
3:15 PM	0	0	2	0	0	0	0	0	0	485	2	0	5	643	0	1	1138	
3:30 PM	1	0	5	0	0	0	0	0	0	506	3	0	4	646	0	0	1165	
3:45 PM	0	0	3	0	0	0	0	0	0	574	1	0	2	668	0	0	1248	4591
4:00 PM	1	0	1	0	0	0	0	0	0	433	2	0	2	638	0	0	1077	4628
4:15 PM	0	0	0	0	0	0	0	0	0	496	0	0	3	660	0	0	1159	4649
4:30 PM	2	0	3	0	0	0	0	0	0	470	3	0	11	776	0	2	1267	4751
4:45 PM	1	0	4	0	0	0	0	0	0	459	0	0	2	729	0	0	1195	4698
5:00 PM	3	0	2	0	0	0	0	0	0	484	3	1	2	721	0	0	1216	4837
5:15 PM	2	0	3	0	0	0	0	0	0	485	1	0	2	791	0	1	1285	4963
5:30 PM	5	0	4	0	0	0	0	0	0	457	3	0	1	709	0	0	1179	4875
5:45 PM	0	0	4	0	0	0	0	0	0	456	1	0	4	689	0	0	1154	4834
6:00 PM	1	0	2	0	0	0	0	0	0	463	5	0	3	505	0	1	980	4598
6:15 PM	2	0	3	0	0	0	0	0	0	380	1	0	2	480	0	0	868	4181
6:30 PM	0	0	2	0	0	0	0	0	0	370	1	0	1	427	0	0	801	3803
6:45 PM	1	0	3	0	0	0	0	0	0	316	4	0	4	366	0	0	694	3343

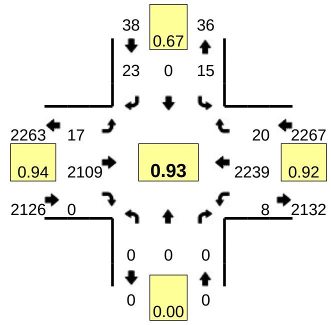
Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	8	0	12	0	0	0	0	0	0	1940	4	0	8	3164	0	4	5140
Heavy Trucks	0	0	4		0	0	0		0	20	0		4	104	0		132
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

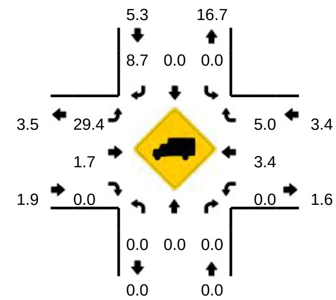
Comments:

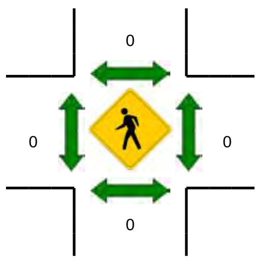
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

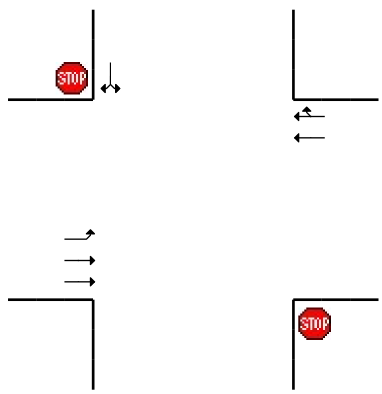
LOCATION: Jenkins Rd -- US 278 | **QC JOB #:** 13333510
CITY/STATE: Hilton Head Island, SC | **DATE:** Sat, Jun 13 2015

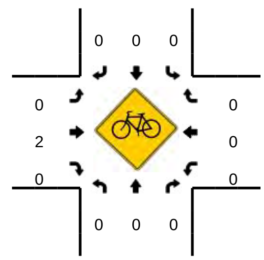
Peak-Hour: 10:45 AM -- 11:45 AM
Peak 15-Min: 11:00 AM -- 11:15 AM

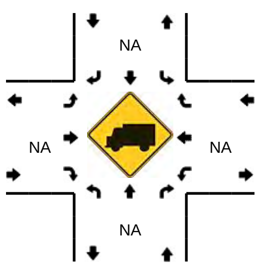


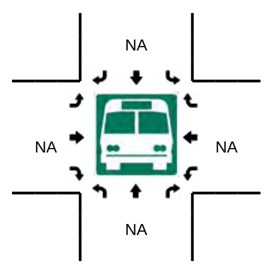












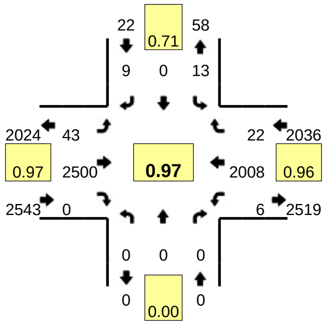
15-Min Count Period Beginning At	Jenkins Rd (Northbound) Left	Thru	Right	U	Jenkins Rd (Southbound) Left	Thru	Right	U	US 278 (Eastbound) Left	Thru	Right	U	US 278 (Westbound) Left	Thru	Right	U	Total	Hourly Totals
10:00 AM	0	0	0	0	3	0	6	0	2	480	0	0	0	687	3	0	1181	
10:15 AM	0	0	0	0	6	0	1	0	0	430	0	0	0	629	4	0	1070	
10:30 AM	0	0	0	0	4	0	4	0	4	430	0	3	0	607	5	2	1059	
10:45 AM	0	0	0	0	4	0	4	0	5	475	0	0	0	608	2	2	1100	4410
11:00 AM	0	0	0	0	1	0	5	0	4	541	0	0	0	626	6	4	1187	4416
11:15 AM	0	0	0	0	6	0	9	0	2	540	0	0	0	506	8	2	1073	4419
11:30 AM	0	0	0	0	4	0	5	0	5	553	0	1	0	499	4	0	1071	4431
11:45 AM	0	0	0	0	4	0	6	0	3	526	0	1	0	459	5	3	1007	4338
12:00 PM	0	0	0	0	2	0	4	0	3	620	0	0	0	492	5	0	1126	4277
12:15 PM	0	0	0	0	2	0	8	0	2	577	0	1	0	488	2	1	1081	4285
12:30 PM	0	0	0	0	3	0	1	0	3	531	0	1	0	499	3	2	1043	4257
12:45 PM	0	0	0	0	5	0	5	0	2	576	0	1	0	460	5	1	1055	4305
1:00 PM	0	0	0	0	3	0	2	0	0	534	0	1	0	491	2	0	1033	4212
1:15 PM	0	0	0	0	2	0	1	0	5	640	0	0	0	448	5	0	1101	4232
1:30 PM	0	0	0	0	5	0	3	0	2	625	0	4	0	433	2	3	1077	4266
1:45 PM	0	0	0	0	2	0	0	0	6	654	0	0	0	419	2	0	1083	4294

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	0	0	0	0	4	0	20	0	16	2164	0	0	0	2504	24	16	4748
Heavy Trucks	0	0	0		0	0	0		8	36	0		0	76	0		120
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	1	0		0	0	0		1
Railroad																	
Stopped Buses																	

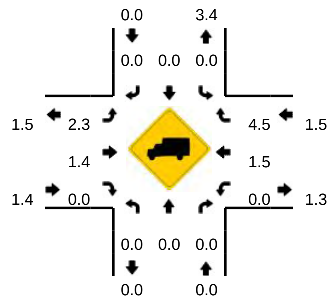
Comments:

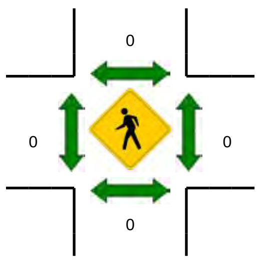
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

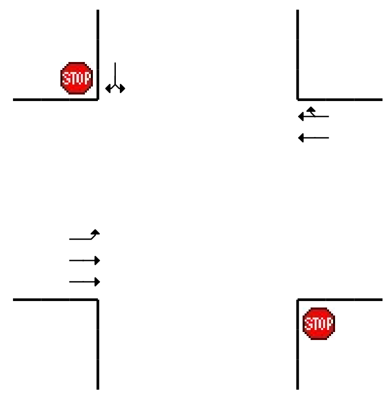
LOCATION: Jenkins Rd -- US 278 | **QC JOB #:** 13333511
CITY/STATE: Hilton Head Island, SC | **DATE:** Sat, Jun 13 2015

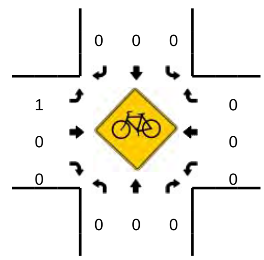


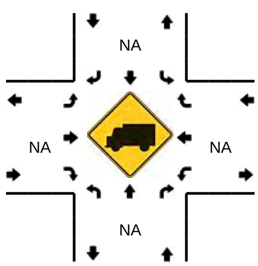
Peak-Hour: 3:45 PM -- 4:45 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

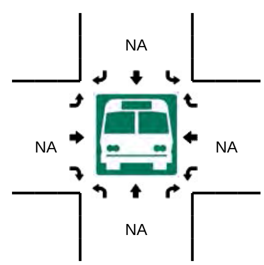












15-Min Count Period Beginning At	Jenkins Rd (Northbound) Left	Thru	Right	U	Jenkins Rd (Southbound) Left	Thru	Right	U	US 278 (Eastbound) Left	Thru	Right	U	US 278 (Westbound) Left	Thru	Right	U	Total	Hourly Totals
2:00 PM	0	0	0	0	3	0	2	0	6	654	0	0	0	444	6	1	1116	
2:15 PM	0	0	0	0	6	0	6	0	2	606	0	0	0	495	4	1	1120	
2:30 PM	0	0	0	0	5	0	5	0	2	601	0	3	0	427	6	3	1052	
2:45 PM	0	0	0	0	4	0	1	0	2	609	0	2	0	431	6	2	1057	4345
3:00 PM	0	0	0	0	5	0	2	0	2	626	0	0	0	485	3	1	1124	4353
3:15 PM	0	0	0	0	4	0	3	0	1	611	0	4	0	501	6	1	1131	4364
3:30 PM	0	0	0	0	7	0	6	0	0	603	0	0	0	476	2	1	1095	4407
3:45 PM	0	0	0	0	4	0	3	0	8	642	0	3	0	488	5	2	1155	4505
4:00 PM	0	0	0	0	1	0	1	0	7	628	0	2	0	477	6	3	1125	4506
4:15 PM	0	0	0	0	2	0	1	0	12	595	0	2	0	525	4	0	1141	4516
4:30 PM	0	0	0	0	6	0	4	0	9	635	0	0	0	518	7	1	1180	4601
4:45 PM	0	0	0	0	3	0	2	0	7	638	0	0	0	473	2	2	1127	4573
5:00 PM	0	0	0	0	1	0	3	0	4	620	0	0	0	424	3	1	1056	4504
5:15 PM	0	0	0	0	3	0	1	0	1	607	0	0	0	524	2	1	1139	4502
5:30 PM	0	0	0	0	2	0	3	0	2	620	0	1	0	415	4	0	1047	4369
5:45 PM	0	0	0	0	4	0	4	0	6	611	0	1	0	422	8	1	1057	4299

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	0	0	0	0	24	0	16	0	36	2540	0	0	0	2072	28	4	4720
Heavy Trucks	0	0	0		0	0	0		4	36	0		0	24	0		64
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

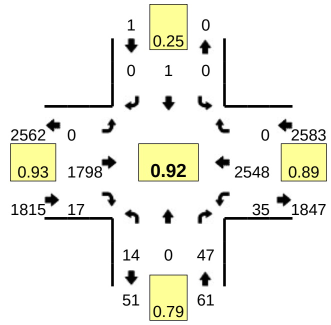
Comments:

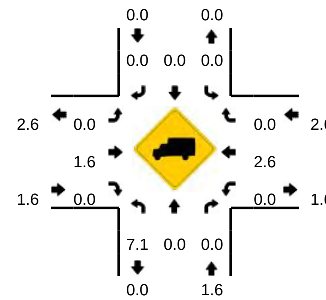
Report generated on 6/24/2015 6:41 AM

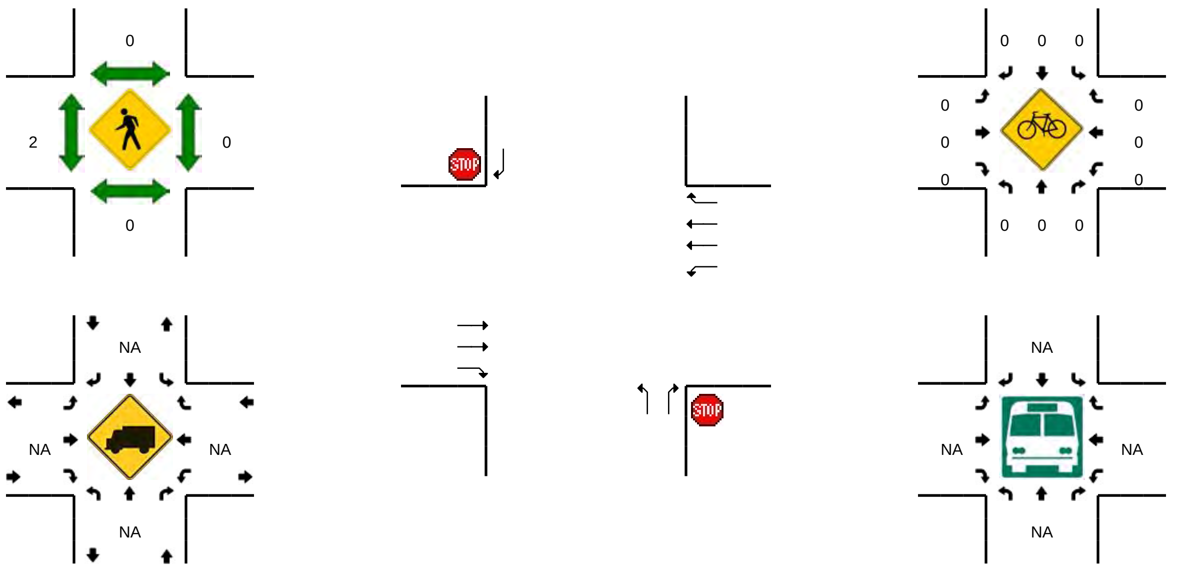
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: Gateway Dr/Crosstree Dr -- US 278 | **QC JOB #:** 13333512
CITY/STATE: Hilton Head Island, SC | **DATE:** Sat, Jun 13 2015

Peak-Hour: 10:00 AM -- 11:00 AM
Peak 15-Min: 10:00 AM -- 10:15 AM







15-Min Count Period Beginning At	Gateway Dr/Crosstree Dr (Northbound) Left	Thru	Right	U	Gateway Dr/Crosstree Dr (Southbound) Left	Thru	Right	U	US 278 (Eastbound) Left	Thru	Right	U	US 278 (Westbound) Left	Thru	Right	U	Total	Hourly Totals
10:00 AM	4	0	11	0	0	1	0	0	0	475	3	0	10	712	0	1	1217	
10:15 AM	4	0	12	0	0	0	0	0	0	413	2	0	8	622	0	1	1062	
10:30 AM	4	0	14	0	0	0	0	0	0	433	8	0	10	595	0	0	1064	
10:45 AM	2	0	10	0	0	0	0	0	0	477	4	0	5	619	0	0	1117	4460
11:00 AM	0	0	3	0	0	0	0	0	0	563	6	0	10	601	0	0	1183	4426
11:15 AM	4	0	13	0	0	0	0	0	0	517	14	0	10	512	0	1	1071	4435
11:30 AM	9	0	12	0	0	0	0	0	0	539	10	0	15	499	0	3	1087	4458
11:45 AM	8	0	4	0	0	0	0	0	0	532	3	0	13	465	0	0	1025	4366
12:00 PM	4	1	18	0	0	0	0	0	0	612	4	0	10	478	0	1	1128	4311
12:15 PM	7	0	9	0	0	0	0	0	0	559	3	0	7	496	0	0	1081	4321
12:30 PM	9	0	3	0	0	0	0	0	0	531	10	0	5	504	0	0	1062	4296
12:45 PM	5	0	11	0	0	0	1	0	0	585	9	0	9	458	0	1	1079	4350
1:00 PM	5	0	9	0	0	0	0	0	0	516	3	0	9	482	0	2	1026	4248
1:15 PM	2	0	10	0	0	0	0	0	0	634	4	0	9	438	0	0	1097	4264
1:30 PM	1	0	12	0	0	0	0	0	0	622	9	0	8	431	0	0	1083	4285
1:45 PM	4	0	11	0	0	0	0	0	0	653	5	0	8	424	0	0	1105	4311

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	16	0	44	0	0	4	0	0	0	1900	12	0	40	2848	0	4	4868
Heavy Trucks	0	0	0		0	0	0		0	32	0		0	96	0		128
Pedestrians		0				0				4				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

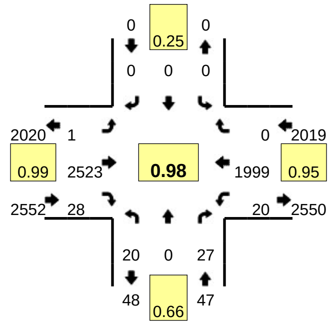
Comments:

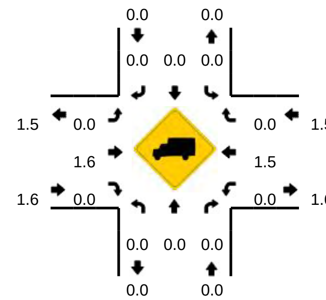
Report generated on 6/24/2015 6:41 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

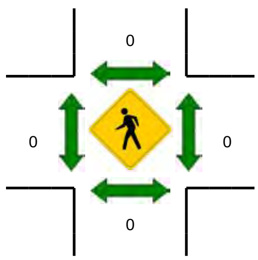
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

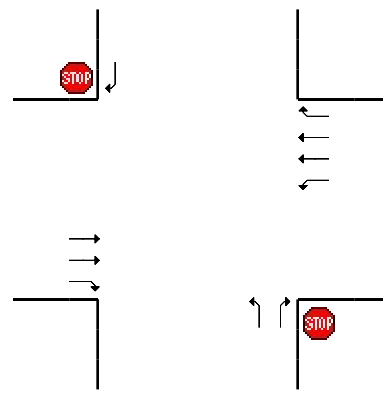
LOCATION: Gateway Dr/Crosstree Dr -- US 278 | **QC JOB #:** 13333513
CITY/STATE: Hilton Head Island, SC | **DATE:** Sat, Jun 13 2015

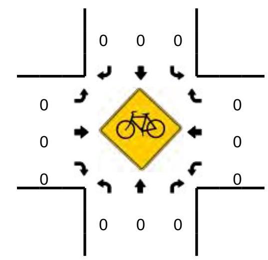
Peak-Hour: 3:45 PM -- 4:45 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

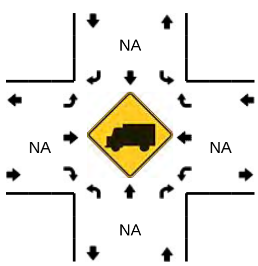


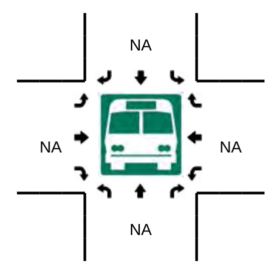












15-Min Count Period Beginning At	Gateway Dr/Crosstree Dr (Northbound) Left	Thru	Right	U	Gateway Dr/Crosstree Dr (Southbound) Left	Thru	Right	U	US 278 (Eastbound) Left	Thru	Right	U	US 278 (Westbound) Left	Thru	Right	U	Total	Hourly Totals
2:00 PM	4	0	7	0	0	0	0	0	0	660	4	0	6	437	0	0	1118	
2:15 PM	7	0	10	0	0	0	0	0	0	639	3	0	9	483	0	0	1151	
2:30 PM	3	0	7	0	0	0	0	0	0	599	2	0	6	414	0	0	1031	
2:45 PM	4	0	4	0	0	0	0	0	0	609	8	0	7	439	0	0	1071	4371
3:00 PM	3	0	5	0	0	0	0	0	0	610	1	0	5	481	0	1	1106	4359
3:15 PM	0	0	16	0	0	0	0	0	0	604	4	0	12	498	0	1	1135	4343
3:30 PM	2	0	4	0	0	0	0	0	0	606	4	1	4	487	0	0	1108	4420
3:45 PM	10	0	10	0	0	0	0	0	0	632	8	0	6	484	0	0	1150	4499
4:00 PM	2	0	9	0	0	0	0	0	0	638	9	0	5	478	0	0	1141	4534
4:15 PM	4	0	4	0	0	0	0	0	0	613	8	1	3	513	0	0	1146	4545
4:30 PM	4	0	4	0	0	0	0	0	0	640	3	0	6	524	0	0	1181	4618
4:45 PM	3	0	8	0	0	0	0	0	0	638	3	0	6	476	0	0	1134	4602
5:00 PM	0	0	9	0	0	0	0	0	0	600	5	0	6	425	0	0	1045	4506
5:15 PM	8	0	6	0	0	0	0	0	0	637	6	0	10	525	0	0	1192	4552
5:30 PM	2	0	7	0	0	0	0	0	0	593	3	0	4	424	0	0	1033	4404
5:45 PM	3	0	12	0	0	0	1	0	0	611	7	0	10	425	1	0	1070	4340

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	16	0	16	0	0	0	0	0	0	2560	12	0	24	2096	0	0	4724
Heavy Trucks	0	0	0		0	0	0		0	48	0		0	28	0		76
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

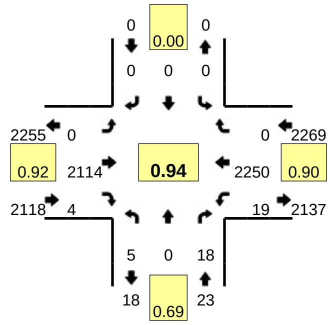
Report generated on 6/24/2015 6:41 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

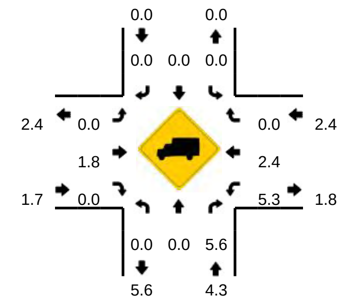
Type of peak hour being reported: Intersection Peak — Method for determining peak hour: Total Entering Volume

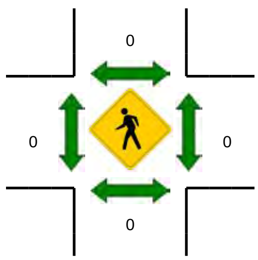
LOCATION: Blue Heron Point Rd -- US 278 — **QC JOB #:** 13333514

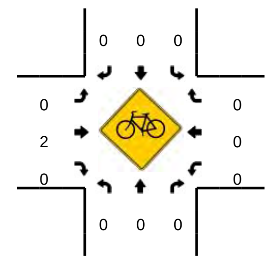
CITY/STATE: Hilton Head Island, SC — **DATE:** Sat, Jun 13 2015

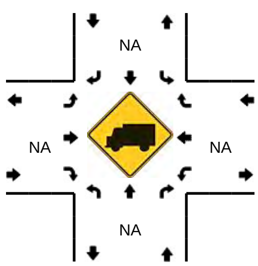


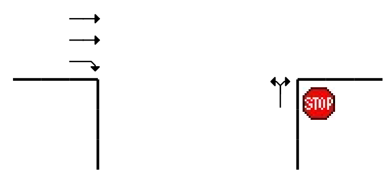
Peak-Hour: 10:45 AM -- 11:45 AM
Peak 15-Min: 11:00 AM -- 11:15 AM

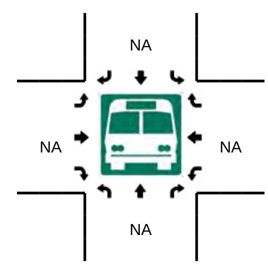












15-Min Count Period Beginning At	Blue Heron Point Rd (Northbound) Left	Thru	Right	U	Blue Heron Point Rd (Southbound) Left	Thru	Right	U	US 278 (Eastbound) Left	Thru	Right	U	US 278 (Westbound) Left	Thru	Right	U	Total	Hourly Totals
10:00 AM	2	0	2	0	0	0	0	0	0	473	1	0	2	702	0	1	1183	
10:15 AM	4	0	2	0	0	0	0	0	0	419	0	1	4	619	0	0	1049	
10:30 AM	1	0	4	0	0	0	0	0	0	438	0	0	3	580	0	0	1026	
10:45 AM	1	0	3	0	0	0	0	0	0	487	0	0	8	608	0	1	1108	4366
11:00 AM	1	0	4	0	0	0	0	0	0	569	2	0	3	592	0	1	1172	4355
11:15 AM	1	0	4	0	0	0	0	0	0	514	2	0	2	534	0	2	1059	4365
11:30 AM	2	0	7	0	0	0	0	0	0	544	0	0	1	516	0	1	1071	4410
11:45 AM	2	0	4	0	0	0	0	0	0	530	1	1	3	470	0	1	1012	4314
12:00 PM	0	0	1	0	0	0	0	0	0	613	1	0	2	477	0	0	1094	4236
12:15 PM	2	0	1	0	0	0	0	0	0	550	0	0	3	498	0	1	1055	4232
12:30 PM	0	0	1	0	0	0	0	0	0	539	1	0	2	513	0	1	1057	4218
12:45 PM	1	0	2	0	0	0	0	0	0	595	2	0	4	465	0	1	1070	4276
1:00 PM	0	0	2	0	0	0	0	0	0	502	2	0	5	477	0	1	989	4171
1:15 PM	0	0	4	0	0	0	0	0	0	639	3	0	3	435	0	0	1084	4200
1:30 PM	1	0	4	0	0	0	0	0	0	623	3	0	2	435	0	0	1068	4211
1:45 PM	1	0	2	0	0	0	0	0	0	661	0	0	3	422	0	0	1089	4230

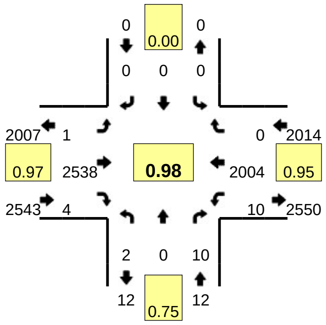
Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	4	0	16	0	0	0	0	0	0	2276	8	0	12	2368	0	4	4688
Heavy Trucks	0	0	0		0	0	0		0	44	0		0	44	0		88
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	1	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

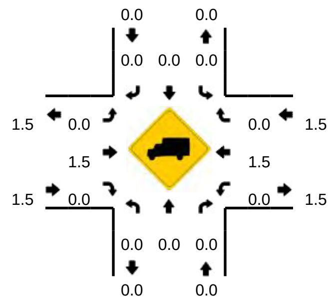
Report generated on 6/24/2015 6:41 AM — SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

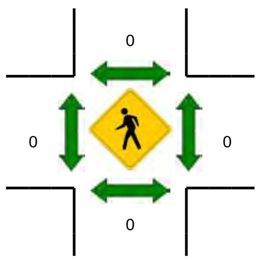
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

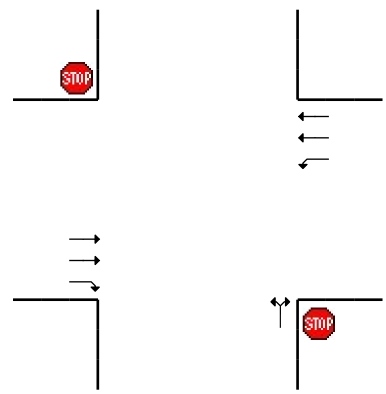
LOCATION: Blue Heron Point Rd -- US 278 | **QC JOB #:** 13333515
CITY/STATE: Hilton Head Island, SC | **DATE:** Sat, Jun 13 2015

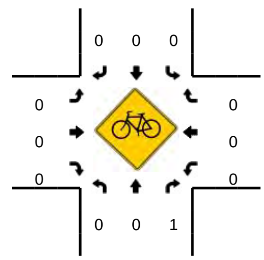


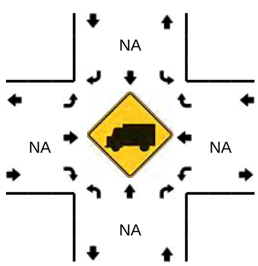
Peak-Hour: 3:45 PM -- 4:45 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

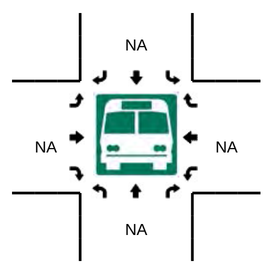












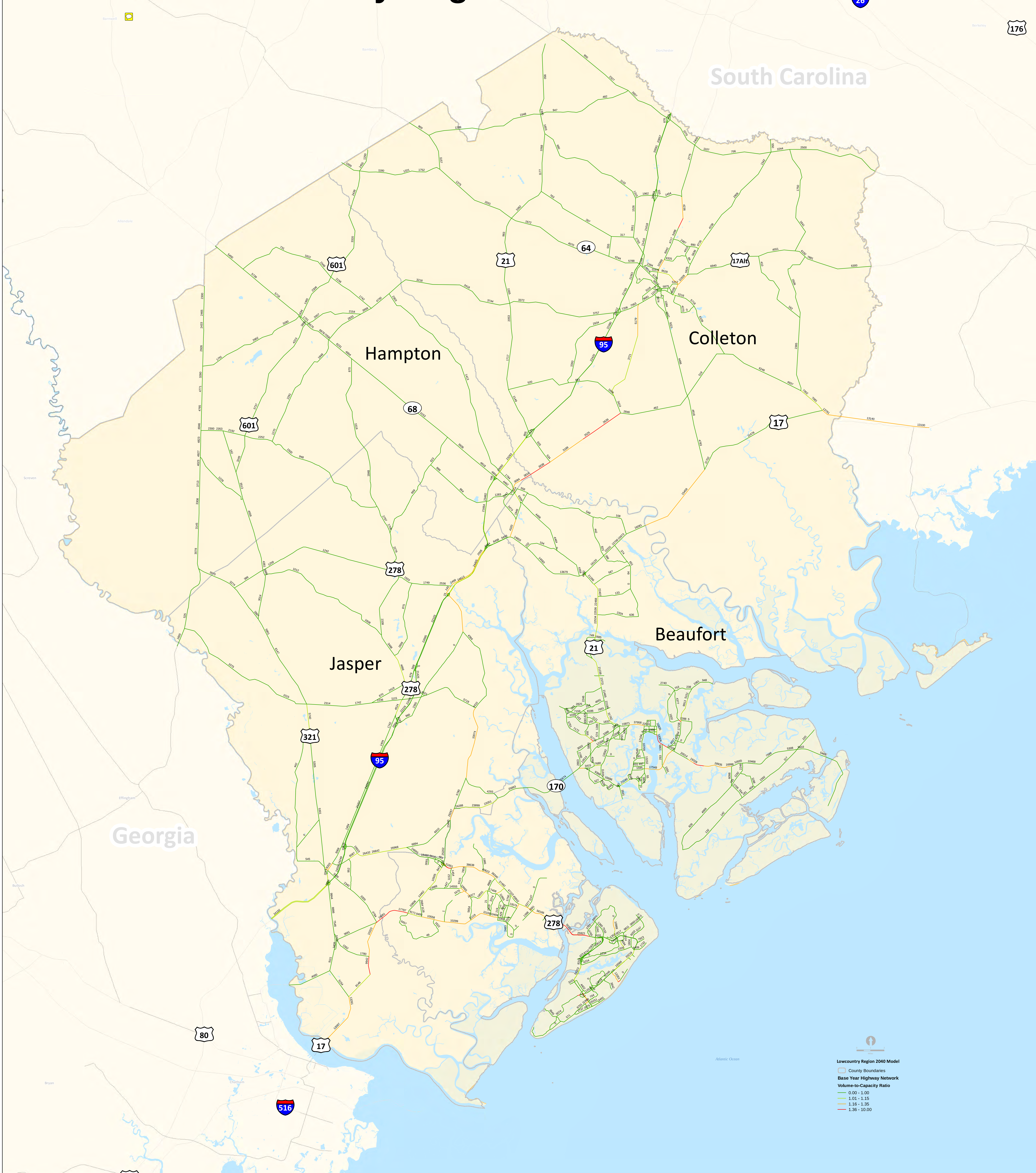
15-Min Count Period Beginning At	Blue Heron Point Rd (Northbound) Left	Thru	Right	U	Blue Heron Point Rd (Southbound) Left	Thru	Right	U	US 278 (Eastbound) Left	Thru	Right	U	US 278 (Westbound) Left	Thru	Right	U	Total	Hourly Totals
2:00 PM	0	0	2	0	0	0	0	0	0	654	1	1	0	434	0	1	1093	
2:15 PM	0	0	1	0	0	0	0	0	0	647	1	0	1	496	0	1	1147	
2:30 PM	0	0	1	0	0	0	0	0	0	596	0	0	2	425	0	0	1024	
2:45 PM	1	0	0	0	0	0	0	0	0	606	1	1	5	431	0	1	1046	4310
3:00 PM	2	0	1	0	0	0	0	0	0	631	4	0	1	482	0	1	1122	4339
3:15 PM	1	0	2	1	0	0	0	0	0	594	3	1	2	501	0	0	1105	4297
3:30 PM	2	0	3	1	0	0	0	0	0	606	3	0	2	487	0	0	1104	4377
3:45 PM	2	0	3	0	0	0	0	0	0	655	1	1	3	482	0	1	1148	4479
4:00 PM	0	0	2	0	0	0	0	0	0	629	1	0	2	475	0	0	1109	4466
4:15 PM	0	0	2	0	0	0	0	0	0	611	1	0	2	527	0	1	1144	4505
4:30 PM	0	0	3	0	0	0	0	0	0	643	1	0	1	520	0	0	1168	4569
4:45 PM	1	0	0	0	0	0	0	0	0	627	1	1	1	477	0	0	1108	4529
5:00 PM	0	0	5	0	0	0	0	0	0	598	1	0	0	428	0	0	1032	4452
5:15 PM	1	0	1	0	0	0	0	0	0	634	0	0	2	529	0	0	1167	4475
5:30 PM	1	0	2	0	0	0	0	0	0	426	0	0	1	426	0	0	856	4163
5:45 PM	0	0	2	0	0	0	0	0	0	430	0	0	3	430	0	0	865	3920

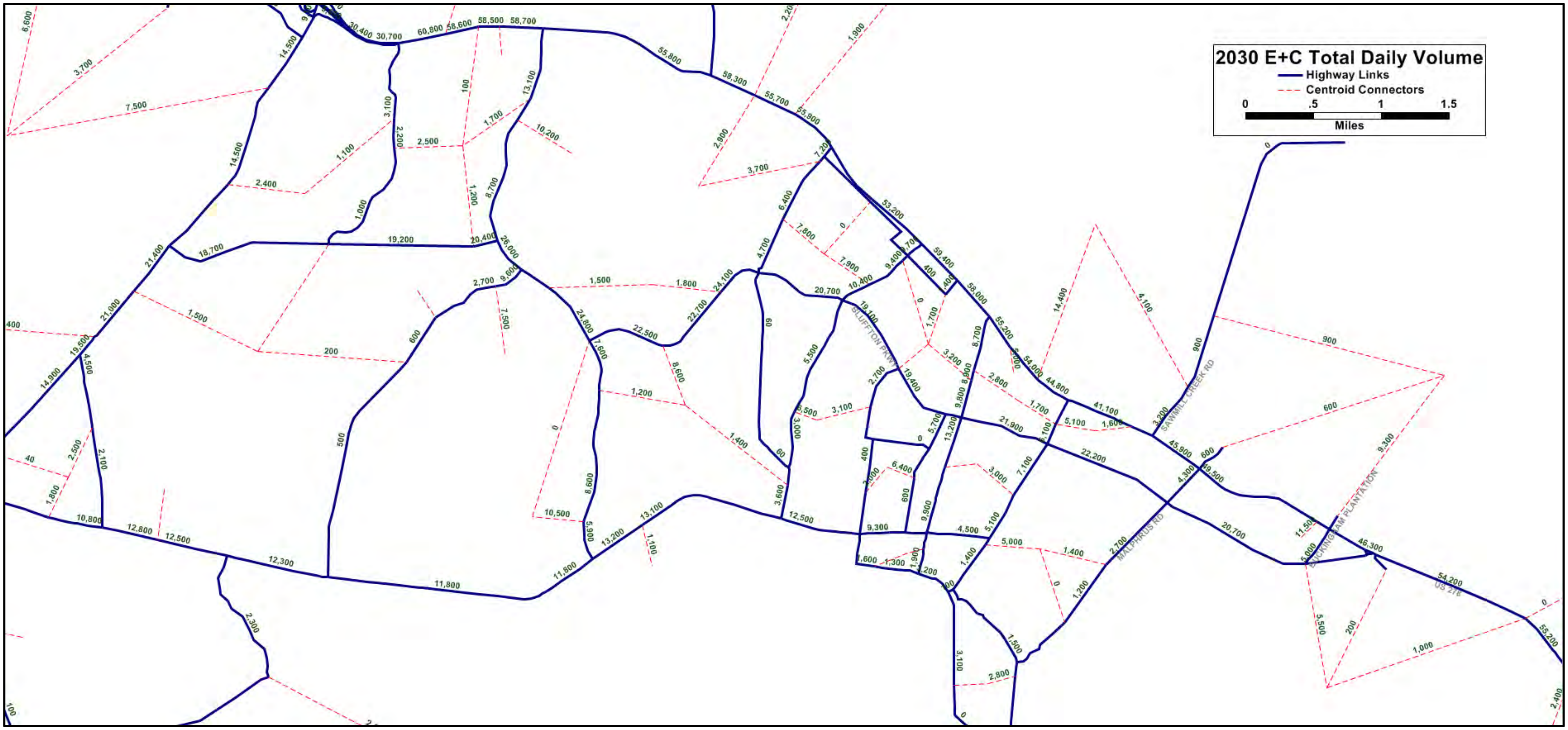
Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	0	0	12	0	0	0	0	0	0	2572	4	0	4	2080	0	0	4672
Heavy Trucks	0	0	0		0	0	0		0	48	0		0	28	0		76
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

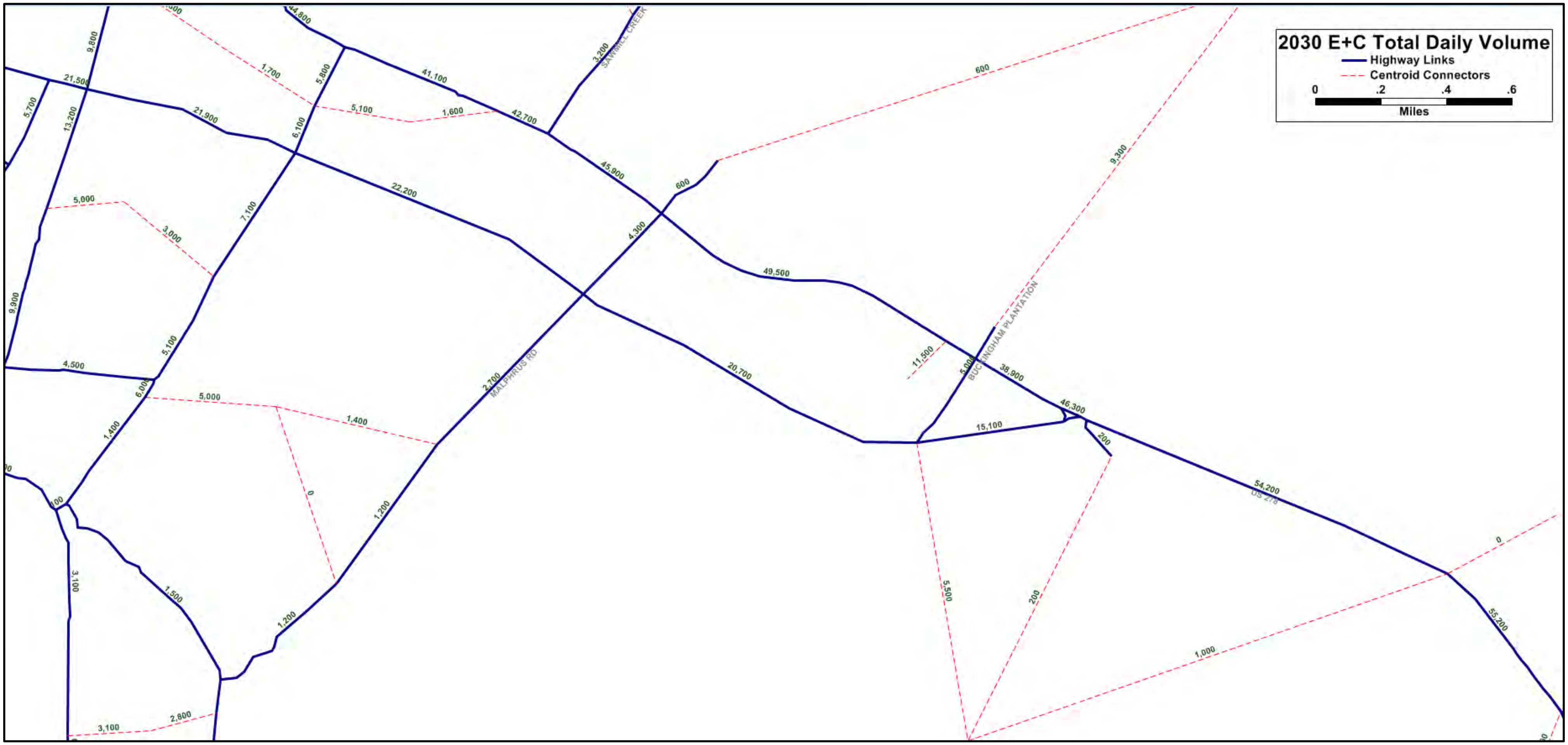
Comments:

Report generated on 6/24/2015 6:41 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

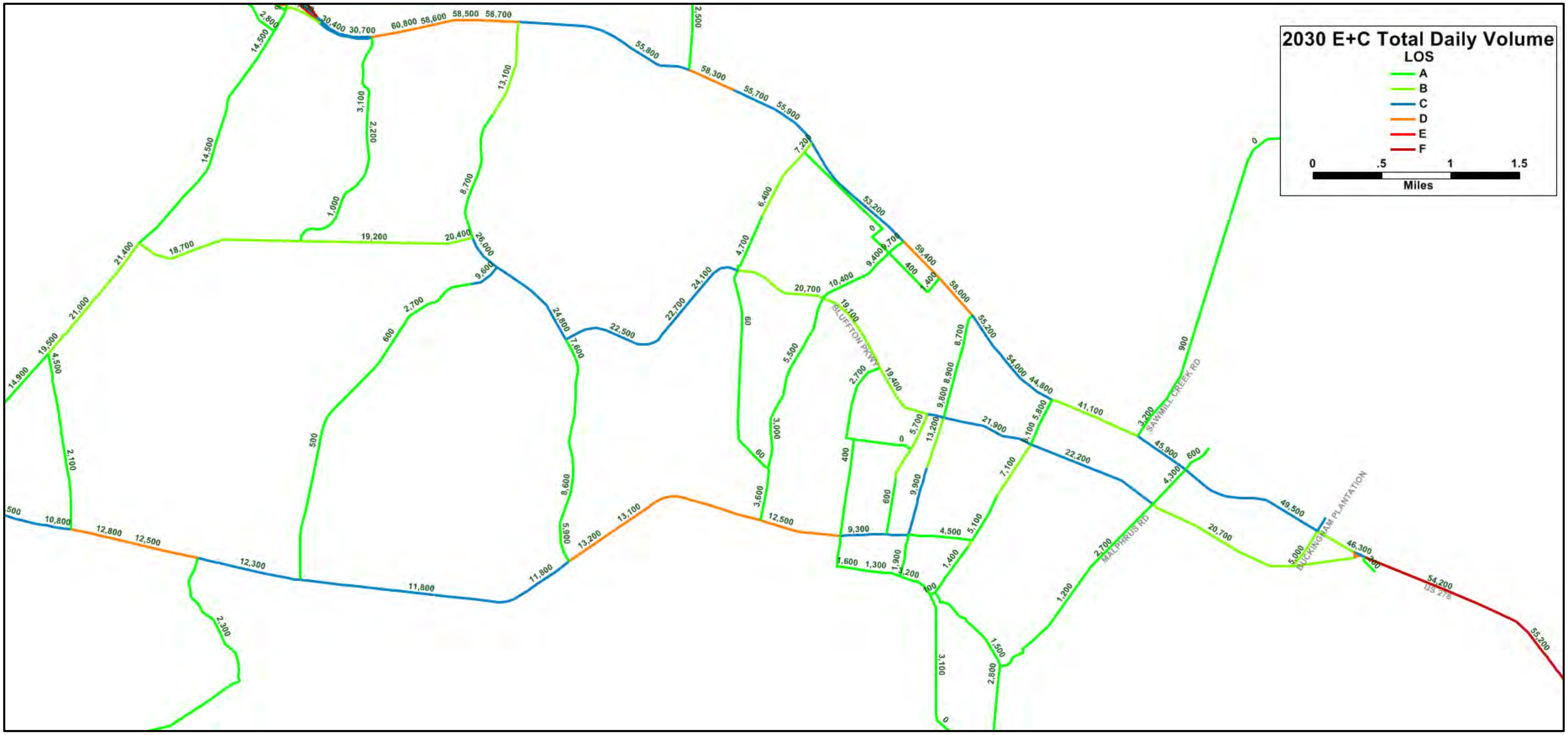
Lowcountry Regional Model: 2010 Base Year



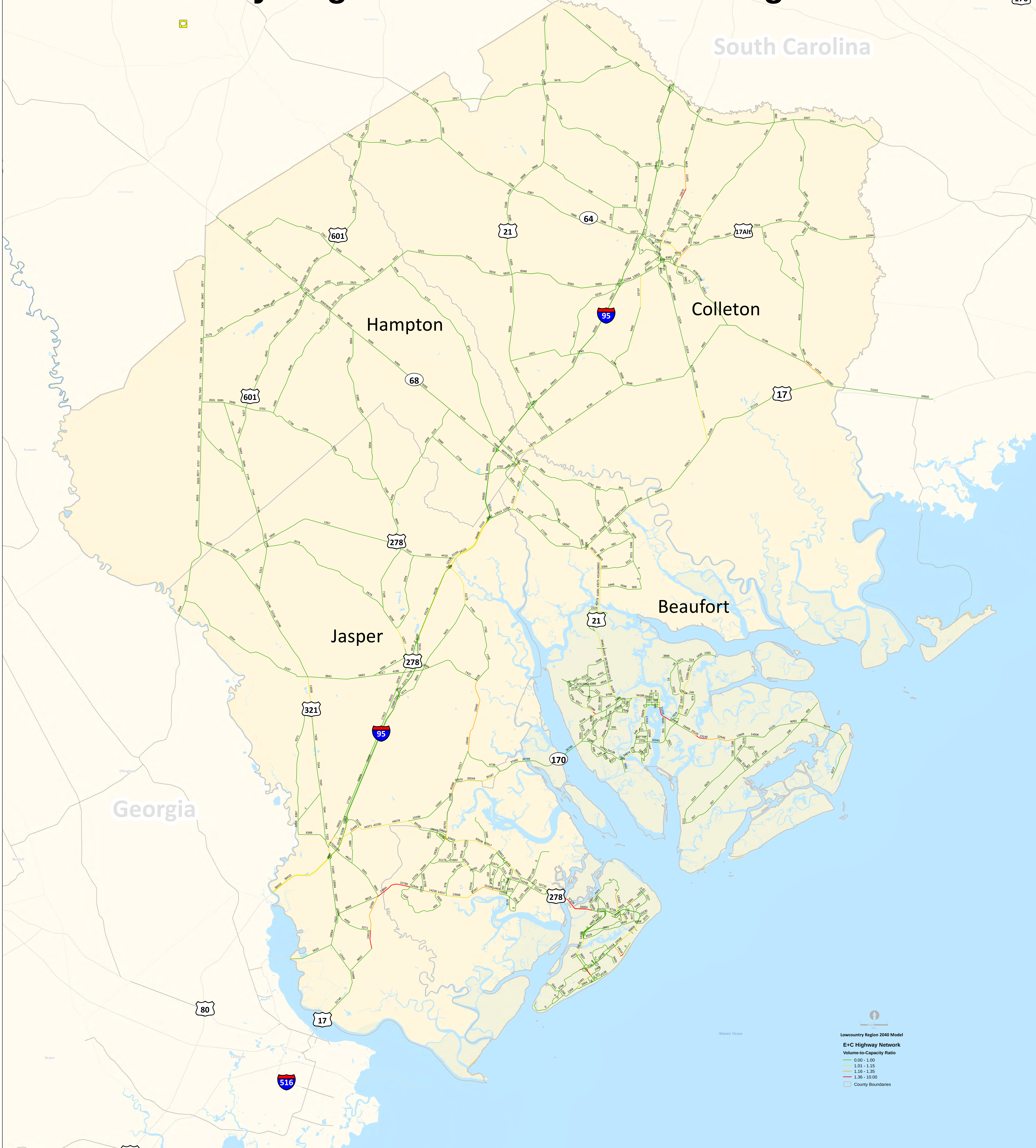

2030 E+C Total Daily Volume
Highway Links
Centroid Connectors
0
.5
1
1.5
Miles
BLUFFTON PKWY
SAWMILL CREEK RD
MALPHRUS RD
BUCKINGHAM PLANTATION
US 278



2030 E+C Total Daily Volume
Highway Links
Centroid Connectors
0
.2
.4
.6
Miles
SAWMILL CREEK
MALPHRUS RD
BUCKINGHAM PLANTATION
US 278
9,800
21,500
5,700
13,200
21,900
1,700
5,800
41,100
3,200
5,100
1,600
42,700
6,100
600
9,300
45,900
600
5,000
3,000
7,100
22,200
4,300
49,500
9,900
5,100
4,500
6,000
5,000
1,400
2,700
20,700
11,500
5,000
38,900
46,300
15,100
200
1,400
0
1,200
54,200
0
3,100
1,500
1,200
5,500
200
55,200
1,000
3,100
2,800


2030 E+C Total Daily Volume
LOS
A
B
C
D
E
F
0
.5
1
1.5
Miles
SAWMILL CREEK RD
BLUFFTON PKWY
MALPHRUS RD
BUCKINGHAM PLANTATION
US 278

Lowcountry Regional Model: 2040 Existing + Committed



B

Appendix B - Traffic Volume Diagrams

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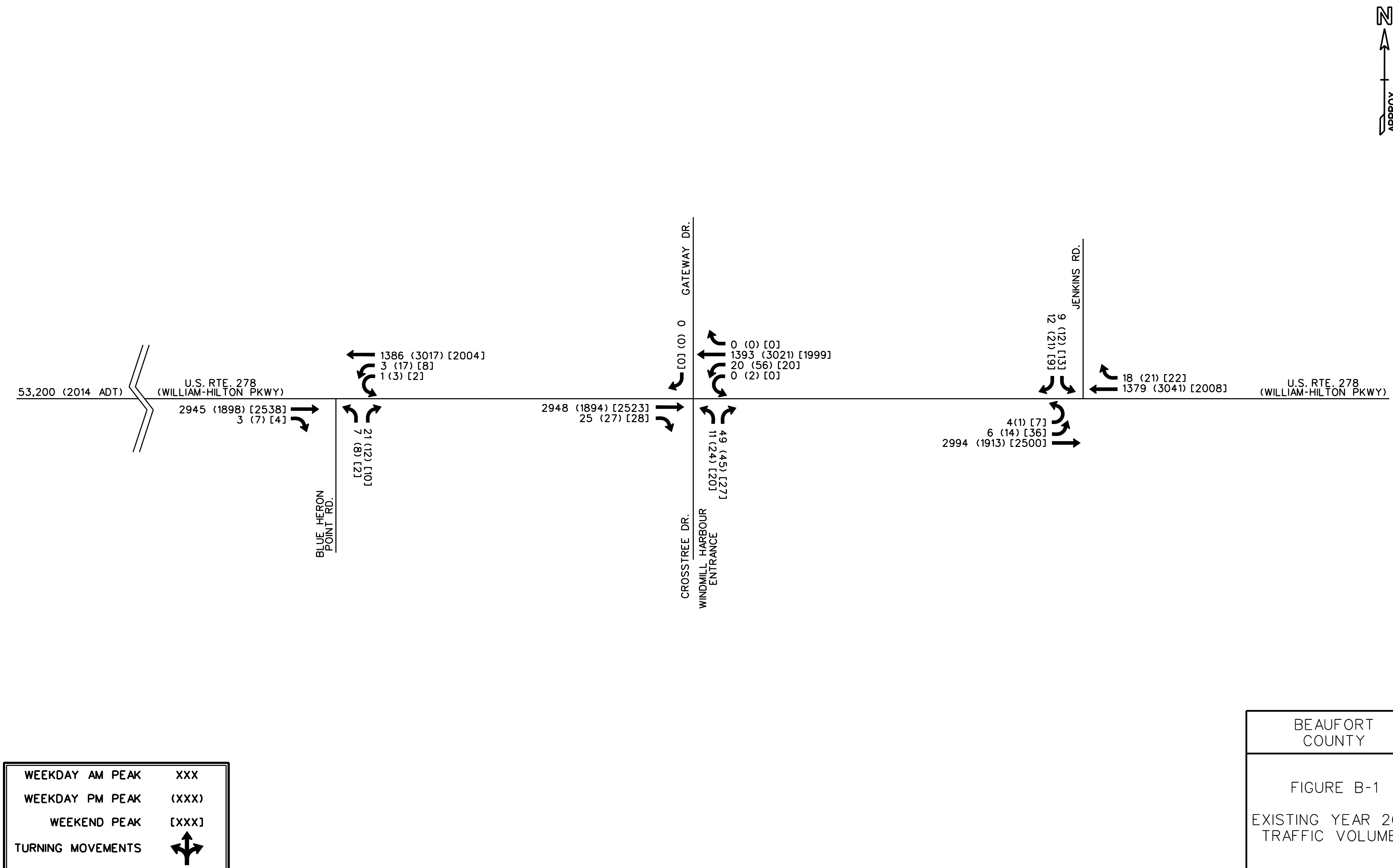
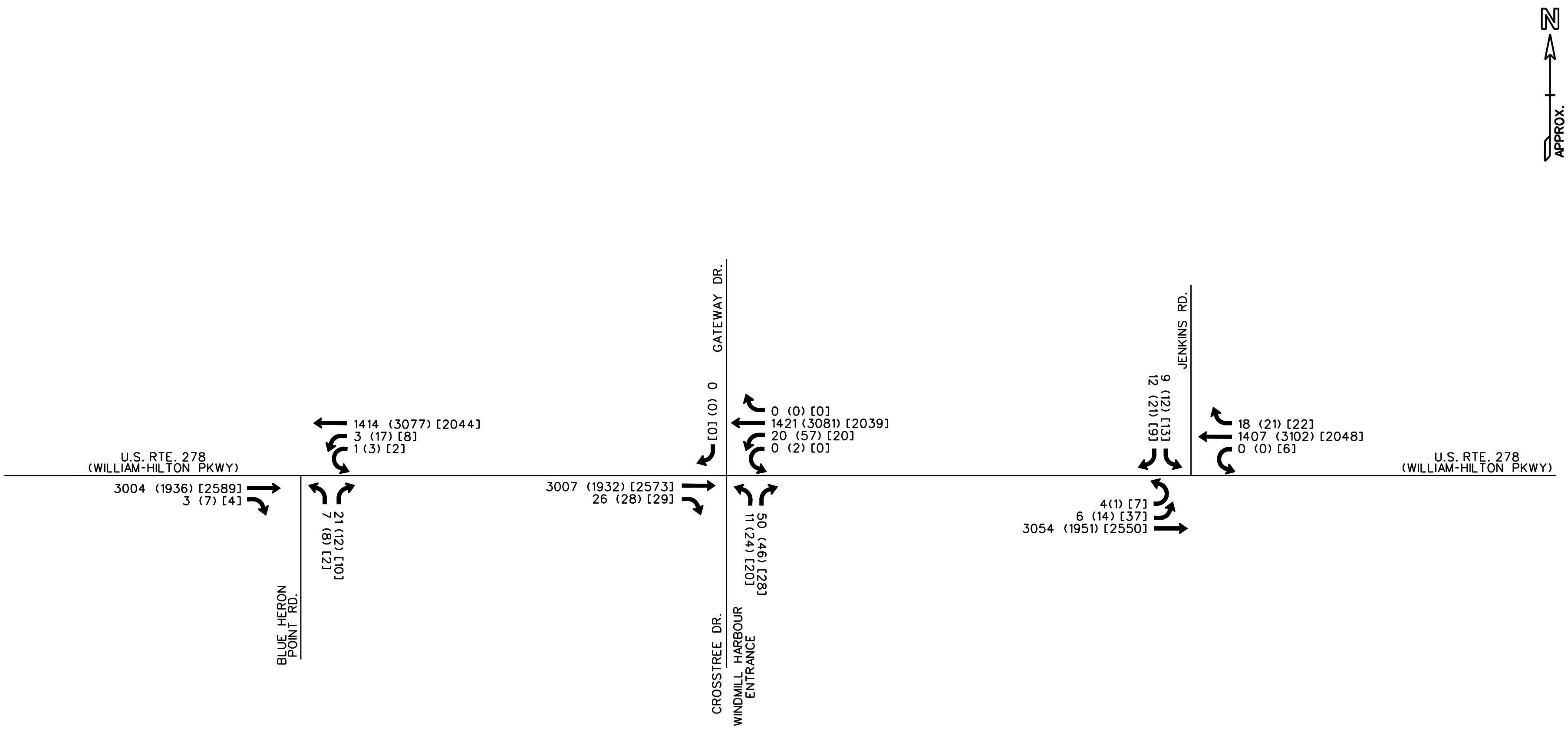


BEAUFORT COUNTY

FIGURE B-1

EXISTING YEAR 2015 TRAFFIC VOLUMES

NOT TO SCALE SEP. 2015



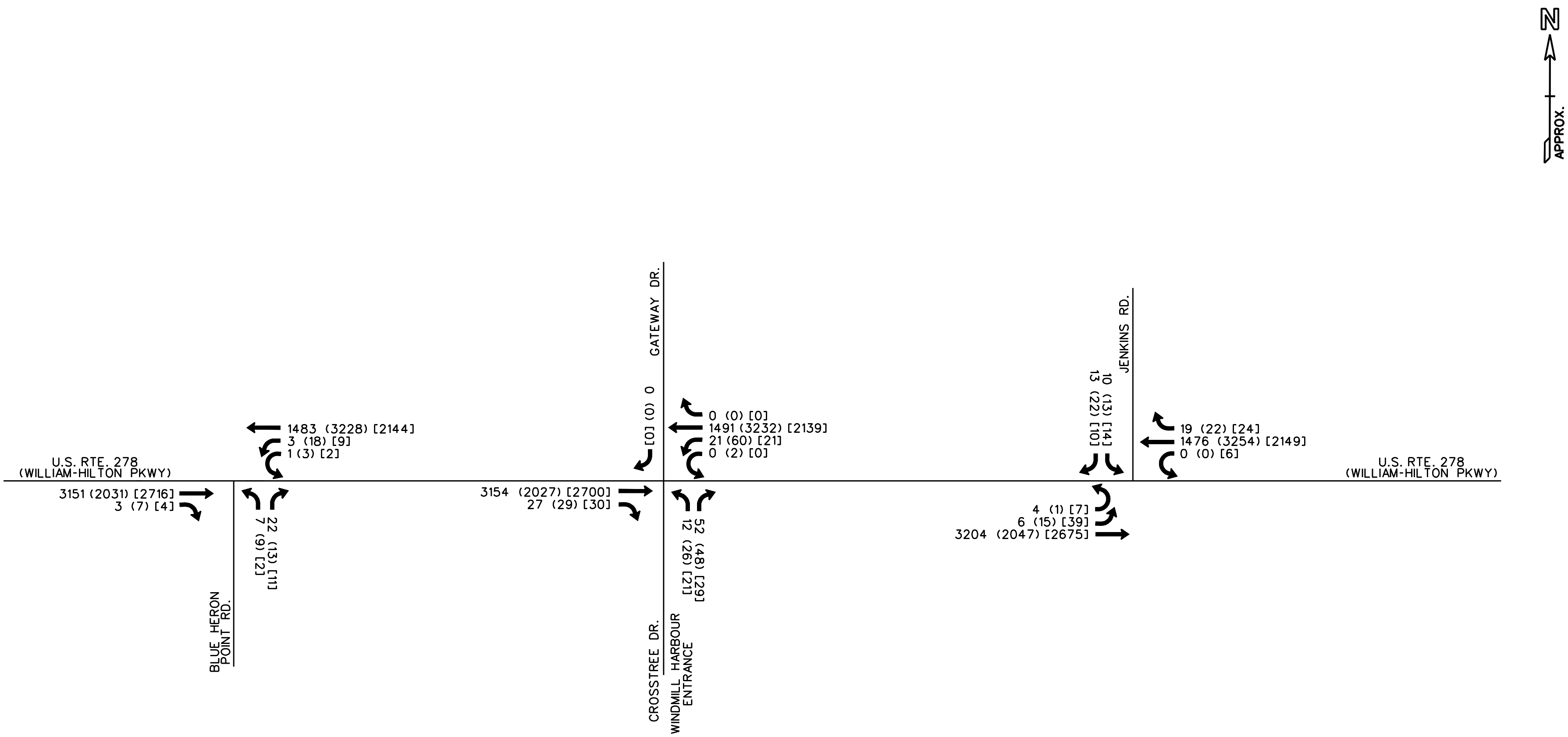
WEEKDAY AM PEAK	XXX
WEEKDAY PM PEAK	(XXX)
WEEKEND PEAK	[XXX]
TURNING MOVEMENTS	

BEAUFORT COUNTY

FIGURE B-2

NO BUILD CONDITION OPENING YEAR 2020 TRAFFIC VOLUMES

NOT TO SCALE SEP. 2015



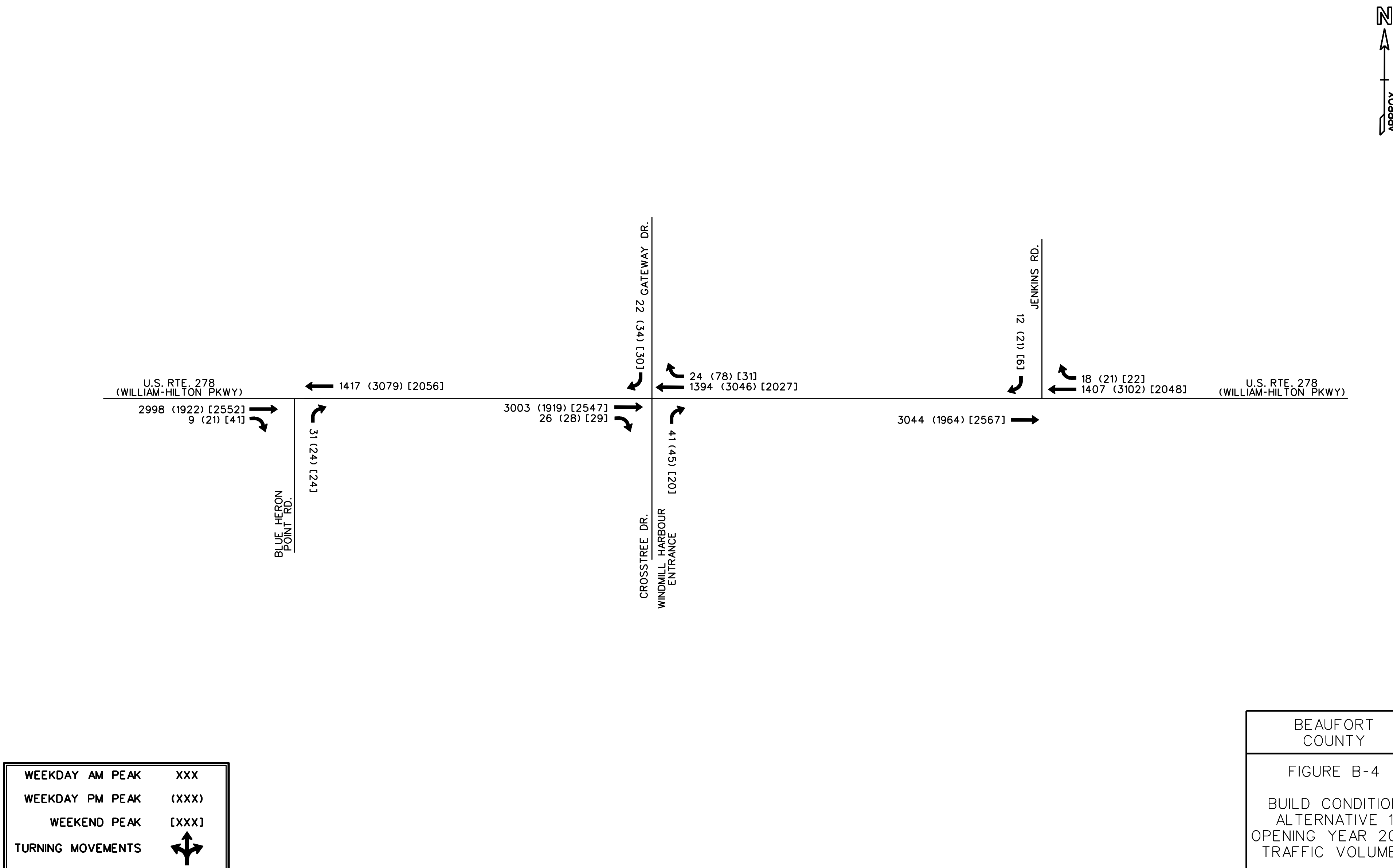
WEEKDAY AM PEAK	XXX
WEEKDAY PM PEAK	(XXX)
WEEKEND PEAK	[XXX]
TURNING MOVEMENTS	

BEAUFORT COUNTY

FIGURE B-3

NO-BUILD CONDITION
DESIGN YEAR 2035
TRAFFIC VOLUMES

NOT TO SCALE SEP. 2015

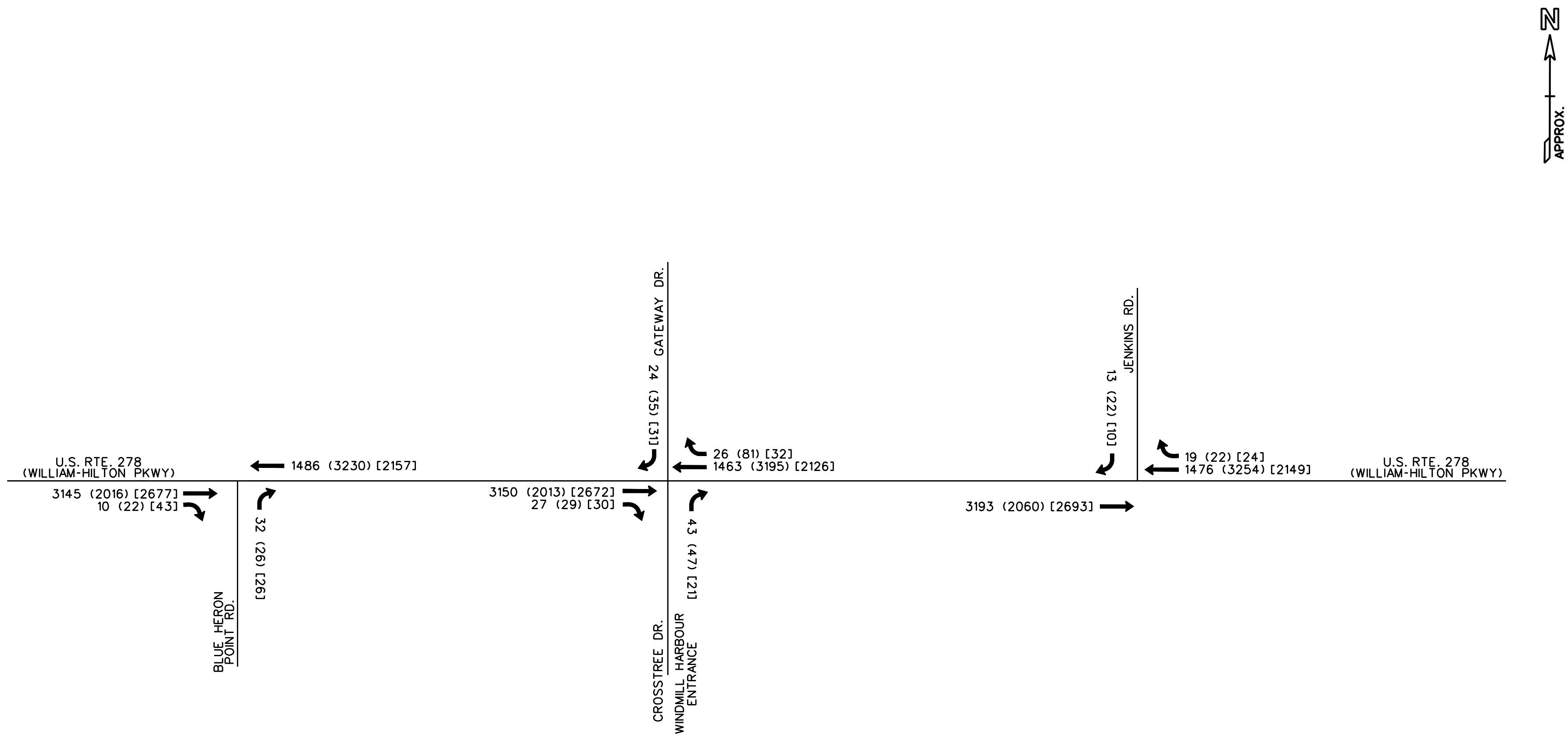


BEAUFORT
COUNTY

FIGURE B-4

BUILD CONDITION
ALTERNATIVE 1
OPENING YEAR 2020
TRAFFIC VOLUMES

NOT TO SCALE SEP. 2015



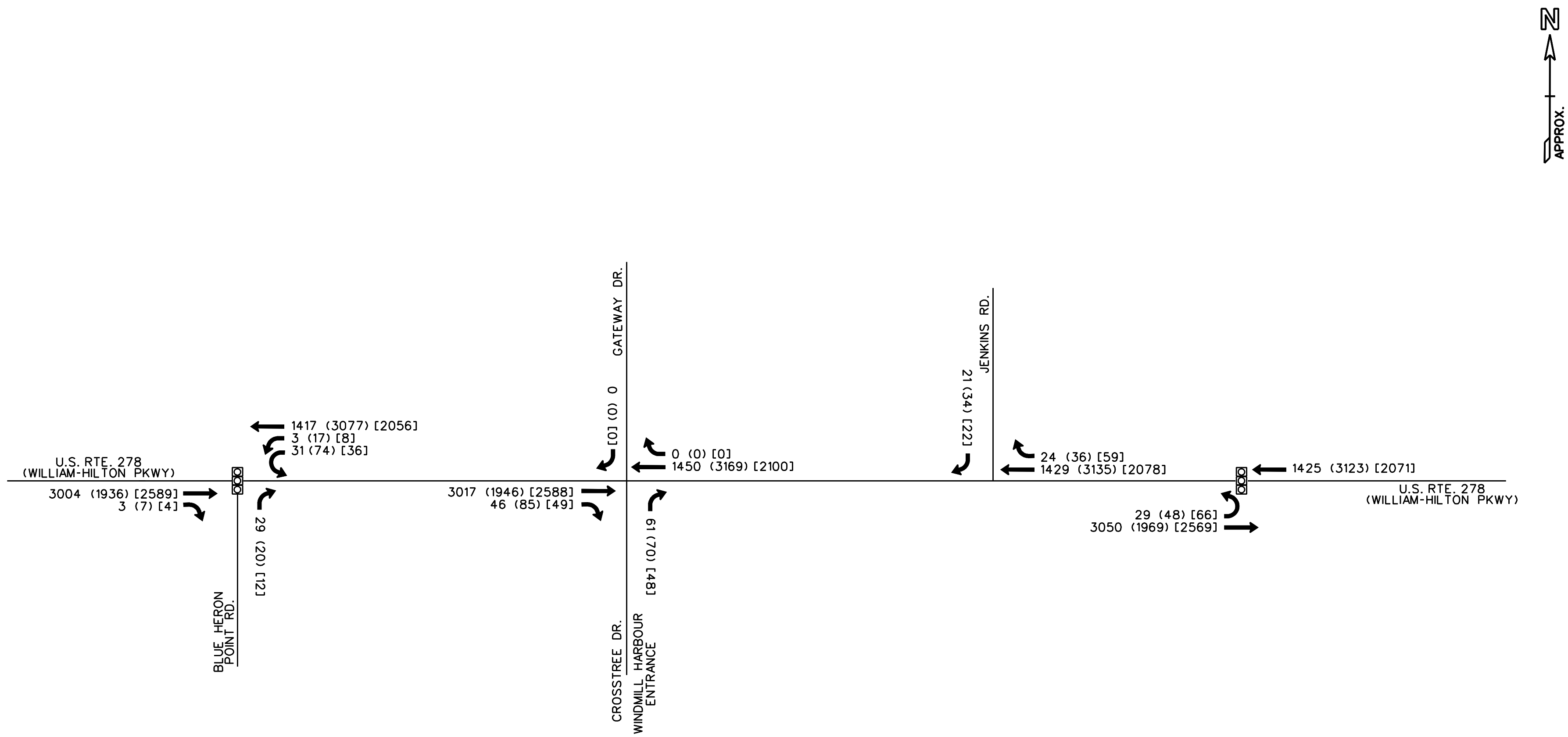
WEEKDAY AM PEAK	XXX
WEEKDAY PM PEAK	(XXX)
WEEKEND PEAK	[XXX]
TURNING MOVEMENTS	

BEAUFORT
COUNTY

FIGURE B-5

BUILD CONDITION
ALTERNATIVE 1
DESIGN YEAR 2035
TRAFFIC VOLUMES

NOT TO SCALE SEP. 2015



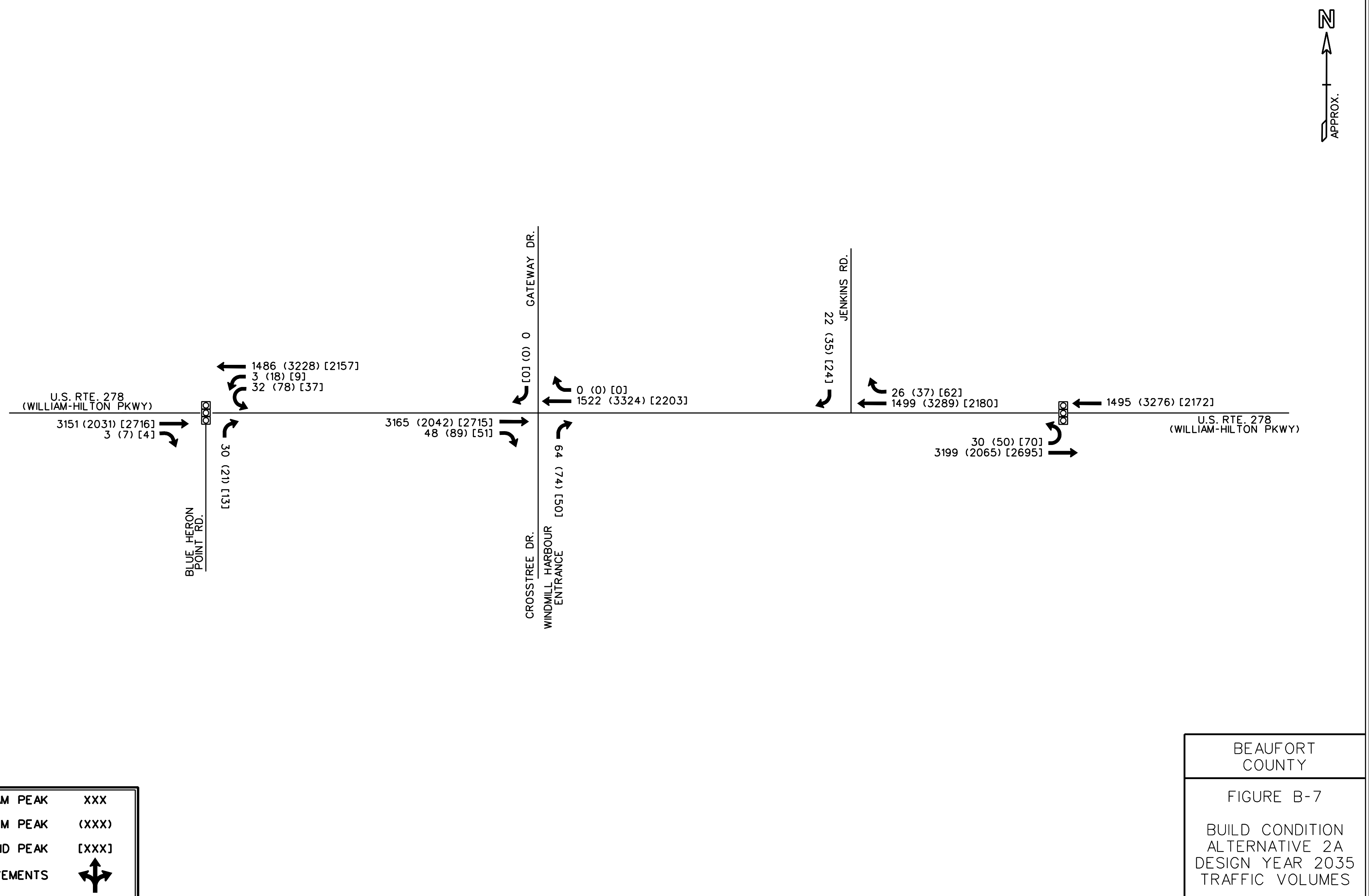
WEEKDAY AM PEAK	XXX
WEEKDAY PM PEAK	(XXX)
WEEKEND PEAK	[XXX]
TURNING MOVEMENTS	

BEAUFORT COUNTY

FIGURE B-6

BUILD CONDITION
ALTERNATIVE 2A
OPENING YEAR 2020
TRAFFIC VOLUMES

NOT TO SCALE SEP. 2015



BEAUFORT COUNTY

FIGURE B-7

BUILD CONDITION ALTERNATIVE 2A DESIGN YEAR 2035 TRAFFIC VOLUMES

NOT TO SCALE SEP. 2015

C

Appendix C - Collision Diagrams

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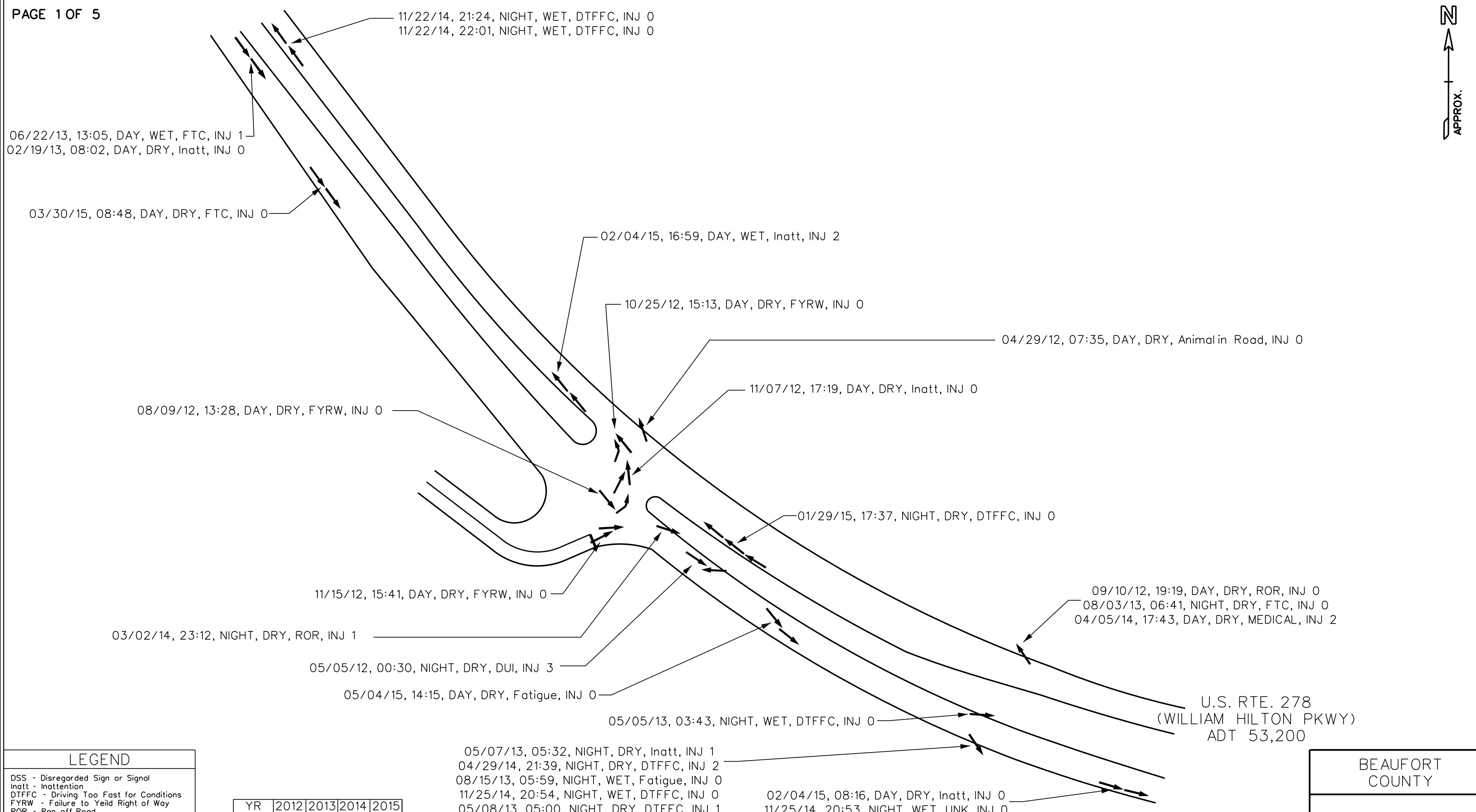


LEGEND

DSS - Disregarded Sign or Signal
Inatt - Inattention
DTFFC - Driving Too Fast for Conditions
FYRW - Failure to Yeild Right of Way
ROR - Ran off Road
FTC - Followed Too Closely
AOV - Agressive Operation of Vehicle
SAO - Swerving to Avoid Object
DUI - Under the Influence
Imp Lc - Improper Lane Change

RA = Right Angle
RE = Rear End
SS = Side Swipe
HO = Head On
OC = Out of Control
HA = Hit Animal
OTH = Other

YR	2012	2013	2014	2015
RA	3	0	0	0
RE	1	2	3	5
SS	1	0	0	0
HO	0	0	0	0
OC	1	5	4	0
HA	0	0	0	0
OTH	1	0	0	0
Total	7	7	7	5

NIGHT = 13 DAY = 13	Total = 26 Estimated AADT = 53,400 Years = 3.42 01/01/2012 to 05/31/2015 CR = 0.39	PDO = 18 INJ. 1 = 5 INJ. 2 = 3 INJ. 3 = 1 FATAL = 0
WET = 8 DRY = 18		

HDR | ICA

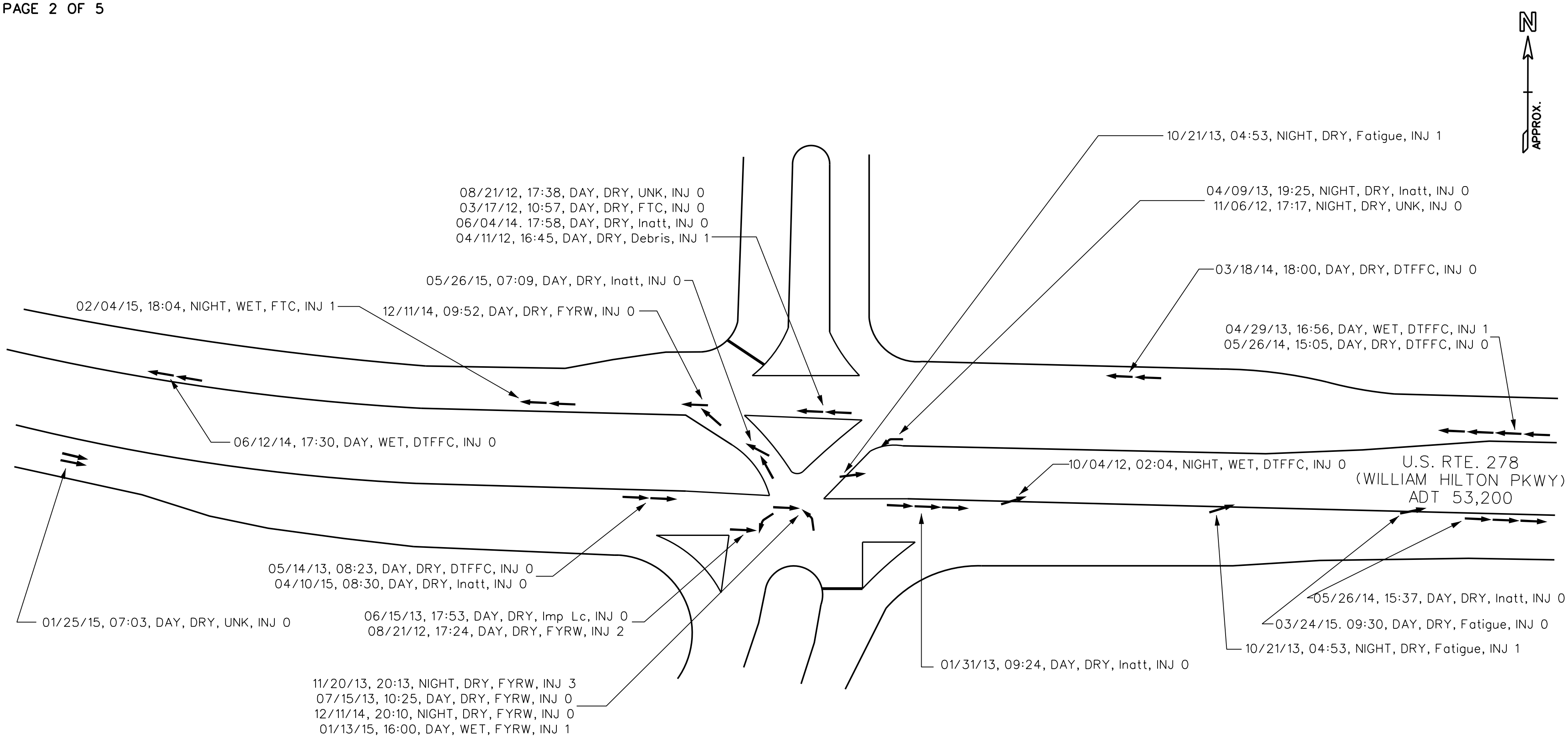
ICA Engineering Inc.
501 Huger St, Columbia SC, 29201

BEAUFORT COUNTY

FIGURE C-1

U.S.RTE. 278 / BLUE HERON POINT COLLISION DIAGRAM

NOT TO SCALE SEP 2015



LEGEND

DSS - Disregarded Sign or Signal
Inatt - Inattention
DTFFC - Driving Too Fast for Conditions
FYRW - Failure to Yeild Right of Way
ROR - Ran off Road
FTC - Followed Too Closely
AOV - Agressive Operation of Vehicle
SAO - Swerving to Avoid Object
DUI- Under the Influence
Imp Lc - Improper Lane Change

RA - Right Angle
RE - Rear End
SS - Side Swipe
HO - Head On
OC - Out of Control
HA - Hit Animal
OTH - Other

YR	2012	2013	2014	2015
RA	1	2	2	2
RE	3	3	5	2
SS	0	0	0	1
HO	0	1	0	0
OC	2	2	0	1
HA	0	0	0	0
OTH	0	1	0	0
Total	6	9	7	6

NIGHT = 9 DAY = 19	Total = 28 Estimated AADT = 54,300 Years = 3.42 01/01/2012 to 05/31/2015 CR = 0.41	PDO = 20 INJ. 1 = 6 INJ. 2 = 1 INJ. 3 = 1 FATAL = 0
WET = 5 DRY = 23		

HDR | ICA

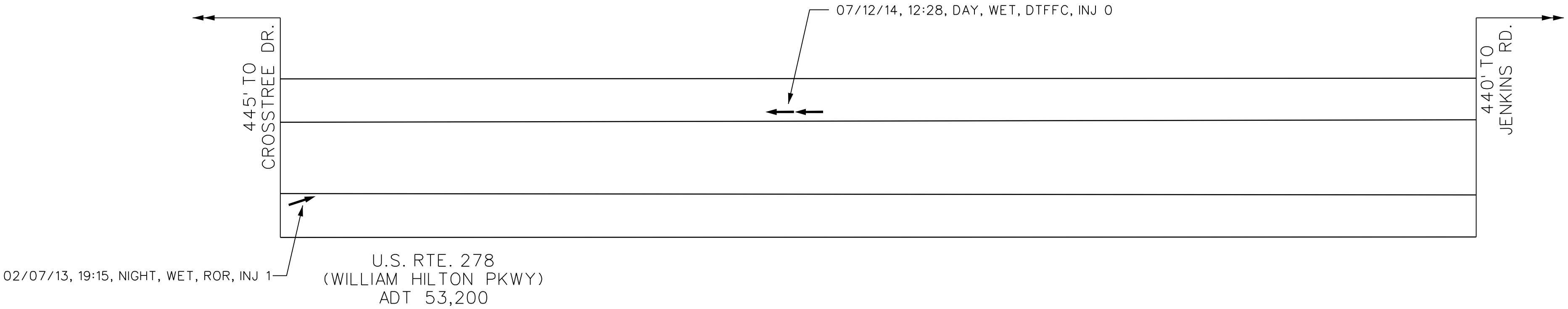
ICA Engineering Inc.
501 Huger St, Columbia SC, 29201

BEAUFORT COUNTY

FIGURE C-2

U.S.RTE. 278 / GATEWAY DR. / CROSSTREE DR. COLLISION DIAGRAM

NOT TO SCALE SEP 2015



LEGEND

DSS - Disregarded Sign or Signal
Inatt - Inattention
DTFFC - Driving Too Fast for Conditions
FYRW - Failure to Yeild Right of Way
ROR - Ran off Road
FTC - Followed Too Closely
AOV - Agressive Operation of Vehicle
SAO - Swerving to Avoid Object
DUI - Under the Influence
Imp Lc - Improper Lane Change

RA = Right Angle
RE = Rear End
SS = Side Swipe
HO = Head On
OC = Out of Control
HA = Hit Animal
OTH = Other

YR	2012	2013	2014	2015
RA	0	0	0	0
RE	0	0	1	0
SS	0	0	0	0
HO	0	0	0	0
OC	0	1	0	0
HA	0	0	0	0
OTH	0	0	0	0
Total	0	1	1	0

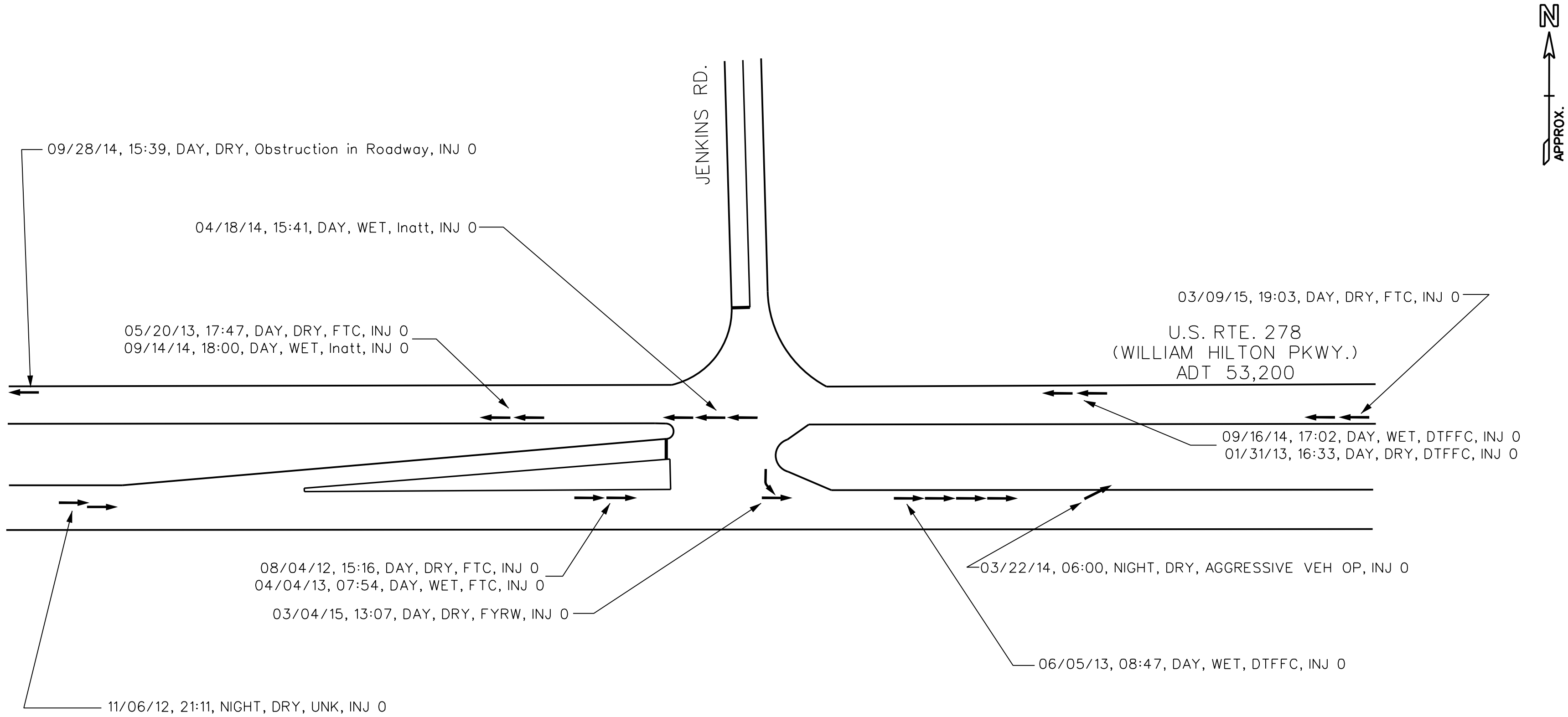
NIGHT = 1 DAY = 1	Total = 2 AADT = 53,200 Years = 3.52 01/01/2012 to 05/31/2015	PDO = 1 INJ. 1 = 1 INJ. 2 = 0 INJ. 3 = 0 FATAL = 0
WET = 2 DRY = 0		

ICA Engineering Inc.
501 Huger St, Columbia SC, 29201

BEAUFORT COUNTY

FIGURE C-3
U.S.RTE. 278
(WILLIAM HILTON PKWY) BETWEEN JENKINS & CROSSTREE

NOT TO SCALE SEP 2015



LEGEND

DSS - Disregarded Sign or Signal
Inatt - Inattention
DTFFC - Driving Too Fast for Conditions
FYRW - Failure to Yeild Right of Way
ROR - Ran off Road
FTC - Followed Too Closely
AOV - Agressive Operation of Vehicle
SAO - Swerving to Avoid Object
DUI - Under the Influence
Imp Lc - Improper Lane Change

RA = Right Angle
RE = Rear End
SS = Side Swipe
HO = Head On
OC = Out of Control
HA = Hit Animal
OTH = Other

YR	2012	2013	2014	2015
RA	0	0	0	1
RE	1	4	3	1
SS	1	0	0	0
HO	0	0	0	0
OC	0	0	1	0
HA	0	0	0	0
OTH	0	0	1	0
Total	2	4	5	2

NIGHT = 1 DAY = 12	Total = 13 Estimated AADT = 53,600 Years = 3.42 01/01/2012 to 05/31/2015 CR = 0.19	PDO = 13 INJ. 1 = 0 INJ. 2 = 0 INJ. 3 = 0 FATAL = 0
WET = 5 DRY = 8		

HDR | ICA

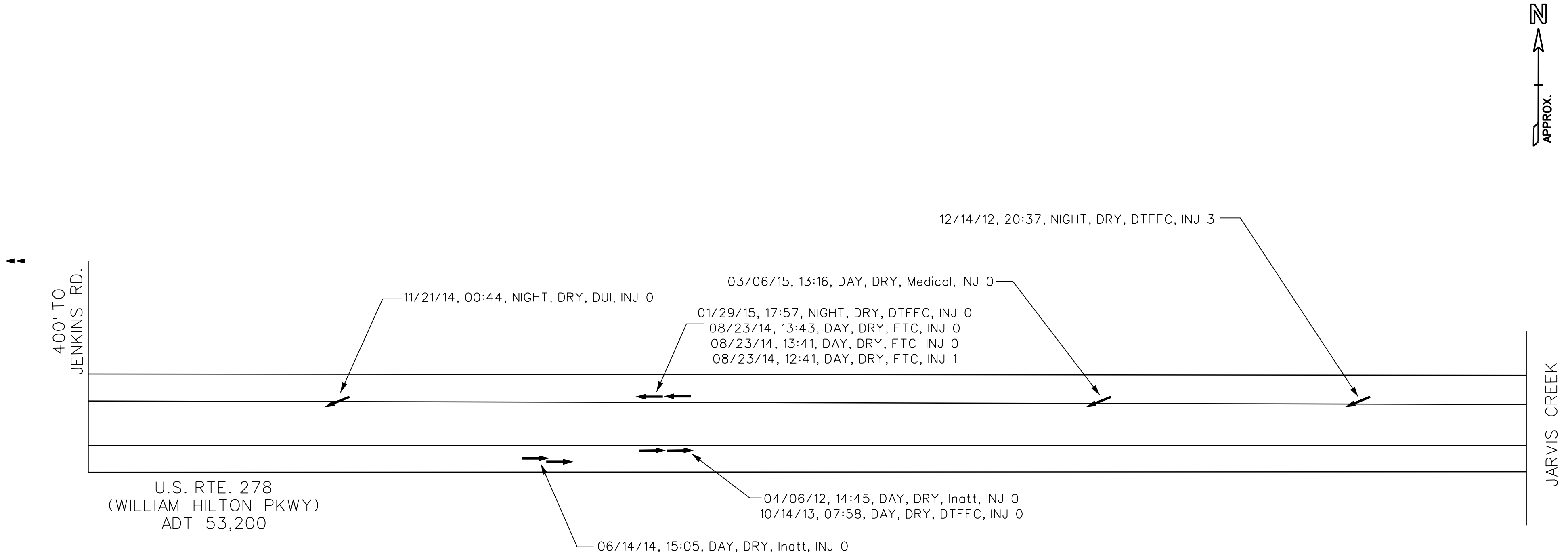
ICA Engineering Inc.
501 Huger St, Columbia SC, 29201

BEAUFORT COUNTY

FIGURE C-4

U.S.RTE. 278
(WILLIAM HILTON PKWY) / JENKINS RD.
COLLISION DIAGRAM

NOT TO SCALE SEP 2015



LEGEND

DSS - Disregarded Sign or Signal
Inatt - Inattention
DTFFC - Driving Too Fast for Conditions
FYRW - Failure to Yeild Right of Way
ROR - Ran off Road
FTC - Followed Too Closely
AOV - Agressive Operation of Vehicle
SAO - Swerving to Avoid Object
DUI - Under the Influence
Imp Lc - Improper Lane Change

RA - Right Angle
RE - Rear End
SS - Side Swipe
HO - Head On
OC - Out of Control
HA - Hit Animal
OTH - Other

YR	2012	2013	2014	2015
RA	0	0	0	0
RE	1	1	3	1
SS	0	0	1	0
HO	0	0	0	0
OC	1	0	1	1
HA	0	0	0	0
OTH	0	0	0	0
Total	2	1	5	2

NIGHT = 3 DAY = 7	Total = 10 AADT = 53,200 Years = 3.42 01/01/2012 to 05/31/2015	PDO = 8 INJ. 1 = 1 INJ. 2 = 0 INJ. 3 = 1 FATAL = 0
WET = 0 DRY = 10		

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ICA Engineering Inc.
501 Huger St, Columbia SC, 29201

BEAUFORT COUNTY

FIGURE C-5

U.S.RTE. 278 (WILLIAM HILTON PKWY) EAST OF JENKINS RD.

NOT TO SCALE SEP 2015

Methodology – Intersection AADT Estimation

Intersections	12 hr. Volume		AADT Factor = AADT on US 278 (53,200)/(12 hr. EB+WB)	Estimated AADT = 12 hr. Total Entering Volume * AADT Factor
	NB/SB Total	EB+WB Total		
Blue Heron Point @ US 278	214	48,288	1.10	53,400
Crosstree Drive @ US 278	913	47,569	1.12	54,300
Jenkins Road @ US 278	241	48,429	1.10	53,600

53,200 is counted AADT on US 278 from SCDOT

D

Appendix D - Signal Warrant Analysis Supporting Information

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TABLE 1
TRAFFIC SIGNAL WARRANT ANALYSIS
2015 EXISTING TRAFFIC VOLUME

SCENARIO 1 : FOR EXISTING CONDITION - CONSIDERING 50% RIGHT-TURNING VOLIUME

INTERSECTION: ***US 278 at Blue Heron Point***

MAJOR STREET: *US Highway 278* NO OF LANES FOR MOVING TRAFFIC: *2 OR MORE*
MINOR STREET: *Blue Heron Point* NO OF LANES FOR MOVING TRAFFIC: *1*

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): *N*
85th PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): *Y*

WARRANT 1: EIGHT-HOUR VEHICULAR VOLUME

HOUR	MAJOR ST BOTH	MINOR ST HIGHEST	WARRANT 1, CONDITION A					WARRANT 1, CONDITION B				
			MAJOR ST THRESHOLD VALUE	% MET	MINOR ST THRESHOLD VALUE	% MET	BOTH MET	MAJOR ST THRESHOLD VALUE	% MET	MINOR ST THRESHOLD VALUE	% MET	BOTH MET
0700-0800	3948	12	420	940%	105	11%	N	630	627%	53	23%	N
0800-0900	4247	16	420	1011%	105	15%	N	630	674%	53	30%	N
0900-1000	3733	11	420	889%	105	10%	N	630	593%	53	21%	N
1000-1100	3573	16	420	851%	105	15%	N	630	567%	53	30%	N
1100-1200	3674	13	420	875%	105	12%	N	630	583%	53	25%	N
1200-1300	3778	12	420	900%	105	11%	N	630	600%	53	23%	N
1300-1400	3791	6	420	903%	105	6%	N	630	602%	53	11%	N
1400-1500	4003	13	420	953%	105	12%	N	630	635%	53	25%	N
1500-1600	4554	17	420	1084%	105	16%	N	630	723%	53	32%	N
1600-1700	4661	10	420	1110%	105	10%	N	630	740%	53	19%	N
1700-1800	4792	18	420	1141%	105	17%	N	630	761%	53	34%	N
1800-1900	3307	12	420	787%	105	11%	N	630	525%	53	23%	N
							0					**0**
			8 HOURS REQUIRED **NOT SATISFIED**					8 HOURS REQUIRED **NOT SATISFIED**				

REMARK: WARRANT 1 IS NOT SATISFIED

TABLE 2
TRAFFIC SIGNAL WARRANT ANALYSIS
2015 EXISTING TRAFFIC VOLUME

SCENARIO 1 : FOR EXISTING CONDITION - CONSIDERING 50% RIGHT-TURNING VOLIUME

INTERSECTION: ***US 278 at Blue Heron Point***

MAJOR STREET: *US Highway 278* NO OF LANES FOR MOVING TRAFFIC: *2 OR MORE*
MINOR STREET: *Blue Heron Point* NO OF LANES FOR MOVING TRAFFIC: *1 (Minor St Left)*

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): *N*
85th PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): *Y*

WARRANT 2: HOUR-HOUR VEHICULAR VOLUME

HOUR	MAJOR ST BOTH	MINOR ST HIGHEST	APPROX. MINOR ST THRESHOLD VALUE	% MET	MET
0800-0900	4247	16	60	27%	N
1000-1100	3573	16	60	27%	N
1500-1600	4554	17	60	28%	N
1700-1800	4792	18	60	30%	N
					0
			4 HOURS REQUIRED **NOT SATISFIED**		

REMARK: WARRANT 2 IS NOT SATISFIED

TABLE 3
TRAFFIC SIGNAL WARRANT ANALYSIS
2015 EXISTING TRAFFIC VOLUME

SCENARIO 1 : FOR EXISTING CONDITION - CONSIDERING 50% RIGHT-TURNING VOLIUME

INTERSECTION: ***US 278 at Blue Heron Point***

MAJOR STREET: *US Highway 278* NO OF LANES FOR MOVING TRAFFIC: *2 OR MORE*
MINOR STREET: *Blue Heron Point* NO OF LANES FOR MOVING TRAFFIC: *1 (Minor St Left)*

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): *N*
85th PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): *Y*

WARRANT 3: PEAK-HOUR VEHICULAR VOLUME

HOUR	MAJOR ST BOTH	MINOR ST HIGHEST	APPROX. MINOR ST THRESHOLD VALUE	% MET	MET
1700-1800	4792	18	75	24%	N
					0
			1 HOUR REQUIRED **NOT SATISFIED**		

REMARK: WARRANT 3 IS NOT SATISFIED

TABLE 1
TRAFFIC SIGNAL WARRANT ANALYSIS
2015 EXISTING TRAFFIC VOLUME

SCENARIO 1 : FOR EXISTING CONDITION - ONLY CONSIDERING LEFT-TURNING VOLUME

INTERSECTION: ***US 278 at Gateway Dr./Crosstree Dr.***

MAJOR STREET: *US Highway 278* — NO OF LANES FOR MOVING TRAFFIC: *2 OR MORE*
MINOR STREET: *Crosstree Drive* — NO OF LANES FOR MOVING TRAFFIC: *1 (Minor St Left)*

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): *N*
85th PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): *Y*

WARRANT 1: EIGHT-HOUR VEHICULAR VOLUME

HOUR	MAJOR ST BOTH	MINOR ST HIGHEST	WARRANT 1, CONDITION A					WARRANT 1, CONDITION B				
			MAJOR ST THRESHOLD VALUE	% MET	MINOR ST THRESHOLD VALUE	% MET	BOTH MET	MAJOR ST THRESHOLD VALUE	% MET	MINOR ST THRESHOLD VALUE	% MET	BOTH MET
0700-0800	3984	11	420	949%	105	10%	N	630	632%	53	21%	N
0800-0900	4270	19	420	1017%	105	18%	N	630	678%	53	36%	N
0900-1000	3693	36	420	879%	105	34%	N	630	586%	53	68%	N
1000-1100	3573	29	420	851%	105	28%	N	630	567%	53	55%	N
1100-1200	3648	26	420	869%	105	25%	N	630	579%	53	49%	N
1200-1300	3755	32	420	894%	105	30%	N	630	596%	53	60%	N
1300-1400	3756	29	420	894%	105	28%	N	630	596%	53	55%	N
1400-1500	4023	26	420	958%	105	25%	N	630	639%	53	49%	N
1500-1600	4531	23	420	1079%	105	22%	N	630	719%	53	43%	N
1600-1700	4700	27	420	1119%	105	26%	N	630	746%	53	51%	N
1700-1800	4818	21	420	1147%	105	20%	N	630	765%	53	40%	N
1800-1900	3460	17	420	824%	105	16%	N	630	549%	53	32%	N
							0					**0**
			8 HOURS REQUIRED **NOT SATISFIED**					8 HOURS REQUIRED **NOT SATISFIED**				

REMARK: WARRANT 1 IS NOT SATISFIED

TABLE 2
TRAFFIC SIGNAL WARRANT ANALYSIS
2015 EXISTING TRAFFIC VOLUME

SCENARIO 1 : FOR EXISTING CONDITION - ONLY CONSIDERING LEFT-TURNING VOLUME

INTERSECTION: ***US 278 at Gateway Dr./Crosstree Dr.***

MAJOR STREET: *US Highway 278* NO OF LANES FOR MOVING TRAFFIC: *2 OR MORE*
MINOR STREET: *Crosstree Drive* NO OF LANES FOR MOVING TRAFFIC: *1 (Minor St Left)*

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): *N*
85th PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): *Y*

WARRANT 2: HOUR-HOUR VEHICULAR VOLUME

HOUR	MAJOR ST BOTH	MINOR ST HIGHEST	APPROX. MINOR ST THRESHOLD VALUE	% MET	MET
0900-1000	3693	36	60	60%	N
1000-1100	3573	29	60	48%	N
1100-1200	3648	26	60	43%	N
1200-1300	3755	32	60	53%	N
					0
			4 HOURS REQUIRED **NOT SATISFIED**		

REMARK: WARRANT 2 IS NOT SATISFIED

TABLE 3
TRAFFIC SIGNAL WARRANT ANALYSIS
2015 EXISTING TRAFFIC VOLUME

SCENARIO 1 : FOR EXISTING CONDITION - ONLY CONSIDERING LEFT-TURNING VOLUME

INTERSECTION: ***US 278 at Gateway Dr./Crosstree Dr.***

MAJOR STREET: *US Highway 278* NO OF LANES FOR MOVING TRAFFIC: *2 OR MORE*
MINOR STREET: *Crosstree Drive* NO OF LANES FOR MOVING TRAFFIC: *1 (Minor St Left)*

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): *N*
85th PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): *Y*

WARRANT 3: PEAK-HOUR VEHICULAR VOLUME

HOUR	MAJOR ST BOTH	MINOR ST HIGHEST	APPROX. MINOR ST THRESHOLD VALUE	% MET	MET
0900-1000	3693	36	75	48%	N
					0
			1 HOUR REQUIRED **NOT SATISFIED**		

REMARK: WARRANT 3 IS NOT SATISFIED

TABLE 1
TRAFFIC SIGNAL WARRANT ANALYSIS
2015 EXISTING TRAFFIC VOLUME

SCENARIO 1 : FOR EXISTING CONDITION - CONSIDERING 50% RIGHT-TURNING VOLIUME

INTERSECTION: ***US 278 at Jenkins Rd.***

MAJOR STREET: *US Highway 278* NO OF LANES FOR MOVING TRAFFIC: *2 OR MORE*
MINOR STREET: *Jenkins Rd.* NO OF LANES FOR MOVING TRAFFIC: *1*

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): *N*
85th PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): *Y*

WARRANT 1: EIGHT-HOUR VEHICULAR VOLUME

HOUR	MAJOR ST BOTH	MINOR ST HIGHEST	WARRANT 1, CONDITION A					WARRANT 1, CONDITION B				
			MAJOR ST THRESHOLD VALUE	% MET	MINOR ST THRESHOLD VALUE	% MET	BOTH MET	MAJOR ST THRESHOLD VALUE	% MET	MINOR ST THRESHOLD VALUE	% MET	BOTH MET
0700-0800	3968	12	420	945%	105	11%	N	630	630%	53	23%	N
0800-0900	4283	15	420	1020%	105	14%	N	630	680%	53	28%	N
0900-1000	3684	18	420	877%	105	17%	N	630	585%	53	34%	N
1000-1100	3526	37	420	840%	105	35%	N	630	560%	53	70%	N
1100-1200	3687	37	420	878%	105	35%	N	630	585%	53	70%	N
1200-1300	3711	15	420	884%	105	14%	N	630	589%	53	28%	N
1300-1400	3775	21	420	899%	105	20%	N	630	599%	53	40%	N
1400-1500	4036	26	420	961%	105	25%	N	630	641%	53	49%	N
1500-1600	4580	24	420	1090%	105	23%	N	630	727%	53	45%	N
1600-1700	4687	28	420	1116%	105	27%	N	630	744%	53	53%	N
1700-1800	4746	16	420	1130%	105	15%	N	630	753%	53	30%	N
1800-1900	3465	25	420	825%	105	24%	N	630	550%	53	47%	N
							0					**0**
			8 HOURS REQUIRED **NOT SATISFIED**					8 HOURS REQUIRED **NOT SATISFIED**				

REMARK: WARRANT 1 IS NOT SATISFIED

TABLE 2
TRAFFIC SIGNAL WARRANT ANALYSIS
2015 EXISTING TRAFFIC VOLUME

SCENARIO 1 : FOR EXISTING CONDITION - CONSIDERING 50% RIGHT-TURNING VOLIUME

INTERSECTION: ***US 278 at Jenkins Rd.***

MAJOR STREET: *US Highway 278*
MINOR STREET: *Jenkins Rd.*

NO OF LANES FOR MOVING TRAFFIC: *2 OR MORE*
NO OF LANES FOR MOVING TRAFFIC: *1 (Minor St Left)*

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): *N*
85th PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): *Y*

WARRANT 2: HOUR-HOUR VEHICULAR VOLUME

HOUR	MAJOR ST BOTH	MINOR ST HIGHEST	APPROX. MINOR ST THRESHOLD VALUE	% MET	MET
1000-1100	3526	37	60	62%	N
1100-1200	3687	37	60	62%	N
1400-1500	4036	26	60	43%	N
1600-1700	4687	28	60	47%	N
					0
			4 HOURS REQUIRED **NOT SATISFIED**		

REMARK: WARRANT 2 IS NOT SATISFIED

TABLE 3
TRAFFIC SIGNAL WARRANT ANALYSIS
2015 EXISTING TRAFFIC VOLUME

SCENARIO 1 : FOR EXISTING CONDITION - CONSIDERING 50% RIGHT-TURNING VOLIUME

INTERSECTION: ***US 278 at Jenkins Rd.***

MAJOR STREET: *US Highway 278* NO OF LANES FOR MOVING TRAFFIC: *2 OR MORE*
MINOR STREET: *Jenkins Rd.* NO OF LANES FOR MOVING TRAFFIC: *1 (Minor St Left)*

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): *N*
85th PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): *Y*

WARRANT 3: PEAK-HOUR VEHICULAR VOLUME

HOUR	MAJOR ST BOTH	MINOR ST HIGHEST	APPROX. MINOR ST THRESHOLD VALUE	% MET	MET
1100-1200	3687	37	75	49%	N
					0
			1 HOUR REQUIRED **NOT SATISFIED**		

REMARK: WARRANT 3 IS NOT SATISFIED

TABLE 1
TRAFFIC SIGNAL WARRANT ANALYSIS
2015 EXISTING TRAFFIC VOLUME

SCENARIO 2 : FOR RELOCATED CROSSTREE DR. ACROSS FROM JENKINS RD.

INTERSECTION: ***US 278 at relocated Crosstree Dr./Jenkins RD.***

MAJOR STREET: *US Highway 278* NO OF LANES FOR MOVING TRAFFIC: *2 OR MORE*
MINOR STREET: *Crosstree Drive/Jenkind Rd.* NO OF LANES FOR MOVING TRAFFIC: 2

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): *N*
85th PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): *Y*

WARRANT 1: EIGHT-HOUR VEHICULAR VOLUME

HOUR	MAJOR ST BOTH	MINOR ST HIGHEST	WARRANT 1, CONDITION A					WARRANT 1, CONDITION B				
			MAJOR ST THRESHOLD VALUE	% MET	MINOR ST THRESHOLD VALUE	% MET	BOTH MET	MAJOR ST THRESHOLD VALUE	% MET	MINOR ST THRESHOLD VALUE	% MET	BOTH MET
0700-0800	3984	29	420	949%	140	21%	N	630	632%	70	41%	N
0800-0900	4270	47	420	1017%	140	34%	N	630	678%	70	67%	N
0900-1000	3693	68	420	879%	140	49%	N	630	586%	70	97%	N
1000-1100	3573	57	420	851%	140	41%	N	630	567%	70	81%	N
1100-1200	3648	66	420	869%	140	47%	N	630	579%	70	94%	N
1200-1300	3755	62	420	894%	140	44%	N	630	596%	70	89%	N
1300-1400	3756	29	420	894%	140	21%	N	630	596%	70	41%	N
1400-1500	4023	57	420	958%	140	41%	N	630	639%	70	81%	N
1500-1600	4531	50	420	1079%	140	36%	N	630	719%	70	71%	N
1600-1700	4700	48	420	1119%	140	34%	N	630	746%	70	69%	N
1700-1800	4818	43	420	1147%	140	31%	N	630	765%	70	61%	N
1800-1900	3460	32	420	824%	140	23%	N	630	549%	70	46%	N
							0					**0**
			8 HOURS REQUIRED **NOT SATISFIED**					8 HOURS REQUIRED **NOT SATISFIED**				

REMARK: WARRANT 1 IS NOT SATISFIED

TABLE 2
TRAFFIC SIGNAL WARRANT ANALYSIS
2015 EXISTING TRAFFIC VOLUME

SCENARIO 2 : FOR RELOCATED CROSSTREE DR. ACROSS FROM JENKINS RD.

INTERSECTION: ***US 278 at relocated Crosstree Dr./Jenkins Rd.***

MAJOR STREET: *US Highway 278* NO OF LANES FOR MOVING TRAFFIC: *2 OR MORE*
MINOR STREET: *Crosstree Drive/Jenkind Rd.* NO OF LANES FOR MOVING TRAFFIC: 2

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): *N*
85th PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): *Y*

WARRANT 2: HOUR-HOUR VEHICULAR VOLUME

HOUR	MAJOR ST BOTH	MINOR ST HIGHEST	APPROX. MINOR ST THRESHOLD VALUE	% MET	MET
0900-1000	3693	68	80	85%	N
1000-1100	3573	57	80	71%	N
1100-1200	3648	66	80	83%	N
1200-1300	3755	62	80	78%	N
					0
			4 HOURS REQUIRED **NOT SATISFIED**		

REMARK: WARRANT 2 IS NOT SATISFIED

TABLE 3
TRAFFIC SIGNAL WARRANT ANALYSIS
2015 EXISTING TRAFFIC VOLUME

SCENARIO 2 : FOR RELOCATED CROSSTREE DR. ACROSS FROM JENKINS RD.

INTERSECTION: ***US 278 at relocated Crosstree Dr./Jenkins Rd.***

MAJOR STREET: *US Highway 278* NO OF LANES FOR MOVING TRAFFIC: *2 OR MORE*
MINOR STREET: *Crosstree Drive/Jenkind Rd.* NO OF LANES FOR MOVING TRAFFIC: 2

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): *N*
85th PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): *Y*

WARRANT 3: PEAK-HOUR VEHICULAR VOLUME

HOUR	MAJOR ST BOTH	MINOR ST HIGHEST	APPROX. MINOR ST THRESHOLD VALUE	% MET	MET
0900-1000	3693	68	100	68%	N
					0
			1 HOUR REQUIRED **NOT SATISFIED**		

REMARK: WARRANT 3 IS NOT SATISFIED

TABLE 1
TRAFFIC SIGNAL WARRANT ANALYSIS
2015 EXISTING TRAFFIC VOLUME

SCENARIO 3 : FOR MODIFIED SUPER STREET

INTERSECTION: ***US 278 at Proposed Blue Heron Point***

MAJOR STREET: US Highway 278 — NO OF LANES FOR MOVING TRAFFIC: *2 OR MORE*
MINOR STREET: Blue Heron Point — NO OF LANES FOR MOVING TRAFFIC: *1*

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): *N*
85th PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): *Y*

WARRANT 1: EIGHT-HOUR VEHICULAR VOLUME

HOUR	MAJOR ST OPPOSING EB	MAJOR ST LT WBL+U	WARRANT 1, CONDITION A					WARRANT 1, CONDITION B				
			MAJOR ST THRESHOLD VALUE	% MET	MINOR ST THRESHOLD VALUE	% MET	BOTH MET	MAJOR ST THRESHOLD VALUE	% MET	MINOR ST THRESHOLD VALUE	% MET	BOTH MET
0700-0800	1963	23	420	467%	105	22%	N	630	312%	53	43%	N
0800-0900	2066	47	420	492%	105	45%	N	630	328%	53	89%	N
0900-1000	1541	73	420	367%	105	70%	N	630	245%	53	138%	Y
1000-1100	1422	88	420	339%	105	84%	N	630	226%	53	166%	Y
1100-1200	1831	90	420	436%	105	86%	N	630	291%	53	170%	Y
1200-1300	1839	68	420	438%	105	65%	N	630	292%	53	128%	Y
1300-1400	1879	77	420	447%	105	73%	N	630	298%	53	145%	Y
1400-1500	1946	80	420	463%	105	76%	N	630	309%	53	151%	Y
1500-1600	2038	91	420	485%	105	87%	N	630	323%	53	172%	Y
1600-1700	1858	98	420	442%	105	93%	N	630	295%	53	185%	Y
1700-1800	1882	75	420	448%	105	71%	N	630	299%	53	142%	Y
1800-1900	1529	78	420	364%	105	74%	N	630	243%	53	147%	Y
							0					**10**
			8 HOURS REQUIRED **NOT SATISFIED**					8 HOURS REQUIRED **SATISFIED**				

REMARK: WARRANT 1 IS SATISFIED

TABLE 2
TRAFFIC SIGNAL WARRANT ANALYSIS
2015 EXISTING TRAFFIC VOLUME

SCENARIO 3 : FOR MODIFIED SUPER STREET

INTERSECTION: ***US 278 at Proposed Blue Heron Point***

MAJOR STREET: US Highway 278 — NO OF LANES FOR MOVING TRAFFIC: *2 OR MORE*
MINOR STREET: Blue Heron Point — NO OF LANES FOR MOVING TRAFFIC: *1*

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): *N*
85th PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): *Y*

WARRANT 2: HOUR-HOUR VEHICULAR VOLUME

HOUR	MAJOR ST OPPOSING EB	MAJOR ST LT WBL+U	APPROX. MINOR ST THRESHOLD VALUE	% MET	MET
1000-1100	1422	88	60	147%	Y
1100-1200	1831	90	60	150%	Y
1500-1600	2038	91	60	152%	Y
1600-1700	1858	98	60	163%	Y
					4
			4 HOURS REQUIRED **NOT SATISFIED**		

REMARK: WARRANT 2 IS SATISFIED

TABLE 3
TRAFFIC SIGNAL WARRANT ANALYSIS
2015 EXISTING TRAFFIC VOLUME

SCENARIO 3 : FOR MODIFIED SUPER STREET

INTERSECTION: ***US 278 at Proposed Blue Heron Point***

MAJOR STREET: US Highway 278 NO OF LANES FOR MOVING TRAFFIC: *2 OR MORE*
MINOR STREET: Blue Heron Point NO OF LANES FOR MOVING TRAFFIC: *1*

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): *N*
85th PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): *Y*

WARRANT 3: PEAK-HOUR VEHICULAR VOLUME

HOUR	MAJOR ST OPPOSING EB	MAJOR ST LT WBL+U	APPROX. MINOR ST THRESHOLD VALUE	% MET	MET
1600-1700	1858	98	75	131%	Y
					1
			1 HOUR REQUIRED **SATISFIED**		

REMARK: WARRANT 3 IS SATISFIED

TABLE 1
TRAFFIC SIGNAL WARRANT ANALYSIS
2015 EXISTING TRAFFIC VOLUME

SCENARIO 3 : FOR MODIFIED SUPER STREET

INTERSECTION: ***US 278 at New Median U-Turn East of Jenkins Rd.***

MAJOR STREET: US Highway 278 — NO OF LANES FOR MOVING TRAFFIC: *2 OR MORE*
MINOR STREET: Median U-Turn — NO OF LANES FOR MOVING TRAFFIC: *1*

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): *N*
85th PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): *Y*

WARRANT 1: EIGHT-HOUR VEHICULAR VOLUME

HOUR	MAJOR ST OPPOSING WB	MAJOR ST U-TURN WB U-Turn	WARRANT 1, CONDITION A					WARRANT 1, CONDITION B				
			MAJOR ST THRESHOLD VALUE	% MET	MINOR ST THRESHOLD VALUE	% MET	BOTH MET	MAJOR ST THRESHOLD VALUE	% MET	MINOR ST THRESHOLD VALUE	% MET	BOTH MET
0700-0800	1208	24	420	288%	105	23%	N	630	192%	53	45%	N
0800-0900	1435	41	420	342%	105	39%	N	630	228%	53	77%	N
0900-1000	1612	56	420	384%	105	53%	N	630	256%	53	106%	Y
1000-1100	1715	49	420	408%	105	47%	N	630	272%	53	92%	N
1100-1200	1319	50	420	314%	105	48%	N	630	209%	53	94%	N
1200-1300	1470	54	420	350%	105	51%	N	630	233%	53	102%	Y
1300-1400	1430	40	420	340%	105	38%	N	630	227%	53	75%	N
1400-1500	1506	39	420	359%	105	37%	N	630	239%	53	74%	N
1500-1600	2556	37	420	609%	105	35%	N	630	406%	53	70%	N
1600-1700	2843	48	420	677%	105	46%	N	630	451%	53	91%	N
1700-1800	2860	55	420	681%	105	52%	N	630	454%	53	104%	Y
1800-1900	1861	32	420	443%	105	30%	N	630	295%	53	60%	N
							0					**3**
			8 HOURS REQUIRED **NOT SATISFIED**					8 HOURS REQUIRED **NOT SATISFIED**				

REMARK: WARRANT 1 IS NOT SATISFIED

TABLE 2
TRAFFIC SIGNAL WARRANT ANALYSIS
2015 EXISTING TRAFFIC VOLUME

SCENARIO 3 : FOR MODIFIED SUPER STREET

INTERSECTION: ***US 278 at New Median U-Turn East of Jenkins Rd.***

MAJOR STREET: US Highway 278 NO OF LANES FOR MOVING TRAFFIC: *2 OR MORE*
MINOR STREET: Median U-Turn NO OF LANES FOR MOVING TRAFFIC: *1*

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): *N*
85th PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): *Y*

WARRANT 2: HOUR-HOUR VEHICULAR VOLUME

HOUR	MAJOR ST OPPOSING WB	MAJOR ST U-TURN WB U-Turn	APPROX. MINOR ST THRESHOLD VALUE	% MET	MET
0900-1000	1612	56	60	93%	N
1100-1200	1319	50	60	83%	N
1200-1300	1470	54	60	90%	N
1700-1800	2860	55	60	92%	N
					0
			4 HOURS REQUIRED **NOT SATISFIED**		

REMARK: WARRANT 2 IS SATISFIED

TABLE 3
TRAFFIC SIGNAL WARRANT ANALYSIS
2015 EXISTING TRAFFIC VOLUME

SCENARIO 3 : FOR MODIFIED SUPER STREET

INTERSECTION: ***US 278 at New Median U-Turn East of Jenkins Rd.***

MAJOR STREET: US Highway 278 — NO OF LANES FOR MOVING TRAFFIC: *2 OR MORE*
MINOR STREET: Median U-Turn — NO OF LANES FOR MOVING TRAFFIC: *1*

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): *N*
85th PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): *Y*

WARRANT 3: PEAK-HOUR VEHICULAR VOLUME

HOUR	MAJOR ST OPPOSING SB	MAJOR ST U-TURN WB U-Turn	APPROX. MINOR ST THRESHOLD VALUE	% MET	MET
0900-1000	1612	56	75	75%	N
					0
			1 HOUR REQUIRED **NOT SATISFIED**		

REMARK: WARRANT 3 IS NOT SATISFIED

TABLE 1
TRAFFIC SIGNAL WARRANT ANALYSIS
2020 PROJECTED TRAFFIC VOLUME

SCENARIO 3 : FOR MODIFIED SUPER STREET

INTERSECTION: ***US 278 at Proposed Blue Heron Point***

MAJOR STREET: US Highway 278 NO OF LANES FOR MOVING TRAFFIC: *2 OR MORE*
MINOR STREET: Blue Heron Point NO OF LANES FOR MOVING TRAFFIC: *1*

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): *N*
85th PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): *Y*

WARRANT 1: EIGHT-HOUR VEHICULAR VOLUME

HOUR	MAJOR ST OPPOSING EB	MAJOR ST LT WBL+U	WARRANT 1, CONDITION A					WARRANT 1, CONDITION B				
			MAJOR ST THRESHOLD VALUE	% MET	MINOR ST THRESHOLD VALUE	% MET	BOTH MET	MAJOR ST THRESHOLD VALUE	% MET	MINOR ST THRESHOLD VALUE	% MET	BOTH MET
0700-0800	2002	23	420	477%	105	22%	N	630	318%	53	44%	N
0800-0900	2107	48	420	502%	105	46%	N	630	334%	53	90%	N
0900-1000	1572	74	420	374%	105	71%	N	630	249%	53	140%	Y
1000-1100	1450	90	420	345%	105	85%	N	630	230%	53	169%	Y
1100-1200	1868	92	420	445%	105	87%	N	630	296%	53	173%	Y
1200-1300	1876	69	420	447%	105	66%	N	630	298%	53	131%	Y
1300-1400	1917	79	420	456%	105	75%	N	630	304%	53	148%	Y
1400-1500	1985	82	420	473%	105	78%	N	630	315%	53	154%	Y
1500-1600	2079	93	420	495%	105	88%	N	630	330%	53	175%	Y
1600-1700	1895	100	420	451%	105	95%	N	630	301%	53	189%	Y
1700-1800	1920	77	420	457%	105	73%	N	630	305%	53	144%	Y
1800-1900	1560	80	420	371%	105	76%	N	630	248%	53	150%	Y
							0					**10**
			8 HOURS REQUIRED **NOT SATISFIED**					8 HOURS REQUIRED **SATISFIED**				

REMARK: WARRANT 1 IS SATISFIED

TABLE 2
TRAFFIC SIGNAL WARRANT ANALYSIS
2015 EXISTING TRAFFIC VOLUME

SCENARIO 3 : FOR MODIFIED SUPER STREET

INTERSECTION: ***US 278 at Proposed Blue Heron Point***

MAJOR STREET: US Highway 278 NO OF LANES FOR MOVING TRAFFIC: *2 OR MORE*
MINOR STREET: Blue Heron Point NO OF LANES FOR MOVING TRAFFIC: *1*

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): *N*
85th PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): *Y*

WARRANT 2: HOUR-HOUR VEHICULAR VOLUME

HOUR	MAJOR ST OPPOSING EB	MAJOR ST LT WBL+U	APPROX. MINOR ST THRESHOLD VALUE	% MET	MET
1000-1100	1826	79	60	131%	Y
1100-1200	1803	73	60	122%	Y
1500-1600	1988	80	60	133%	Y
1600-1700	1848	80	60	133%	Y
					4
			4 HOURS REQUIRED **NOT SATISFIED**		

REMARK: WARRANT 2 IS SATISFIED

TABLE 3
TRAFFIC SIGNAL WARRANT ANALYSIS
2015 EXISTING TRAFFIC VOLUME

SCENARIO 3 : FOR MODIFIED SUPER STREET

INTERSECTION: ***US 278 at Proposed Blue Heron Point***

MAJOR STREET: US Highway 278 NO OF LANES FOR MOVING TRAFFIC: *2 OR MORE*
MINOR STREET: Blue Heron Point NO OF LANES FOR MOVING TRAFFIC: *1*

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): *N*
85th PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): *Y*

WARRANT 3: PEAK-HOUR VEHICULAR VOLUME

HOUR	MAJOR ST OPPOSING EB	MAJOR ST LT WBL+U	APPROX. MINOR ST THRESHOLD VALUE	% MET	MET
1600-1700	1848	80	75	106%	Y
					1
			1 HOUR REQUIRED **SATISFIED**		

REMARK: WARRANT 3 IS SATISFIED

TABLE 1
TRAFFIC SIGNAL WARRANT ANALYSIS
2020 PROJECTED TRAFFIC VOLUME

SCENARIO 3 : FOR MODIFIED SUPER STREET

INTERSECTION: ***US 278 at New Median U-Turn East of Jenkins Rd.***

MAJOR STREET: US Highway 278
MINOR STREET: Median U-Turn

NO OF LANES FOR MOVING TRAFFIC: *2 OR MORE*
NO OF LANES FOR MOVING TRAFFIC: *1*

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): *N*
85th PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): *Y*

WARRANT 1: EIGHT-HOUR VEHICULAR VOLUME

HOUR	MAJOR ST OPPOSING WB	MAJOR ST U-TURN WB U-Turn	WARRANT 1, CONDITION A					WARRANT 1, CONDITION B				
			MAJOR ST THRESHOLD VALUE	% MET	MINOR ST THRESHOLD VALUE	% MET	BOTH MET	MAJOR ST THRESHOLD VALUE	% MET	MINOR ST THRESHOLD VALUE	% MET	BOTH MET
0700-0800	1232	24	420	293%	105	23%	N	630	196%	53	46%	N
0800-0900	1464	42	420	349%	105	40%	N	630	232%	53	79%	N
0900-1000	1644	57	420	391%	105	54%	N	630	261%	53	108%	Y
1000-1100	1749	50	420	417%	105	48%	N	630	278%	53	94%	N
1100-1200	1345	51	420	320%	105	49%	N	630	214%	53	96%	N
1200-1300	1499	55	420	357%	105	52%	N	630	238%	53	104%	Y
1300-1400	1459	41	420	347%	105	39%	N	630	232%	53	77%	N
1400-1500	1536	40	420	366%	105	38%	N	630	244%	53	75%	N
1500-1600	2607	38	420	621%	105	36%	N	630	414%	53	71%	N
1600-1700	2900	49	420	690%	105	47%	N	630	460%	53	92%	N
1700-1800	2917	56	420	695%	105	53%	N	630	463%	53	106%	Y
1800-1900	1898	33	420	452%	105	31%	N	630	301%	53	62%	N
							0					**3**
			8 HOURS REQUIRED **NOT SATISFIED**					8 HOURS REQUIRED **NOT SATISFIED**				

REMARK: WARRANT 1 IS SATISFIED

TABLE 2
TRAFFIC SIGNAL WARRANT ANALYSIS
2020 PROJECTED TRAFFIC VOLUME

SCENARIO 3 : FOR MODIFIED SUPER STREET

INTERSECTION: ***US 278 at New Median U-Turn East of Jenkins Rd.***

MAJOR STREET: US Highway 278 — NO OF LANES FOR MOVING TRAFFIC: *2 OR MORE*
MINOR STREET: Median U-Turn — NO OF LANES FOR MOVING TRAFFIC: *1*

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): *N*
85th PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): *Y*

WARRANT 2: HOUR-HOUR VEHICULAR VOLUME

HOUR	MAJOR ST OPPOSING WB	MAJOR ST U-TURN WB U-Turn	APPROX. MINOR ST THRESHOLD VALUE	% MET	MET
0900-1000	1644	57	60	95%	N
1100-1200	1345	51	60	85%	N
1200-1300	1499	55	60	92%	N
1700-1800	2917	56	60	94%	N
					0
			4 HOURS REQUIRED **NOT SATISFIED**		

REMARK: WARRANT 2 IS SATISFIED

TABLE 3
TRAFFIC SIGNAL WARRANT ANALYSIS
2020 PROJECTED TRAFFIC VOLUME

SCENARIO 3 : FOR MODIFIED SUPER STREET

INTERSECTION: ***US 278 at New Median U-Turn East of Jenkins Rd.***

MAJOR STREET: US Highway 278 NO OF LANES FOR MOVING TRAFFIC: *2 OR MORE*
MINOR STREET: Median U-Turn NO OF LANES FOR MOVING TRAFFIC: *1*

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): *N*
85th PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): *Y*

WARRANT 3: PEAK-HOUR VEHICULAR VOLUME

HOUR	MAJOR ST OPPOSING WB	MAJOR ST U-TURN WB U-Turn	APPROX. MINOR ST THRESHOLD VALUE	% MET	MET
0900-1000	1644	57	75	76%	N
					0
			1 HOUR REQUIRED **NOT SATISFIED**		

REMARK: WARRANT 3 IS NOT SATISFIED

E

Appendix E - Operational Analysis Output Files

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Movement	EBT	EBR	WBU	WBL	WBT	NEL	NER
Lane Configurations							
Volume (veh/h)	2945	3	1	3	1386	7	21
Sign Control	Free				Free	Stop	
Grade	0%				0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	3005	3	0	3	1414	7	21
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None				None		
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked			0.00				
vC, conflicting volume			0	3008		3718	1503
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			0	3008		3718	1503
tC, single (s)			0.0	4.2		6.9	7.0
tC, 2 stage (s)							
tF (s)			0.0	2.3		3.5	3.3
p0 queue free %			0	97		0	80
cM capacity (veh/h)			0	104		3	109

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NE 1
Volume Total	1503	1503	3	3	707	707	29
Volume Left	0	0	0	3	0	0	7
Volume Right	0	0	3	0	0	0	21
cSH	1700	1700	1700	104	1700	1700	11
Volume to Capacity	0.88	0.88	0.00	0.03	0.42	0.42	2.55
Queue Length 95th (ft)	0	0	0	2	0	0	113
Control Delay (s)	0.0	0.0	0.0	40.6	0.0	0.0	1374.4
Lane LOS				E			F
Approach Delay (s)	0.0			0.1			1374.4
Approach LOS							F

Intersection Summary			
Average Delay	8.8		
Intersection Capacity Utilization	91.4%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	2948	25	20	1393	0	11	0	49	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	3039	26	21	1436	0	11	0	51	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		1			1							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1436			3039			3798	4516	1520	2997	4516	718
vC1, stage 1 conf vol							3039	3039		1477	1477	
vC2, stage 2 conf vol							759	1477		1520	3039	
vCu, unblocked vol	1436			3039			3798	4516	1520	2997	4516	718
tC, single (s)	4.2			4.3			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)							6.6	5.6		6.6	5.6	
tF (s)	2.3			2.3			3.5	4.0	3.3	3.6	4.1	3.4
p0 queue free %	100			78			0	100	52	100	100	100
cM capacity (veh/h)	449			94			11	22	106	28	6	362

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1
Volume Total	1520	1520	26	21	718	718	0	11	51	0
Volume Left	0	0	0	21	0	0	0	11	0	0
Volume Right	0	0	26	0	0	0	0	0	51	0
cSH	1700	1700	1700	94	1700	1700	1700	11	106	1700
Volume to Capacity	0.89	0.89	0.02	0.22	0.42	0.42	0.00	1.04	0.48	0.00
Queue Length 95th (ft)	0	0	0	19	0	0	0	52	53	0
Control Delay (s)	0.0	0.0	0.0	53.7	0.0	0.0	0.0	737.6	67.0	0.0
Lane LOS				F				F	F	A
Approach Delay (s)	0.0			0.8				190.0		0.0
Approach LOS								F		A

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Volume (veh/h)	4	6	2994	1379	18	9	12
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	6	3119	1436	19	9	12
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			Raised	Raised			
Median storage veh)			1	1			
Upstream signal (ft)							
pX, platoon unblocked	0.00						
vC, conflicting volume	0	1455				3018	728
vC1, stage 1 conf vol						1446	
vC2, stage 2 conf vol						1572	
vCu, unblocked vol	0	1455				3018	728
tC, single (s)	0.0	4.2				7.6	7.7
tC, 2 stage (s)						6.6	
tF (s)	0.0	2.3				3.9	3.7
p0 queue free %	0	99				83	96
cM capacity (veh/h)	0	441				56	291

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	6	1559	1559	958	498	22
Volume Left	6	0	0	0	0	9
Volume Right	0	0	0	0	19	12
cSH	441	1700	1700	1700	1700	103
Volume to Capacity	0.01	0.92	0.92	0.56	0.29	0.21
Queue Length 95th (ft)	1	0	0	0	0	19
Control Delay (s)	13.3	0.0	0.0	0.0	0.0	48.9
Lane LOS	B					E
Approach Delay (s)	0.0			0.0		48.9
Approach LOS						E

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	92.8%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBT	EBR	WBU	WBL	WBT	NEL	NER
Lane Configurations							
Volume (veh/h)	1898	7	3	17	3017	8	12
Sign Control	Free				Free	Stop	
Grade	0%				0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	1957	7	0	18	3110	8	12
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None				None		
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked			0.00				
vC, conflicting volume			0	1964		3547	978
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			0	1964		3547	978
tC, single (s)			0.0	4.1		6.8	6.9
tC, 2 stage (s)							
tF (s)			0.0	2.2		3.5	3.3
p0 queue free %			0	94		0	95
cM capacity (veh/h)			0	292		4	250

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NE 1
Volume Total	978	978	7	18	1555	1555	21
Volume Left	0	0	0	18	0	0	8
Volume Right	0	0	7	0	0	0	12
cSH	1700	1700	1700	292	1700	1700	10
Volume to Capacity	0.58	0.58	0.00	0.06	0.91	0.91	2.07
Queue Length 95th (ft)	0	0	0	5	0	0	88
Control Delay (s)	0.0	0.0	0.0	18.1	0.0	0.0	1238.4
Lane LOS				C			F
Approach Delay (s)	0.0			0.1			1238.4
Approach LOS							F

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (veh/h)	0	1894	27	2	56	3021	0	24	0	45	0	0
Sign Control		Free				Free			Stop			Stop
Grade		0%				0%			0%			0%
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	1953	28	0	58	3114	0	25	0	46	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised				Raised						
Median storage veh)		1				1						
Upstream signal (ft)												
pX, platoon unblocked				0.00								
vC, conflicting volume	3114			0	1953			3625	5182	976	4206	5182
vC1, stage 1 conf vol								1953	1953		3230	3230
vC2, stage 2 conf vol								1673	3230		976	1953
vCu, unblocked vol	3114			0	1953			3625	5182	976	4206	5182
tC, single (s)	4.1			0.0	4.1			7.6	6.6	7.0	7.5	6.5
tC, 2 stage (s)								6.6	5.6		6.5	5.5
tF (s)	2.2			0.0	2.2			3.6	4.1	3.4	3.5	4.0
p0 queue free %	100			0	80			23	100	81	100	100
cM capacity (veh/h)	102			0	295			32	14	243	7	13

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1
Volume Total	976	976	28	58	1557	1557	0	25	46	0
Volume Left	0	0	0	58	0	0	0	25	0	0
Volume Right	0	0	28	0	0	0	0	0	46	0
cSH	1700	1700	1700	295	1700	1700	1700	32	243	1700
Volume to Capacity	0.57	0.57	0.02	0.20	0.92	0.92	0.00	0.77	0.19	0.00
Queue Length 95th (ft)	0	0	0	18	0	0	0	65	17	0
Control Delay (s)	0.0	0.0	0.0	20.1	0.0	0.0	0.0	267.4	23.3	0.0
Lane LOS				C				F	C	A
Approach Delay (s)	0.0			0.4				108.2		0.0
Approach LOS								F		A

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	SBR
Lane Configurations	
Volume (veh/h)	0
Sign Control	
Grade	
Peak Hour Factor	0.97
Hourly flow rate (vph)	0
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	1557
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	1557
tC, single (s)	6.9
tC, 2 stage (s)	
tF (s)	3.3
p0 queue free %	100
cM capacity (veh/h)	102

Direction, Lane #

Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Volume (veh/h)	1	14	1913	3041	21	12	21
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	14	1972	3135	22	12	22
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			Raised	Raised			
Median storage veh)			1	1			
Upstream signal (ft)							
pX, platoon unblocked	0.00						
vC, conflicting volume	0	3157				4161	1578
vC1, stage 1 conf vol						3146	
vC2, stage 2 conf vol						1015	
vCu, unblocked vol	0	3157				4161	1578
tC, single (s)	0.0	4.4				7.2	7.3
tC, 2 stage (s)						6.2	
tF (s)	0.0	2.3				3.7	3.5
p0 queue free %	0	81				1	74
cM capacity (veh/h)	0	78				13	82

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	14	986	986	2090	1067	34
Volume Left	14	0	0	0	0	12
Volume Right	0	0	0	0	22	22
cSH	78	1700	1700	1700	1700	27
Volume to Capacity	0.19	0.58	0.58	1.23	0.63	1.25
Queue Length 95th (ft)	16	0	0	0	0	101
Control Delay (s)	61.5	0.0	0.0	0.0	0.0	472.7
Lane LOS	F					F
Approach Delay (s)	0.4			0.0		472.7
Approach LOS						F

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	94.7%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBT	EBR	WBU	WBL	WBT	NEL	NER
Lane Configurations							
Volume (veh/h)	2538	4	2	8	2004	2	10
Sign Control	Free				Free	Stop	
Grade	0%				0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	2590	4	0	8	2045	2	10
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None				None		
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked			0.00				
vC, conflicting volume			0	2594		3629	1295
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			0	2594		3629	1295
tC, single (s)			0.0	4.1		6.8	6.9
tC, 2 stage (s)							
tF (s)			0.0	2.2		3.5	3.3
p0 queue free %			0	95		43	93
cM capacity (veh/h)			0	165		4	153

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NE 1
Volume Total	1295	1295	4	8	1022	1022	12
Volume Left	0	0	0	8	0	0	2
Volume Right	0	0	4	0	0	0	10
cSH	1700	1700	1700	165	1700	1700	19
Volume to Capacity	0.76	0.76	0.00	0.05	0.60	0.60	0.63
Queue Length 95th (ft)	0	0	0	4	0	0	44
Control Delay (s)	0.0	0.0	0.0	28.0	0.0	0.0	353.7
Lane LOS				D			F
Approach Delay (s)	0.0			0.1			353.7
Approach LOS							F

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	2523	28	20	1999	0	20	0	27	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	0	2574	29	20	2040	0	20	0	28	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		1			1							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2040			2574			3635	4655	1287	3368	4655	1020
vC1, stage 1 conf vol							2574	2574		2081	2081	
vC2, stage 2 conf vol							1061	2081		1287	2574	
vCu, unblocked vol	2040			2574			3635	4655	1287	3368	4655	1020
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			88			5	100	82	100	100	100
cM capacity (veh/h)	273			168			21	29	155	32	21	234

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1
Volume Total	1287	1287	29	20	1020	1020	0	20	28	0
Volume Left	0	0	0	20	0	0	0	20	0	0
Volume Right	0	0	29	0	0	0	0	0	28	0
cSH	1700	1700	1700	168	1700	1700	1700	21	155	1700
Volume to Capacity	0.76	0.76	0.02	0.12	0.60	0.60	0.00	0.95	0.18	0.00
Queue Length 95th (ft)	0	0	0	10	0	0	0	68	16	0
Control Delay (s)	0.0	0.0	0.0	29.4	0.0	0.0	0.0	429.9	33.2	0.0
Lane LOS				D				F	D	A
Approach Delay (s)	0.0			0.3				202.0		0.0
Approach LOS								F		A

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Volume (veh/h)	7	36	2500	6	2008	22	13	9
Sign Control			Free		Free		Stop	
Grade			0%		0%		0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	37	2577	0	2070	23	13	9
Pedestrians								
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type			Raised		Raised			
Median storage veh)			1		1			
Upstream signal (ft)								
pX, platoon unblocked	0.00			0.00				
vC, conflicting volume	0	2093		0			3444	1046
vC1, stage 1 conf vol							2081	
vC2, stage 2 conf vol							1363	
vCu, unblocked vol	0	2093		0			3444	1046
tC, single (s)	0.0	4.1		0.0			6.8	6.9
tC, 2 stage (s)							5.8	
tF (s)	0.0	2.2		0.0			3.5	3.3
p0 queue free %	0	86		0			74	96
cM capacity (veh/h)	0	260		0			53	225

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	37	1289	1289	1380	713	23
Volume Left	37	0	0	0	0	13
Volume Right	0	0	0	0	23	9
cSH	260	1700	1700	1700	1700	77
Volume to Capacity	0.14	0.76	0.76	0.81	0.42	0.30
Queue Length 95th (ft)	12	0	0	0	0	27
Control Delay (s)	21.1	0.0	0.0	0.0	0.0	70.8
Lane LOS	C					F
Approach Delay (s)	0.3			0.0		70.8
Approach LOS						F

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBT	EBR	WBU	WBL	WBT	NEL	NER
Lane Configurations							
Volume (veh/h)	2945	3	1	3	1386	7	21
Sign Control	Free				Free	Stop	
Grade	0%				0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	3065	3	0	3	1443	7	22
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None				None		
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked			0.00				
vC, conflicting volume			0	3068		3793	1533
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			0	3068		3793	1533
tC, single (s)			0.0	4.2		6.9	7.0
tC, 2 stage (s)							
tF (s)			0.0	2.3		3.5	3.3
p0 queue free %			0	97		0	79
cM capacity (veh/h)			0	98		3	103

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NE 1
Volume Total	1533	1533	3	3	721	721	29
Volume Left	0	0	0	3	0	0	7
Volume Right	0	0	3	0	0	0	22
cSH	1700	1700	1700	98	1700	1700	10
Volume to Capacity	0.90	0.90	0.00	0.03	0.42	0.42	2.93
Queue Length 95th (ft)	0	0	0	2	0	0	118
Control Delay (s)	0.0	0.0	0.0	42.8	0.0	0.0	1619.3
Lane LOS				E			F
Approach Delay (s)	0.0			0.1			1619.3
Approach LOS							F

Intersection Summary			
Average Delay	10.4		
Intersection Capacity Utilization	93.0%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	2948	25	20	1393	0	11	0	49	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	3100	26	21	1465	0	12	0	52	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		1			1							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1465			3100			3874	4607	1550	3057	4607	732
vC1, stage 1 conf vol							3100	3100		1507	1507	
vC2, stage 2 conf vol							774	1507		1550	3100	
vCu, unblocked vol	1465			3100			3874	4607	1550	3057	4607	732
tC, single (s)	4.2			4.3			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)							6.6	5.6		6.6	5.6	
tF (s)	2.3			2.3			3.5	4.0	3.3	3.6	4.1	3.4
p0 queue free %	100			76			0	100	49	100	100	100
cM capacity (veh/h)	437			89			10	20	101	24	4	355

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1
Volume Total	1550	1550	26	21	732	732	0	12	52	0
Volume Left	0	0	0	21	0	0	0	12	0	0
Volume Right	0	0	26	0	0	0	0	0	52	0
cSH	1700	1700	1700	89	1700	1700	1700	10	101	1700
Volume to Capacity	0.91	0.91	0.02	0.24	0.43	0.43	0.00	1.16	0.51	0.00
Queue Length 95th (ft)	0	0	0	21	0	0	0	55	57	0
Control Delay (s)	0.0	0.0	0.0	57.8	0.0	0.0	0.0	841.9	73.4	0.0
Lane LOS				F				F	F	A
Approach Delay (s)	0.0			0.8				214.3		0.0
Approach LOS								F		A

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	93.1%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Volume (veh/h)	4	6	2994	1379	18	9	12
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	6	3181	1465	19	10	13
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			Raised	Raised			
Median storage veh)			1	1			
Upstream signal (ft)							
pX, platoon unblocked	0.00						
vC, conflicting volume	0	1484				3078	742
vC1, stage 1 conf vol						1475	
vC2, stage 2 conf vol						1603	
vCu, unblocked vol	0	1484				3078	742
tC, single (s)	0.0	4.2				7.6	7.7
tC, 2 stage (s)						6.6	
tF (s)	0.0	2.3				3.9	3.7
p0 queue free %	0	99				82	96
cM capacity (veh/h)	0	430				53	284

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	6	1591	1591	977	508	22
Volume Left	6	0	0	0	0	10
Volume Right	0	0	0	0	19	13
cSH	430	1700	1700	1700	1700	99
Volume to Capacity	0.01	0.94	0.94	0.57	0.30	0.23
Queue Length 95th (ft)	1	0	0	0	0	20
Control Delay (s)	13.5	0.0	0.0	0.0	0.0	51.6
Lane LOS	B					F
Approach Delay (s)	0.0			0.0		51.6
Approach LOS						F

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	94.4%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBT	EBR	WBU	WBL	WBT	NEL	NER
Lane Configurations							
Volume (veh/h)	1898	7	3	17	3017	8	12
Sign Control	Free				Free	Stop	
Grade	0%				0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	1996	7	0	18	3173	8	13
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None				None		
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked			0.00				
vC, conflicting volume			0	2003		3618	998
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			0	2003		3618	998
tC, single (s)			0.0	4.1		6.8	6.9
tC, 2 stage (s)							
tF (s)			0.0	2.2		3.5	3.3
p0 queue free %			0	94		0	95
cM capacity (veh/h)			0	282		4	242

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NE 1
Volume Total	998	998	7	18	1586	1586	21
Volume Left	0	0	0	18	0	0	8
Volume Right	0	0	7	0	0	0	13
cSH	1700	1700	1700	282	1700	1700	9
Volume to Capacity	0.59	0.59	0.00	0.06	0.93	0.93	2.38
Queue Length 95th (ft)	0	0	0	5	0	0	92
Control Delay (s)	0.0	0.0	0.0	18.6	0.0	0.0	1454.4
Lane LOS				C			F
Approach Delay (s)	0.0			0.1			1454.4
Approach LOS							F

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	95.1%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (veh/h)	0	1894	27	2	56	3021	0	24	0	45	0	0
Sign Control		Free				Free			Stop			Stop
Grade		0%				0%			0%			0%
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	1992	28	0	59	3177	0	25	0	47	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised				Raised						
Median storage veh)		1				1						
Upstream signal (ft)												
pX, platoon unblocked				0.00								
vC, conflicting volume	3177			0	1992			3698	5286	996	4290	5286
vC1, stage 1 conf vol								1992	1992		3294	3294
vC2, stage 2 conf vol								1706	3294		996	1992
vCu, unblocked vol	3177			0	1992			3698	5286	996	4290	5286
tC, single (s)	4.1			0.0	4.1			7.6	6.6	7.0	7.5	6.5
tC, 2 stage (s)								6.6	5.6		6.5	5.5
tF (s)	2.2			0.0	2.2			3.6	4.1	3.4	3.5	4.0
p0 queue free %	100			0	79			17	100	80	100	100
cM capacity (veh/h)	96			0	285			30	12	236	6	11

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1
Volume Total	996	996	28	59	1588	1588	0	25	47	0
Volume Left	0	0	0	59	0	0	0	25	0	0
Volume Right	0	0	28	0	0	0	0	0	47	0
cSH	1700	1700	1700	285	1700	1700	1700	30	236	1700
Volume to Capacity	0.59	0.59	0.02	0.21	0.93	0.93	0.00	0.83	0.20	0.00
Queue Length 95th (ft)	0	0	0	19	0	0	0	69	18	0
Control Delay (s)	0.0	0.0	0.0	20.9	0.0	0.0	0.0	300.5	24.0	0.0
Lane LOS				C				F	C	A
Approach Delay (s)	0.0			0.4				120.2		0.0
Approach LOS								F		A

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	95.2%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	SBR
Lane Configurations	
Volume (veh/h)	0
Sign Control	
Grade	
Peak Hour Factor	0.97
Hourly flow rate (vph)	0
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	1588
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	1588
tC, single (s)	6.9
tC, 2 stage (s)	
tF (s)	3.3
p0 queue free %	100
cM capacity (veh/h)	97

Direction, Lane #

Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Volume (veh/h)	1	14	1913	3041	21	12	21
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	15	2012	3198	22	13	22
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			Raised	Raised			
Median storage veh)			1	1			
Upstream signal (ft)							
pX, platoon unblocked	0.00						
vC, conflicting volume	0	3220				4244	1610
vC1, stage 1 conf vol						3209	
vC2, stage 2 conf vol						1035	
vCu, unblocked vol	0	3220				4244	1610
tC, single (s)	0.0	4.4				7.2	7.3
tC, 2 stage (s)						6.2	
tF (s)	0.0	2.3				3.7	3.5
p0 queue free %	0	80				0	72
cM capacity (veh/h)	0	73				11	78

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	15	1006	1006	2132	1088	35
Volume Left	15	0	0	0	0	13
Volume Right	0	0	0	0	22	22
cSH	73	1700	1700	1700	1700	25
Volume to Capacity	0.20	0.59	0.59	1.25	0.64	1.38
Queue Length 95th (ft)	17	0	0	0	0	106
Control Delay (s)	66.3	0.0	0.0	0.0	0.0	546.6
Lane LOS	F					F
Approach Delay (s)	0.5			0.0		546.6
Approach LOS						F

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	96.4%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBT	EBR	WBU	WBL	WBT	NEL	NER
Lane Configurations							
Volume (veh/h)	2538	4	2	8	2004	2	10
Sign Control	Free				Free	Stop	
Grade	0%				0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	2642	4	0	8	2086	2	10
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None				None		
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked			0.00				
vC, conflicting volume			0	2646		3701	1321
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			0	2646		3701	1321
tC, single (s)			0.0	4.1		6.8	6.9
tC, 2 stage (s)							
tF (s)			0.0	2.2		3.5	3.3
p0 queue free %			0	95		35	93
cM capacity (veh/h)			0	157		3	147

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NE 1
Volume Total	1321	1321	4	8	1043	1043	12
Volume Left	0	0	0	8	0	0	2
Volume Right	0	0	4	0	0	0	10
cSH	1700	1700	1700	157	1700	1700	17
Volume to Capacity	0.78	0.78	0.00	0.05	0.61	0.61	0.73
Queue Length 95th (ft)	0	0	0	4	0	0	47
Control Delay (s)	0.0	0.0	0.0	29.2	0.0	0.0	420.8
Lane LOS				D			F
Approach Delay (s)	0.0			0.1			420.8
Approach LOS							F

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	2523	28	20	1999	0	20	0	27	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	0	2626	29	21	2081	0	21	0	28	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		1			1							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2081			2626			3708	4748	1313	3435	4748	1040
vC1, stage 1 conf vol							2626	2626		2122	2122	
vC2, stage 2 conf vol							1082	2122		1313	2626	
vCu, unblocked vol	2081			2626			3708	4748	1313	3435	4748	1040
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			87			0	100	81	100	100	100
cM capacity (veh/h)	263			160			20	28	149	30	19	227

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1
Volume Total	1313	1313	29	21	1040	1040	0	21	28	0
Volume Left	0	0	0	21	0	0	0	21	0	0
Volume Right	0	0	29	0	0	0	0	0	28	0
cSH	1700	1700	1700	160	1700	1700	1700	20	149	1700
Volume to Capacity	0.77	0.77	0.02	0.13	0.61	0.61	0.00	1.05	0.19	0.00
Queue Length 95th (ft)	0	0	0	11	0	0	0	71	17	0
Control Delay (s)	0.0	0.0	0.0	30.9	0.0	0.0	0.0	488.1	34.7	0.0
Lane LOS				D				F	D	A
Approach Delay (s)	0.0			0.3				227.6		0.0
Approach LOS								F		A

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Volume (veh/h)	7	36	2500	6	2008	22	13	9
Sign Control			Free		Free		Stop	
Grade			0%		0%		0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	38	2629	0	2112	23	14	9
Pedestrians								
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type			Raised		Raised			
Median storage veh)			1		1			
Upstream signal (ft)								
pX, platoon unblocked	0.00			0.00				
vC, conflicting volume	0	2135		0			3513	1067
vC1, stage 1 conf vol							2123	
vC2, stage 2 conf vol							1390	
vCu, unblocked vol	0	2135		0			3513	1067
tC, single (s)	0.0	4.1		0.0			6.8	6.9
tC, 2 stage (s)							5.8	
tF (s)	0.0	2.2		0.0			3.5	3.3
p0 queue free %	0	85		0			73	96
cM capacity (veh/h)	0	250		0			50	218

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	38	1314	1314	1408	727	23
Volume Left	38	0	0	0	0	14
Volume Right	0	0	0	0	23	9
cSH	250	1700	1700	1700	1700	73
Volume to Capacity	0.15	0.77	0.77	0.83	0.43	0.32
Queue Length 95th (ft)	13	0	0	0	0	29
Control Delay (s)	21.9	0.0	0.0	0.0	0.0	76.0
Lane LOS	C					F
Approach Delay (s)	0.3			0.0		76.0
Approach LOS						F

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	80.5%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBT	EBR	WBU	WBL	WBT	NEL	NER
Lane Configurations							
Volume (veh/h)	2945	3	1	3	1386	7	21
Sign Control	Free				Free	Stop	
Grade	0%				0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	3215	3	0	3	1513	8	23
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None				None		
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked			0.00				
vC, conflicting volume			0	3219		3726	1072
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			0	3219		3726	1072
tC, single (s)			0.0	4.2		6.9	7.0
tC, 2 stage (s)							
tF (s)			0.0	2.3		3.5	3.3
p0 queue free %			0	96		0	89
cM capacity (veh/h)			0	85		3	213

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NE 1
Volume Total	1072	1072	1072	3	3	504	504	504	31
Volume Left	0	0	0	0	3	0	0	0	8
Volume Right	0	0	0	3	0	0	0	0	23
cSH	1700	1700	1700	1700	85	1700	1700	1700	11
Volume to Capacity	0.63	0.63	0.63	0.00	0.04	0.30	0.30	0.30	2.68
Queue Length 95th (ft)	0	0	0	0	3	0	0	0	120
Control Delay (s)	0.0	0.0	0.0	0.0	48.9	0.0	0.0	0.0	1423.1
Lane LOS					E				F
Approach Delay (s)	0.0				0.1				1423.1
Approach LOS									F

Intersection Summary			
Average Delay	9.2		
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	2948	25	20	1393	0	11	0	49	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	3252	28	22	1537	0	12	0	54	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		1			1							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1537			3252			3808	4833	1084	2665	4833	512
vC1, stage 1 conf vol							3252	3252		1581	1581	
vC2, stage 2 conf vol							556	1581		1084	3252	
vCu, unblocked vol	1537			3252			3808	4833	1084	2665	4833	512
tC, single (s)	4.2			4.3			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)							6.6	5.6		6.6	5.6	
tF (s)	2.3			2.3			3.5	4.0	3.3	3.6	4.1	3.4
p0 queue free %	100			71			0	100	74	100	100	100
cM capacity (veh/h)	410			76			8	17	209	49	0	496

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1
Volume Total	1084	1084	1084	28	22	615	615	307	12	54	0
Volume Left	0	0	0	0	22	0	0	0	12	0	0
Volume Right	0	0	0	28	0	0	0	0	0	54	0
cSH	1700	1700	1700	1700	76	1700	1700	1700	8	209	1700
Volume to Capacity	0.64	0.64	0.64	0.02	0.29	0.36	0.36	0.18	1.53	0.26	0.00
Queue Length 95th (ft)	0	0	0	0	26	0	0	0	60	25	0
Control Delay (s)	0.0	0.0	0.0	0.0	70.2	0.0	0.0	0.0	1146.2	28.1	0.0
Lane LOS					F				F	D	A
Approach Delay (s)	0.0				1.0				233.1		0.0
Approach LOS									F		A

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Volume (veh/h)	4	6	2994	1379	18	9	12
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	7	3337	1537	20	10	13
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			Raised	Raised			
Median storage veh)			1	1			
Upstream signal (ft)							
pX, platoon unblocked	0.00						
vC, conflicting volume	0	1557				2673	522
vC1, stage 1 conf vol						1547	
vC2, stage 2 conf vol						1126	
vCu, unblocked vol	0	1557				2673	522
tC, single (s)	0.0	4.2				7.6	7.7
tC, 2 stage (s)						6.6	
tF (s)	0.0	2.3				3.9	3.7
p0 queue free %	0	98				86	97
cM capacity (veh/h)	0	402				69	411

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	7	1112	1112	1112	615	615	327	23
Volume Left	7	0	0	0	0	0	0	10
Volume Right	0	0	0	0	0	0	20	13
cSH	402	1700	1700	1700	1700	1700	1700	132
Volume to Capacity	0.02	0.65	0.65	0.65	0.36	0.36	0.19	0.18
Queue Length 95th (ft)	1	0	0	0	0	0	0	15
Control Delay (s)	14.1	0.0	0.0	0.0	0.0	0.0	0.0	38.0
Lane LOS	B							E
Approach Delay (s)	0.0				0.0			38.0
Approach LOS								E

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBU	WBL	WBT	NEL	NER
Lane Configurations							
Volume (veh/h)	1898	7	3	17	3017	8	12
Sign Control	Free				Free	Stop	
Grade	0%				0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	2094	8	0	19	3328	9	13
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None				None		
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked			0.00				
vC, conflicting volume			0	2101		3241	698
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			0	2101		3241	698
tC, single (s)			0.0	4.1		6.8	6.9
tC, 2 stage (s)							
tF (s)			0.0	2.2		3.5	3.3
p0 queue free %			0	93		0	97
cM capacity (veh/h)			0	258		7	383

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NE 1
Volume Total	698	698	698	8	19	1109	1109	1109	22
Volume Left	0	0	0	0	19	0	0	0	9
Volume Right	0	0	0	8	0	0	0	0	13
cSH	1700	1700	1700	1700	258	1700	1700	1700	16
Volume to Capacity	0.41	0.41	0.41	0.00	0.07	0.65	0.65	0.65	1.36
Queue Length 95th (ft)	0	0	0	0	6	0	0	0	82
Control Delay (s)	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	686.9
Lane LOS					C				F
Approach Delay (s)	0.0				0.1				686.9
Approach LOS									F

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (veh/h)	0	1894	27	2	56	3021	0	24	0	45	0	0
Sign Control		Free				Free			Stop			Stop
Grade		0%				0%			0%			0%
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	2089	30	0	62	3332	0	26	0	50	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised				Raised						
Median storage veh)		1				1						
Upstream signal (ft)												
pX, platoon unblocked				0.00								
vC, conflicting volume	3332			0	2089			3324	5545	696	4152	5545
vC1, stage 1 conf vol								2089	2089		3456	3456
vC2, stage 2 conf vol								1234	3456		696	2089
vCu, unblocked vol	3332			0	2089			3324	5545	696	4152	5545
tC, single (s)	4.1			0.0	4.1			7.6	6.6	7.0	7.5	6.5
tC, 2 stage (s)								6.6	5.6		6.5	5.5
tF (s)	2.2			0.0	2.2			3.6	4.1	3.4	3.5	4.0
p0 queue free %	100			0	76			24	100	87	100	100
cM capacity (veh/h)	83			0	261			35	10	375	5	9

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1
Volume Total	696	696	696	30	62	1333	1333	666	26	50	0
Volume Left	0	0	0	0	62	0	0	0	26	0	0
Volume Right	0	0	0	30	0	0	0	0	0	50	0
cSH	1700	1700	1700	1700	261	1700	1700	1700	35	375	1700
Volume to Capacity	0.41	0.41	0.41	0.02	0.24	0.78	0.78	0.39	0.76	0.13	0.00
Queue Length 95th (ft)	0	0	0	0	22	0	0	0	67	11	0
Control Delay (s)	0.0	0.0	0.0	0.0	23.0	0.0	0.0	0.0	247.5	16.1	0.0
Lane LOS					C				F	C	A
Approach Delay (s)	0.0				0.4				96.6		0.0
Approach LOS									F		A

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	SBR
Lane Configurations	
Volume (veh/h)	0
Sign Control	
Grade	
Peak Hour Factor	0.97
Hourly flow rate (vph)	0
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	1111
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	1111
tC, single (s)	6.9
tC, 2 stage (s)	
tF (s)	3.3
p0 queue free %	100
cM capacity (veh/h)	204

Direction, Lane #

Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Volume (veh/h)	1	14	1913	3041	21	12	21
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	15	2110	3355	23	13	23
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			Raised	Raised			
Median storage veh)			1	1			
Upstream signal (ft)							
pX, platoon unblocked	0.00						
vC, conflicting volume	0	3378				4100	1130
vC1, stage 1 conf vol						3366	
vC2, stage 2 conf vol						734	
vCu, unblocked vol	0	3378				4100	1130
tC, single (s)	0.0	4.4				7.2	7.3
tC, 2 stage (s)						6.2	
tF (s)	0.0	2.3				3.7	3.5
p0 queue free %	0	75				0	86
cM capacity (veh/h)	0	62				9	171

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	15	703	703	703	1342	1342	694	36
Volume Left	15	0	0	0	0	0	0	13
Volume Right	0	0	0	0	0	0	23	23
cSH	62	1700	1700	1700	1700	1700	1700	23
Volume to Capacity	0.25	0.41	0.41	0.41	0.79	0.79	0.41	1.55
Queue Length 95th (ft)	22	0	0	0	0	0	0	115
Control Delay (s)	80.7	0.0	0.0	0.0	0.0	0.0	0.0	632.3
Lane LOS	F							F
Approach Delay (s)	0.6				0.0			632.3
Approach LOS								F

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBT	EBR	WBU	WBL	WBT	NEL	NER
Lane Configurations							
Volume (veh/h)	2538	4	2	8	2004	2	10
Sign Control	Free				Free	Stop	
Grade	0%				0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	2771	4	0	9	2188	2	11
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None				None		
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked			0.00				
vC, conflicting volume			0	2775		3518	924
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			0	2775		3518	924
tC, single (s)			0.0	4.1		6.8	6.9
tC, 2 stage (s)							
tF (s)			0.0	2.2		3.5	3.3
p0 queue free %			0	94		49	96
cM capacity (veh/h)			0	139		4	271

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NE 1
Volume Total	924	924	924	4	9	729	729	729	13
Volume Left	0	0	0	0	9	0	0	0	2
Volume Right	0	0	0	4	0	0	0	0	11
cSH	1700	1700	1700	1700	139	1700	1700	1700	24
Volume to Capacity	0.54	0.54	0.54	0.00	0.06	0.43	0.43	0.43	0.55
Queue Length 95th (ft)	0	0	0	0	5	0	0	0	41
Control Delay (s)	0.0	0.0	0.0	0.0	32.6	0.0	0.0	0.0	275.1
Lane LOS					D				F
Approach Delay (s)	0.0				0.1				275.1
Approach LOS									F

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	2523	28	20	1999	0	20	0	27	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	0	2755	31	22	2183	0	22	0	29	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		1			1							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2183			2755			3526	4981	918	3144	4981	728
vC1, stage 1 conf vol							2755	2755		2226	2226	
vC2, stage 2 conf vol							771	2226		918	2755	
vCu, unblocked vol	2183			2755			3526	4981	918	3144	4981	728
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			85			0	100	89	100	100	100
cM capacity (veh/h)	240			142			17	24	274	30	14	366

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1
Volume Total	918	918	918	31	22	873	873	437	22	29	0
Volume Left	0	0	0	0	22	0	0	0	22	0	0
Volume Right	0	0	0	31	0	0	0	0	0	29	0
cSH	1700	1700	1700	1700	142	1700	1700	1700	17	274	1700
Volume to Capacity	0.54	0.54	0.54	0.02	0.15	0.51	0.51	0.26	1.27	0.11	0.00
Queue Length 95th (ft)	0	0	0	0	13	0	0	0	79	9	0
Control Delay (s)	0.0	0.0	0.0	0.0	34.9	0.0	0.0	0.0	626.9	19.7	0.0
Lane LOS					D				F	C	A
Approach Delay (s)	0.0				0.3				278.1		0.0
Approach LOS									F		A

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Volume (veh/h)	7	36	2500	6	2008	22	13	9
Sign Control			Free		Free		Stop	
Grade			0%		0%		0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	40	2758	0	2215	24	14	10
Pedestrians								
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type			Raised		Raised			
Median storage veh)			1		1			
Upstream signal (ft)								
pX, platoon unblocked	0.00			0.00				
vC, conflicting volume	0	2239		0			3226	750
vC1, stage 1 conf vol							2227	
vC2, stage 2 conf vol							999	
vCu, unblocked vol	0	2239		0			3226	750
tC, single (s)	0.0	4.1		0.0			6.8	6.9
tC, 2 stage (s)							5.8	
tF (s)	0.0	2.2		0.0			3.5	3.3
p0 queue free %	0	83		0			72	97
cM capacity (veh/h)	0	228		0			51	354

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	40	919	919	919	886	886	467	24
Volume Left	40	0	0	0	0	0	0	14
Volume Right	0	0	0	0	0	0	24	10
cSH	228	1700	1700	1700	1700	1700	1700	78
Volume to Capacity	0.17	0.54	0.54	0.54	0.52	0.52	0.27	0.31
Queue Length 95th (ft)	15	0	0	0	0	0	0	29
Control Delay (s)	24.1	0.0	0.0	0.0	0.0	0.0	0.0	70.4
Lane LOS	C							F
Approach Delay (s)	0.3				0.0			70.4
Approach LOS								F

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		

1: Blue Heron Pt Rd & US 278 Performance by movement

Movement	EBT	EBR	WBT	NER	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.6	2.2	3.2	0.5	3.4

2: Crossover Dr./Gateway Dr. & US 278 Performance by movement

Movement	EBT	EBR	WBT	WBR	NBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Del/Veh (s)	8.7	3.9	1.1	1.1	0.8	1.6	6.2

3: US 278 & Jenkins Rd Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.3	1.4	0.0	0.1
Total Del/Veh (s)	1.5	1.3	1.6	1.0	1.4

4: WH Dr. & Blue Heron Pt Rd Performance by movement

Movement	NBL	SET	SER	NWT	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.9	0.1	0.1	0.7	1.1

5: Blue Heron Pt Rd & MC Dr. Performance by movement

Movement	EBL	EBR	SET	SER	NWT	All
Denied Del/Veh (s)		0.1	0.0		0.0	0.0
Total Del/Veh (s)		1.7	0.0		0.3	0.4

6: Access Rd & Blue Heron Pt Rd Performance by movement

Movement	WBL	WBR	SEL	SET	NWT	NWR	All
Denied Del/Veh (s)	0.1	0.1		0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.5	2.0		0.0	1.1	0.6	1.1

7: Gateway Dr. & Access Rd Performance by movement

Movement	EBT	EBR	WBT	NBL	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.9	3.2	5.4	2.5	3.8

8: Jenkins Rd & Access Rd Performance by movement

Movement	EBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)	3.7	0.0	0.8	0.0	0.6

Total Network Performance

Denied Del/Veh (s)	1.1
Total Del/Veh (s)	18.7

1: Blue Heron Pt Rd & US 278 Performance by movement

Movement	EBT	EBR	WBT	NET	NER	All
Denied Del/Veh (s)	0.0	0.0	0.0		0.0	0.0
Total Del/Veh (s)	0.5	1.9	5.0		0.4	3.3

2: Crossover Dr./Gateway Dr. & US 278 Performance by movement

Movement	EBT	EBR	WBT	WBR	NBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Del/Veh (s)	1.4	1.7	6.7	1.6	0.9	1.6	4.5

3: US 278 & Jenkins Rd Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	2.9	4.8	0.0	1.8
Total Del/Veh (s)	0.6	14.3	12.8	0.8	9.2

4: WH Dr. & Blue Heron Pt Rd Performance by movement

Movement	NBL	SET	SER	NWT	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.7	1.1	0.3	0.9	1.6

5: Blue Heron Pt Rd & MC Dr. Performance by movement

Movement	EBL	EBR	SET	SER	NWL	NWT	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.9	2.2	0.1	0.0	1.4	0.5	0.7

6: Access Rd & Blue Heron Pt Rd Performance by movement

Movement	WBL	WBR	SEL	SET	NWT	NWR	All
Denied Del/Veh (s)			0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)			1.5	0.3	0.9	0.5	0.9

7: Gateway Dr. & Access Rd Performance by movement

Movement	EBT	EBR	WBT	NBL	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.9	2.6	4.6	4.0	4.0

8: Jenkins Rd & Access Rd Performance by movement

Movement	EBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.1	0.1
Total Del/Veh (s)	7.2	0.1	0.2	0.0	1.7

Total Network Performance

Denied Del/Veh (s)	1.9
Total Del/Veh (s)	20.4

1: Blue Heron Pt Rd & US 278 Performance by movement

Movement	EBT	EBR	WBT	NET	NER	All
Denied Del/Veh (s)	0.0	0.0	0.0		0.0	0.0
Total Del/Veh (s)	1.0	1.9	4.3		0.6	2.5

2: Crossover Dr./Gateway Dr. & US 278 Performance by movement

Movement	EBT	EBR	WBT	WBR	NBR	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1		0.0	0.0
Total Del/Veh (s)	2.7	2.6	1.9	0.8	0.7		1.6	2.3

3: US 278 & Jenkins Rd Performance by movement

Movement	EBT	WBT	WBR	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.5	1.3		0.0	0.2
Total Del/Veh (s)	1.1	2.0	1.1		0.6	1.5

4: WH Dr. & Blue Heron Pt Rd Performance by movement

Movement	NBL	SET	SER	NWT	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.0	0.1
Total Del/Veh (s)	3.9	0.2	0.2	0.7	1.0

5: Blue Heron Pt Rd & MC Dr. Performance by movement

Movement	EBR	SET	SER	NWT	All
Denied Del/Veh (s)	0.1	0.0		0.0	0.0
Total Del/Veh (s)	1.5	0.0		0.3	0.4

6: Access Rd & Blue Heron Pt Rd Performance by movement

Movement	WBR	SEL	SET	NWT	NWR	All
Denied Del/Veh (s)	0.1		0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.6		0.1	1.6	1.0	0.7

7: Gateway Dr. & Access Rd Performance by movement

Movement	EBT	EBR	WBT	NBL	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.4	3.2	5.1	3.6	4.5

8: Jenkins Rd & Access Rd Performance by movement

Movement	EBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.2	0.0
Total Del/Veh (s)	6.6	0.1	0.2	0.0	3.1

Total Network Performance

Denied Del/Veh (s)	0.6
Total Del/Veh (s)	10.4

1: Blue Heron Pt Rd & US 278 Performance by movement

Movement	EBT	EBR	WBT	NER	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.6	1.3	0.9	0.4	0.7

2: Crossover Dr./Gateway Dr. & US 278 Performance by movement

Movement	EBT	EBR	WBT	WBR	NBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Del/Veh (s)	1.7	2.3	0.8	1.0	0.7	1.4	1.4

3: US 278 & Jenkins Rd Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.1	2.2	0.0	0.1
Total Del/Veh (s)	0.8	1.0	0.7	0.8	0.9

4: WH Dr. & Blue Heron Pt Rd Performance by movement

Movement	NBL	SET	SER	NWT	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.6	0.3	0.5	1.3	1.3

5: Blue Heron Pt Rd & MC Dr. Performance by movement

Movement	EBR	SET	SER	NWL	NWT	All
Denied Del/Veh (s)	0.1	0.0			0.0	0.0
Total Del/Veh (s)	1.9	0.2			0.6	0.5

6: Access Rd & Blue Heron Pt Rd Performance by movement

Movement	WBL	WBR	SEL	SET	NWT	All
Denied Del/Veh (s)		0.1		0.0	0.0	0.0
Total Del/Veh (s)		2.1		0.1	1.8	1.5

7: Gateway Dr. & Access Rd Performance by movement

Movement	EBT	EBR	WBT	NBL	All
Denied Del/Veh (s)	0.3	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.3	2.6	5.8	2.5	3.6

8: Jenkins Rd & Access Rd Performance by movement

Movement	EBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)	6.0	0.0	0.4	0.0	0.7

Total Network Performance

Denied Del/Veh (s)	0.3
Total Del/Veh (s)	6.4

1: Blue Heron Pt Rd & US 278 Performance by movement

Movement	EBT	EBR	WBT	NET	NER	All
Denied Del/Veh (s)	0.0	0.0	0.0		0.0	0.0
Total Del/Veh (s)	0.4	2.0	1.9		0.4	1.3

2: Crossover Dr./Gateway Dr. & US 278 Performance by movement

Movement	EBT	EBR	WBT	WBR	NBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Del/Veh (s)	1.0	1.9	2.0	1.1	0.8	1.5	1.6

3: US 278 & Jenkins Rd Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.4	0.8	0.0	0.2
Total Del/Veh (s)	0.4	2.0	1.1	0.8	1.4

4: WH Dr. & Blue Heron Pt Rd Performance by movement

Movement	NBL	SET	SER	NWT	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.7	0.8	0.4	0.9	1.5

5: Blue Heron Pt Rd & MC Dr. Performance by movement

Movement	EBL	EBR	SET	SER	NWL	NWT	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0		0.0	0.0
Total Del/Veh (s)	3.0	2.0	0.1	0.0		0.5	0.5

6: Access Rd & Blue Heron Pt Rd Performance by movement

Movement	WBL	WBR	SEL	SET	NWT	NWR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.4	1.9	0.8	0.1	0.9	0.1	0.7

7: Gateway Dr. & Access Rd Performance by movement

Movement	EBT	EBR	WBT	NBL	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.4	2.5	7.2	3.2	3.7

8: Jenkins Rd & Access Rd Performance by movement

Movement	EBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	6.6	0.0	0.2	0.2	1.7

Total Network Performance

Denied Del/Veh (s)	0.3
Total Del/Veh (s)	6.7

1: Blue Heron Pt Rd & US 278 Performance by movement

Movement	EBT	EBR	WBT	NET	NER	All
Denied Del/Veh (s)	0.0	0.0	0.0		0.0	0.0
Total Del/Veh (s)	0.5	1.9	3.0		0.5	1.6

2: Crossover Dr./Gateway Dr. & US 278 Performance by movement

Movement	EBT	EBR	WBT	WBR	NBR	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	1.4	2.0	1.0	0.9	0.7	0.3	1.3	1.2

3: US 278 & Jenkins Rd Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.2	1.1	0.0	0.1
Total Del/Veh (s)	0.6	1.3	1.3	0.8	0.9

4: WH Dr. & Blue Heron Pt Rd Performance by movement

Movement	NBL	SET	SER	NWT	All
Denied Del/Veh (s)	0.1	0.0	0.1	0.0	0.1
Total Del/Veh (s)	4.5	0.8	0.2	1.0	1.0

5: Blue Heron Pt Rd & MC Dr. Performance by movement

Movement	EBR	SET	SER	NWT	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.5	0.1	0.0	0.5	0.5

6: Access Rd & Blue Heron Pt Rd Performance by movement

Movement	WBR	SEL	SET	NWT	NWR	All
Denied Del/Veh (s)	0.1		0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.6		0.1	1.3	0.8	0.8

7: Gateway Dr. & Access Rd Performance by movement

Movement	EBT	EBR	WBT	NBL	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.3	2.5	6.1	3.3	4.4

8: Jenkins Rd & Access Rd Performance by movement

Movement	EBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.3	0.1	0.1
Total Del/Veh (s)	6.3	0.2	1.0	0.0	2.8

Total Network Performance

Denied Del/Veh (s)	0.2
Total Del/Veh (s)	6.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	2945	3	0	0	0	0	0	28	30	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0							6.0		6.0	
Lane Util. Factor		0.91							1.00		1.00	
Frt		1.00							0.86		1.00	
Flt Protected		1.00							1.00		0.96	
Satd. Flow (prot)		4891							1580		1720	
Flt Permitted		1.00							1.00		0.96	
Satd. Flow (perm)		4891							1580		1720	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	0	3129	3	0	0	0	0	0	30	32	3	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	4	0	17	0
Lane Group Flow (vph)	0	3132	0	0	0	0	0	0	26	0	18	0
Heavy Vehicles (%)	6%	6%	33%	2%	6%	6%	6%	6%	4%	6%	2%	6%
Turn Type		NA							Perm	Perm	NA	
Protected Phases		2									4	
Permitted Phases									2	4		
Actuated Green, G (s)		116.7							116.7		7.4	
Effective Green, g (s)		116.7							116.7		7.4	
Actuated g/C Ratio		0.86							0.86		0.05	
Clearance Time (s)		6.0							6.0		6.0	
Vehicle Extension (s)		3.0							3.0		3.0	
Lane Grp Cap (vph)		4193							1354		93	
v/s Ratio Prot		c0.64										
v/s Ratio Perm									0.02		0.01	
v/c Ratio		0.75							0.02		0.19	
Uniform Delay, d1		3.8							1.4		61.5	
Progression Factor		1.00							1.00		1.00	
Incremental Delay, d2		0.8							0.0		1.0	
Delay (s)		4.6							1.4		62.5	
Level of Service		A							A		E	
Approach Delay (s)		4.6			0.0			1.4			62.5	
Approach LOS		A			A			A			E	

Intersection Summary			
HCM 2000 Control Delay	5.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	136.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations				↑↑↑	↰	
Volume (vph)	0	0	0	1397	28	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0	6.0	
Lane Util. Factor				0.91	1.00	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				4893	1703	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				4893	1703	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	0	0	0	1484	30	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	1484	30	0
Turn Type				NA	pm+pt	
Protected Phases				6	3	
Permitted Phases					6	
Actuated Green, G (s)				27.6	47.7	
Effective Green, g (s)				27.6	47.7	
Actuated g/C Ratio				0.46	0.80	
Clearance Time (s)				6.0	6.0	
Vehicle Extension (s)				3.0	3.0	
Lane Grp Cap (vph)				2262	1703	
v/s Ratio Prot				c0.30	c0.01	
v/s Ratio Perm					0.01	
v/c Ratio				0.66	0.02	
Uniform Delay, d1				12.4	1.2	
Progression Factor				1.00	1.00	
Incremental Delay, d2				0.7	0.0	
Delay (s)				13.1	1.2	
Level of Service				B	A	
Approach Delay (s)	0.0			13.1	1.2	
Approach LOS	A			B	A	

Intersection Summary			
HCM 2000 Control Delay	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	59.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	120.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	2958	45	0	0	0	60
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	3143	48	0	0	0	64
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1010					
pX, platoon unblocked			0.17		0.17	0.17
vC, conflicting volume			3191		3167	1072
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		0	0
tC, single (s)			4.2		6.9	7.0
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.3
p0 queue free %			100		100	65
cM capacity (veh/h)			270		172	183

Direction, Lane #	EB 1	EB 2	EB 3	NB 1
Volume Total	1257	1257	676	64
Volume Left	0	0	0	0
Volume Right	0	0	48	64
cSH	1700	1700	1700	183
Volume to Capacity	0.74	0.74	0.40	0.35
Queue Length 95th (ft)	0	0	0	37
Control Delay (s)	0.0	0.0	0.0	34.9
Lane LOS				D
Approach Delay (s)	0.0			34.9
Approach LOS				D

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	0	1401	24	0	21
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	0	1489	26	0	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			594			
pX, platoon unblocked	0.77				0.77	0.77
vC, conflicting volume	1514				1501	509
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	633				617	0
tC, single (s)	4.2				6.9	7.7
tC, 2 stage (s)						
tF (s)	2.3				3.6	3.7
p0 queue free %	100				100	97
cM capacity (veh/h)	710				319	751

Direction, Lane #	WB 1	WB 2	WB 3	SB 1
Volume Total	595	595	323	22
Volume Left	0	0	0	0
Volume Right	0	0	26	22
cSH	1700	1700	1700	751
Volume to Capacity	0.35	0.35	0.19	0.03
Queue Length 95th (ft)	0	0	0	2
Control Delay (s)	0.0	0.0	0.0	9.9
Lane LOS				A
Approach Delay (s)	0.0			9.9
Approach LOS				A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	38.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1898	7	0	0	0	0	0	20	73	17	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0							6.0		6.0	
Lane Util. Factor		0.91							1.00		1.00	
Frt		1.00							0.86		1.00	
Flt Protected		1.00							1.00		0.96	
Satd. Flow (prot)		4887							1580		1735	
Flt Permitted		1.00							1.00		0.96	
Satd. Flow (perm)		4887							1580		1735	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	0	2017	7	0	0	0	0	0	21	78	18	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	7	0	28	0
Lane Group Flow (vph)	0	2024	0	0	0	0	0	0	14	0	68	0
Heavy Vehicles (%)	6%	6%	33%	2%	6%	6%	6%	6%	4%	6%	2%	6%
Turn Type		NA							Perm	Perm	NA	
Protected Phases		2									4	
Permitted Phases									2	4		
Actuated Green, G (s)		40.9							40.9		8.2	
Effective Green, g (s)		40.9							40.9		8.2	
Actuated g/C Ratio		0.67							0.67		0.13	
Clearance Time (s)		6.0							6.0		6.0	
Vehicle Extension (s)		3.0							3.0		3.0	
Lane Grp Cap (vph)		3271							1057		232	
v/s Ratio Prot		c0.41										
v/s Ratio Perm									0.01		0.04	
v/c Ratio		0.62							0.01		0.29	
Uniform Delay, d1		5.7							3.4		23.8	
Progression Factor		1.00							1.00		1.00	
Incremental Delay, d2		0.4							0.0		0.7	
Delay (s)		6.1							3.4		24.6	
Level of Service		A							A		C	
Approach Delay (s)		6.1			0.0			3.4			24.6	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	6.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	61.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations				↑↑↑	↰	
Volume (vph)	0	0	0	3062	47	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0	6.0	
Lane Util. Factor				0.91	1.00	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				4893	1703	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				4893	1703	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	0	0	0	3253	50	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	3253	50	0
Turn Type				NA	pm+pt	
Protected Phases				6	3	
Permitted Phases					6	
Actuated Green, G (s)				134.7	150.9	
Effective Green, g (s)				134.7	150.9	
Actuated g/C Ratio				0.83	0.93	
Clearance Time (s)				6.0	6.0	
Vehicle Extension (s)				3.0	3.0	
Lane Grp Cap (vph)				4045	1703	
v/s Ratio Prot				c0.66	c0.00	
v/s Ratio Perm					0.03	
v/c Ratio				0.80	0.03	
Uniform Delay, d1				7.3	0.5	
Progression Factor				1.00	1.00	
Incremental Delay, d2				1.2	0.0	
Delay (s)				8.5	0.5	
Level of Service				A	A	
Approach Delay (s)	0.0			8.5	0.5	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	162.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	123.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1908	83	0	0	0	69
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	2027	88	0	0	0	73
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1010					
pX, platoon unblocked			0.76		0.76	0.76
vC, conflicting volume			2115		2071	720
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1373		1315	0
tC, single (s)			4.2		6.9	7.0
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.3
p0 queue free %			100		100	91
cM capacity (veh/h)			363		110	822

Direction, Lane #	EB 1	EB 2	EB 3	NB 1
Volume Total	811	811	494	73
Volume Left	0	0	0	0
Volume Right	0	0	88	73
cSH	1700	1700	1700	822
Volume to Capacity	0.48	0.48	0.29	0.09
Queue Length 95th (ft)	0	0	0	7
Control Delay (s)	0.0	0.0	0.0	9.8
Lane LOS				A
Approach Delay (s)	0.0			9.8
Approach LOS				A

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	0	3074	35	0	33
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	0	3266	37	0	35
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			594			
pX, platoon unblocked	0.19				0.19	0.19
vC, conflicting volume	3303				3285	1107
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0				0	0
tC, single (s)	4.2				6.9	7.7
tC, 2 stage (s)						
tF (s)	2.3				3.6	3.7
p0 queue free %	100				100	81
cM capacity (veh/h)	298				189	182

Direction, Lane #	WB 1	WB 2	WB 3	SB 1
Volume Total	1306	1306	690	35
Volume Left	0	0	0	0
Volume Right	0	0	37	35
cSH	1700	1700	1700	182
Volume to Capacity	0.77	0.77	0.41	0.19
Queue Length 95th (ft)	0	0	0	17
Control Delay (s)	0.0	0.0	0.0	29.5
Lane LOS				D
Approach Delay (s)	0.0			29.5
Approach LOS				D

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	2538	4	0	0	0	0	0	12	35	8	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0							6.0		6.0	
Lane Util. Factor		0.91							1.00		1.00	
Frt		1.00							0.86		1.00	
Flt Protected		1.00							1.00		0.96	
Satd. Flow (prot)		4890							1580		1733	
Flt Permitted		1.00							1.00		0.96	
Satd. Flow (perm)		4890							1580		1733	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	0	2697	4	0	0	0	0	0	13	37	8	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	3	0	17	0
Lane Group Flow (vph)	0	2701	0	0	0	0	0	0	10	0	28	0
Heavy Vehicles (%)	6%	6%	33%	2%	6%	6%	6%	6%	4%	6%	2%	6%
Turn Type		NA							Perm	Perm	NA	
Protected Phases		2									4	
Permitted Phases									2	4		
Actuated Green, G (s)		74.6							74.6		7.5	
Effective Green, g (s)		74.6							74.6		7.5	
Actuated g/C Ratio		0.79							0.79		0.08	
Clearance Time (s)		6.0							6.0		6.0	
Vehicle Extension (s)		3.0							3.0		3.0	
Lane Grp Cap (vph)		3876							1252		138	
v/s Ratio Prot		c0.55										
v/s Ratio Perm									0.01		0.02	
v/c Ratio		0.70							0.01		0.21	
Uniform Delay, d1		4.5							2.0		40.5	
Progression Factor		1.00							1.00		1.00	
Incremental Delay, d2		0.6							0.0		0.7	
Delay (s)		5.1							2.0		41.3	
Level of Service		A							A		D	
Approach Delay (s)		5.1			0.0			2.0			41.3	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	5.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	94.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	0	0	0	2030	65	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0	6.0	
Lane Util. Factor				0.91	1.00	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				4893	1703	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				4893	1703	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	0	0	0	2157	69	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	2157	69	0
Turn Type				NA	pm+pt	
Protected Phases				6	3	
Permitted Phases					6	
Actuated Green, G (s)				50.4	68.6	
Effective Green, g (s)				50.4	68.6	
Actuated g/C Ratio				0.63	0.85	
Clearance Time (s)				6.0	6.0	
Vehicle Extension (s)				3.0	3.0	
Lane Grp Cap (vph)				3059	1703	
v/s Ratio Prot				c0.44	c0.01	
v/s Ratio Perm					0.03	
v/c Ratio				0.71	0.04	
Uniform Delay, d1				10.1	0.9	
Progression Factor				1.00	1.00	
Incremental Delay, d2				0.8	0.0	
Delay (s)				10.9	0.9	
Level of Service				B	A	
Approach Delay (s)	0.0			10.9	0.9	
Approach LOS	A			B	A	

Intersection Summary			
HCM 2000 Control Delay	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	80.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	119.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	2537	48	0	0	0	47
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	2696	51	0	0	0	50
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1010					
pX, platoon unblocked			0.70		0.70	0.70
vC, conflicting volume			2747		2721	924
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1997		1961	0
tC, single (s)			4.2		6.9	7.0
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.3
p0 queue free %			100		100	93
cM capacity (veh/h)			188		37	755

Direction, Lane #	EB 1	EB 2	EB 3	NB 1
Volume Total	1078	1078	590	50
Volume Left	0	0	0	0
Volume Right	0	0	51	50
cSH	1700	1700	1700	755
Volume to Capacity	0.63	0.63	0.35	0.07
Queue Length 95th (ft)	0	0	0	5
Control Delay (s)	0.0	0.0	0.0	10.1
Lane LOS				B
Approach Delay (s)	0.0			10.1
Approach LOS				B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	0	2037	58	0	22
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	0	2164	62	0	23
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			594			
pX, platoon unblocked	0.70				0.70	0.70
vC, conflicting volume	2226				2195	752
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1239				1195	0
tC, single (s)	4.2				6.9	7.7
tC, 2 stage (s)						
tF (s)	2.3				3.6	3.7
p0 queue free %	100				100	97
cM capacity (veh/h)	374				121	679

Direction, Lane #	WB 1	WB 2	WB 3	SB 1
Volume Total	866	866	494	23
Volume Left	0	0	0	0
Volume Right	0	0	62	23
cSH	1700	1700	1700	679
Volume to Capacity	0.51	0.51	0.29	0.03
Queue Length 95th (ft)	0	0	0	3
Control Delay (s)	0.0	0.0	0.0	10.5
Lane LOS				B
Approach Delay (s)	0.0			10.5
Approach LOS				B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	2958	45	0	0	0	60
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	3297	50	0	0	0	67
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1010					
pX, platoon unblocked			0.15		0.15	0.15
vC, conflicting volume			3347		3322	1124
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		0	0
tC, single (s)			4.2		6.9	7.0
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.3
p0 queue free %			100		100	59
cM capacity (veh/h)			243		154	164

Direction, Lane #	EB 1	EB 2	EB 3	NB 1
Volume Total	1319	1319	710	67
Volume Left	0	0	0	0
Volume Right	0	0	50	67
cSH	1700	1700	1700	164
Volume to Capacity	0.78	0.78	0.42	0.41
Queue Length 95th (ft)	0	0	0	45
Control Delay (s)	0.0	0.0	0.0	41.1
Lane LOS				E
Approach Delay (s)	0.0			41.1
Approach LOS				E

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	72.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	0	1401	24	0	21
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	0	1562	27	0	23
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			594			
pX, platoon unblocked	0.76				0.76	0.76
vC, conflicting volume	1588				1575	534
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	677				659	0
tC, single (s)	4.2				6.9	7.7
tC, 2 stage (s)						
tF (s)	2.3				3.6	3.7
p0 queue free %	100				100	97
cM capacity (veh/h)	673				295	741

Direction, Lane #	WB 1	WB 2	WB 3	SB 1
Volume Total	625	625	339	23
Volume Left	0	0	0	0
Volume Right	0	0	27	23
cSH	1700	1700	1700	741
Volume to Capacity	0.37	0.37	0.20	0.03
Queue Length 95th (ft)	0	0	0	2
Control Delay (s)	0.0	0.0	0.0	10.0
Lane LOS				B
Approach Delay (s)	0.0			10.0
Approach LOS				B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	0	1422	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	0	1585	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1585				1585	528
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1585				1585	528
tC, single (s)	4.2				6.9	7.0
tC, 2 stage (s)						
tF (s)	2.3				3.6	3.4
p0 queue free %	100				100	100
cM capacity (veh/h)	392				95	484

Direction, Lane #	WB 1	WB 2	WB 3	SB 1
Volume Total	634	634	317	0
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.37	0.37	0.19	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS				A
Approach Delay (s)	0.0			0.0
Approach LOS				A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	36.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection Sign configuration not allowed in HCM analysis.

Intersection Sign configuration not allowed in HCM analysis.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	2945	3	0	0	0	0	0	28	30	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0							6.0		6.0	
Lane Util. Factor		0.91							1.00		1.00	
Frt		1.00							0.86		1.00	
Flt Protected		1.00							1.00		0.96	
Satd. Flow (prot)		4892							1580		1719	
Flt Permitted		1.00							1.00		0.96	
Satd. Flow (perm)		4892							1580		1719	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%
Adj. Flow (vph)	0	3282	3	0	0	0	0	0	31	33	3	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	4	0	17	0
Lane Group Flow (vph)	0	3285	0	0	0	0	0	0	27	0	19	0
Heavy Vehicles (%)	6%	6%	33%	2%	6%	6%	6%	6%	4%	6%	2%	6%
Turn Type		NA							Perm	Perm	NA	
Protected Phases		2									4	
Permitted Phases									2	4		
Actuated Green, G (s)		131.2							131.2		7.5	
Effective Green, g (s)		131.2							131.2		7.5	
Actuated g/C Ratio		0.87							0.87		0.05	
Clearance Time (s)		6.0							6.0		6.0	
Vehicle Extension (s)		3.0							3.0		3.0	
Lane Grp Cap (vph)		4258							1375		85	
v/s Ratio Prot		c0.67										
v/s Ratio Perm									0.02		0.01	
v/c Ratio		0.77							0.02		0.22	
Uniform Delay, d1		3.8							1.3		68.8	
Progression Factor		1.00							1.00		1.00	
Incremental Delay, d2		0.9							0.0		1.3	
Delay (s)		4.7							1.3		70.1	
Level of Service		A							A		E	
Approach Delay (s)		4.7			0.0			1.3			70.1	
Approach LOS		A			A			A			E	

Intersection Summary			
HCM 2000 Control Delay	5.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	150.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	0	0	0	1397	28	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0	6.0	
Lane Util. Factor				0.91	1.00	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				4893	1703	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				4893	1703	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	107%	107%	107%	107%	107%	107%
Adj. Flow (vph)	0	0	0	1557	31	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	1557	31	0
Turn Type				NA	pm+pt	
Protected Phases				6	3	
Permitted Phases					6	
Actuated Green, G (s)				29.5	49.6	
Effective Green, g (s)				29.5	49.6	
Actuated g/C Ratio				0.48	0.81	
Clearance Time (s)				6.0	6.0	
Vehicle Extension (s)				3.0	3.0	
Lane Grp Cap (vph)				2343	1703	
v/s Ratio Prot				c0.32	c0.01	
v/s Ratio Perm					0.01	
v/c Ratio				0.66	0.02	
Uniform Delay, d1				12.3	1.2	
Progression Factor				1.00	1.00	
Incremental Delay, d2				0.7	0.0	
Delay (s)				13.0	1.2	
Level of Service				B	A	
Approach Delay (s)	0.0			13.0	1.2	
Approach LOS	A			B	A	

Intersection Summary			
HCM 2000 Control Delay	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	61.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	99.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	2958	45	0	0	0	60
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	3297	50	0	0	0	67
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1010					
pX, platoon unblocked			0.15		0.15	0.15
vC, conflicting volume			3347		3322	1124
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		0	0
tC, single (s)			4.2		6.9	7.0
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.3
p0 queue free %			100		100	59
cM capacity (veh/h)			243		154	164

Direction, Lane #	EB 1	EB 2	EB 3	NB 1
Volume Total	1319	1319	710	67
Volume Left	0	0	0	0
Volume Right	0	0	50	67
cSH	1700	1700	1700	164
Volume to Capacity	0.78	0.78	0.42	0.41
Queue Length 95th (ft)	0	0	0	45
Control Delay (s)	0.0	0.0	0.0	41.1
Lane LOS				E
Approach Delay (s)	0.0			41.1
Approach LOS				E

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	72.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	0	1401	24	0	21
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	0	1562	27	0	23
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			594			
pX, platoon unblocked	0.76				0.76	0.76
vC, conflicting volume	1588				1575	534
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	677				659	0
tC, single (s)	4.2				6.9	7.7
tC, 2 stage (s)						
tF (s)	2.3				3.6	3.7
p0 queue free %	100				100	97
cM capacity (veh/h)	673				295	741

Direction, Lane #	WB 1	WB 2	WB 3	SB 1
Volume Total	625	625	339	23
Volume Left	0	0	0	0
Volume Right	0	0	27	23
cSH	1700	1700	1700	741
Volume to Capacity	0.37	0.37	0.20	0.03
Queue Length 95th (ft)	0	0	0	2
Control Delay (s)	0.0	0.0	0.0	10.0
Lane LOS				B
Approach Delay (s)	0.0			10.0
Approach LOS				B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1898	7	0	0	0	0	0	20	73	17	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0							6.0		6.0	
Lane Util. Factor		0.91							1.00		1.00	
Frt		1.00							0.86		1.00	
Flt Protected		1.00							1.00		0.96	
Satd. Flow (prot)		4886							1580		1735	
Flt Permitted		1.00							1.00		0.96	
Satd. Flow (perm)		4886							1580		1735	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%
Adj. Flow (vph)	0	2115	8	0	0	0	0	0	22	81	19	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	7	0	23	0
Lane Group Flow (vph)	0	2123	0	0	0	0	0	0	15	0	77	0
Heavy Vehicles (%)	6%	6%	33%	2%	6%	6%	6%	6%	4%	6%	2%	6%
Turn Type		NA							Perm	Perm	NA	
Protected Phases		2									4	
Permitted Phases									2	4		
Actuated Green, G (s)		45.7							45.7		8.9	
Effective Green, g (s)		45.7							45.7		8.9	
Actuated g/C Ratio		0.69							0.69		0.13	
Clearance Time (s)		6.0							6.0		6.0	
Vehicle Extension (s)		3.0							3.0		3.0	
Lane Grp Cap (vph)		3352							1084		231	
v/s Ratio Prot		c0.43										
v/s Ratio Perm									0.01		0.04	
v/c Ratio		0.63							0.01		0.34	
Uniform Delay, d1		5.8							3.3		26.2	
Progression Factor		1.00							1.00		1.00	
Incremental Delay, d2		0.4							0.0		0.9	
Delay (s)		6.2							3.3		27.0	
Level of Service		A							A		C	
Approach Delay (s)		6.2			0.0			3.3			27.0	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	7.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	66.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	0	0	0	3062	47	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0	6.0	
Lane Util. Factor				0.91	1.00	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				4893	1703	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				4893	1703	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	107%	107%	107%	107%	107%	107%
Adj. Flow (vph)	0	0	0	3413	52	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	3413	52	0
Turn Type				NA	pm+pt	
Protected Phases				6	3	
Permitted Phases					6	
Actuated Green, G (s)				145.5	161.6	
Effective Green, g (s)				145.5	161.6	
Actuated g/C Ratio				0.84	0.93	
Clearance Time (s)				6.0	6.0	
Vehicle Extension (s)				3.0	3.0	
Lane Grp Cap (vph)				4100	1703	
v/s Ratio Prot				c0.70	c0.00	
v/s Ratio Perm					0.03	
v/c Ratio				0.83	0.03	
Uniform Delay, d1				7.5	0.4	
Progression Factor				1.00	1.00	
Incremental Delay, d2				1.6	0.0	
Delay (s)				9.1	0.4	
Level of Service				A	A	
Approach Delay (s)	0.0			9.1	0.4	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	173.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	111.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1908	83	0	0	0	69
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	2127	93	0	0	0	77
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1010					
pX, platoon unblocked			0.75		0.75	0.75
vC, conflicting volume			2219		2173	755
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1459		1398	0
tC, single (s)			4.2		6.9	7.0
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.3
p0 queue free %			100		100	90
cM capacity (veh/h)			330		95	808

Direction, Lane #	EB 1	EB 2	EB 3	NB 1
Volume Total	851	851	518	77
Volume Left	0	0	0	0
Volume Right	0	0	93	77
cSH	1700	1700	1700	808
Volume to Capacity	0.50	0.50	0.30	0.10
Queue Length 95th (ft)	0	0	0	8
Control Delay (s)	0.0	0.0	0.0	9.9
Lane LOS				A
Approach Delay (s)	0.0			9.9
Approach LOS				A

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	0	3074	35	0	33
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	0	3426	39	0	37
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			594			
pX, platoon unblocked	0.17				0.17	0.17
vC, conflicting volume	3465				3446	1162
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0				0	0
tC, single (s)	4.2				6.9	7.7
tC, 2 stage (s)						
tF (s)	2.3				3.6	3.7
p0 queue free %	100				100	78
cM capacity (veh/h)	277				176	169

Direction, Lane #	WB 1	WB 2	WB 3	SB 1
Volume Total	1370	1370	724	37
Volume Left	0	0	0	0
Volume Right	0	0	39	37
cSH	1700	1700	1700	169
Volume to Capacity	0.81	0.81	0.43	0.22
Queue Length 95th (ft)	0	0	0	20
Control Delay (s)	0.0	0.0	0.0	32.1
Lane LOS				D
Approach Delay (s)	0.0			32.1
Approach LOS				D

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	2538	4	0	0	0	0	0	12	35	8	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0							6.0		6.0	
Lane Util. Factor		0.91							1.00		1.00	
Frt		1.00							0.86		1.00	
Flt Protected		1.00							1.00		0.96	
Satd. Flow (prot)		4891							1580		1735	
Flt Permitted		1.00							1.00		0.96	
Satd. Flow (perm)		4891							1580		1735	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%
Adj. Flow (vph)	0	2829	4	0	0	0	0	0	13	39	9	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	2	0	17	0
Lane Group Flow (vph)	0	2833	0	0	0	0	0	0	11	0	31	0
Heavy Vehicles (%)	6%	6%	33%	2%	6%	6%	6%	6%	4%	6%	2%	6%
Turn Type		NA							Perm	Perm	NA	
Protected Phases		2									4	
Permitted Phases									2	4		
Actuated Green, G (s)		86.3							86.3		7.9	
Effective Green, g (s)		86.3							86.3		7.9	
Actuated g/C Ratio		0.81							0.81		0.07	
Clearance Time (s)		6.0							6.0		6.0	
Vehicle Extension (s)		3.0							3.0		3.0	
Lane Grp Cap (vph)		3974							1283		129	
v/s Ratio Prot		c0.58										
v/s Ratio Perm									0.01		0.02	
v/c Ratio		0.71							0.01		0.24	
Uniform Delay, d1		4.4							1.9		46.3	
Progression Factor		1.00							1.00		1.00	
Incremental Delay, d2		0.6							0.0		1.0	
Delay (s)		5.1							1.9		47.3	
Level of Service		A							A		D	
Approach Delay (s)		5.1			0.0			1.9			47.3	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	5.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	106.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	0	0	0	2030	65	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0	6.0	
Lane Util. Factor				0.91	1.00	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				4893	1703	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				4893	1703	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	107%	107%	107%	107%	107%	107%
Adj. Flow (vph)	0	0	0	2263	72	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	2263	72	0
Turn Type				NA	pm+pt	
Protected Phases				6	3	
Permitted Phases					6	
Actuated Green, G (s)				56.6	75.8	
Effective Green, g (s)				56.6	75.8	
Actuated g/C Ratio				0.64	0.86	
Clearance Time (s)				6.0	6.0	
Vehicle Extension (s)				3.0	3.0	
Lane Grp Cap (vph)				3154	1703	
v/s Ratio Prot				c0.46	c0.01	
v/s Ratio Perm					0.03	
v/c Ratio				0.72	0.04	
Uniform Delay, d1				10.3	0.9	
Progression Factor				1.00	1.00	
Incremental Delay, d2				0.8	0.0	
Delay (s)				11.1	0.9	
Level of Service				B	A	
Approach Delay (s)	0.0			11.1	0.9	
Approach LOS	A			B	A	

Intersection Summary			
HCM 2000 Control Delay	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	87.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	102.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	2537	48	0	0	0	47
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	2828	54	0	0	0	52
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1010					
pX, platoon unblocked			0.68		0.68	0.68
vC, conflicting volume			2881		2854	969
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2132		2093	0
tC, single (s)			4.2		6.9	7.0
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.3
p0 queue free %			100		100	93
cM capacity (veh/h)			162		29	737

Direction, Lane #	EB 1	EB 2	EB 3	NB 1
Volume Total	1131	1131	619	52
Volume Left	0	0	0	0
Volume Right	0	0	54	52
cSH	1700	1700	1700	737
Volume to Capacity	0.67	0.67	0.36	0.07
Queue Length 95th (ft)	0	0	0	6
Control Delay (s)	0.0	0.0	0.0	10.3
Lane LOS				B
Approach Delay (s)	0.0			10.3
Approach LOS				B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	0	2037	58	0	22
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	0	2270	65	0	25
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			594			
pX, platoon unblocked	0.68				0.68	0.68
vC, conflicting volume	2335				2303	789
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1339				1291	0
tC, single (s)	4.2				6.9	7.7
tC, 2 stage (s)						
tF (s)	2.3				3.6	3.7
p0 queue free %	100				100	96
cM capacity (veh/h)	336				102	666

Direction, Lane #	WB 1	WB 2	WB 3	SB 1
Volume Total	908	908	519	25
Volume Left	0	0	0	0
Volume Right	0	0	65	25
cSH	1700	1700	1700	666
Volume to Capacity	0.53	0.53	0.31	0.04
Queue Length 95th (ft)	0	0	0	3
Control Delay (s)	0.0	0.0	0.0	10.6
Lane LOS				B
Approach Delay (s)	0.0			10.6
Approach LOS				B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

Arterial Level of Service: EB US 278

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	5	5.0	21.1	0.2	38
Blue Heron Pt Rd	1	5.2	14.2	0.1	33
Crossover Dr.	2	9.2	23.0	0.2	31
	10	3.3	9.7	0.1	31
	4	3.3	12.7	0.1	37
Jenkins Rd	3	1.3	6.6	0.1	39
Total		27.2	87.3	0.8	35

Arterial Level of Service: WB US 278

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Jenkins Rd	3	1.3	25.7	0.4	50
	4	0.4	5.7	0.1	45
	10	0.7	10.2	0.1	47
Gateway Dr.	2	0.8	6.7	0.1	45
Blue Heron Pt Rd	1	2.7	16.9	0.2	42
	5	0.6	15.5	0.1	30
Total		6.5	80.7	1.0	43

Arterial Level of Service: EB US 278

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	5	1.1	18.0	0.2	49
Blue Heron Pt Rd	1	0.6	7.2	0.1	48
Crossover Dr.	2	1.7	15.6	0.2	45
	10	0.8	6.9	0.1	41
	4	1.0	10.1	0.1	45
Jenkins Rd	3	0.6	6.7	0.1	45
Total		5.7	64.4	0.8	46

Arterial Level of Service: WB US 278

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Jenkins Rd	3	20.4	45.9	0.4	29
	4	6.0	12.2	0.1	25
	10	7.0	16.0	0.1	28
Gateway Dr.	2	2.9	8.5	0.1	33
Blue Heron Pt Rd	1	7.4	21.3	0.2	33
	5	1.0	11.9	0.1	29
Total		44.8	115.8	0.9	30

Arterial Level of Service: EB US 278

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	1	3.2	26.7	0.3	47
Crossover Dr.	2	3.7	17.7	0.2	40
	10	1.9	7.9	0.1	36
Jenkins Rd	3	3.1	18.0	0.2	42
Total		11.8	70.4	0.8	42

Arterial Level of Service: WB US 278

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Jenkins Rd	3	21.6	45.4	0.4	28
	10	2.0	16.9	0.2	45
Gateway Dr.	2	0.6	6.1	0.1	46
	1	3.5	17.5	0.2	41
Total		27.7	85.8	0.8	35

Arterial Level of Service: EB US 278

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	4	1.3	18.3	0.2	48
Blue Heron Pt Rd	1	0.7	7.0	0.1	48
Crossover Dr.	2	2.0	16.0	0.2	44
	10	1.1	7.2	0.1	39
	5	1.5	11.1	0.1	43
Jenkins Rd	3	0.7	6.3	0.1	44
Total		7.3	65.9	0.8	45

Arterial Level of Service: WB US 278

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Jenkins Rd	3	1.0	25.2	0.4	50
	5	0.3	6.1	0.1	46
	10	0.6	10.1	0.1	48
Gateway Dr.	2	0.4	6.0	0.1	47
Blue Heron Pt Rd	1	2.1	16.1	0.2	44
	4	0.3	10.8	0.1	31
Total		4.7	74.3	0.9	45

Arterial Level of Service: EB US 278

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	4	0.7	17.7	0.2	50
Blue Heron Pt Rd	1	0.4	6.6	0.1	50
Crossover Dr.	2	1.1	15.2	0.2	47
	10	0.5	6.5	0.1	43
	5	0.7	10.3	0.1	47
Jenkins Rd	3	0.4	6.0	0.1	46
Total		3.9	62.3	0.8	47

Arterial Level of Service: WB US 278

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Jenkins Rd	3	2.2	26.4	0.4	48
	5	0.8	6.5	0.1	43
	10	1.5	11.0	0.1	44
Gateway Dr.	2	1.0	6.6	0.1	42
Blue Heron Pt Rd	1	4.2	18.1	0.2	39
	4	0.6	10.9	0.1	30
Total		10.3	79.4	0.9	42

Arterial Level of Service: EB US 278

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	1	1.5	24.4	0.3	50
Crossover Dr.	2	1.5	15.5	0.2	46
	10	0.7	6.7	0.1	42
Jenkins Rd	3	1.5	16.4	0.2	46
Total		5.2	63.0	0.8	47

Arterial Level of Service: WB US 278

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Jenkins Rd	3	6.6	30.6	0.4	41
	10	1.6	16.5	0.2	46
Gateway Dr.	2	0.4	6.0	0.1	47
	1	2.6	16.7	0.2	43
Total		11.2	69.9	0.8	43

Arterial Level of Service: EB US 278

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	9	5.8	24.0	0.2	39
Blue Heron Pt Rd	1	3.6	9.8	0.1	33
Crossover Dr.	2	8.8	22.4	0.2	32
	10	6.1	20.3	0.2	35
Jenkins Rd	3	1.5	8.3	0.1	40
Total		25.7	84.7	0.8	35

Arterial Level of Service: WB US 278

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Jenkins Rd	3	1.3	25.7	0.4	49
	10	0.5	7.1	0.1	46
Gateway Dr.	2	1.1	15.0	0.2	47
Blue Heron Pt Rd	1	3.1	17.6	0.2	40
	9	0.4	10.0	0.1	32
Total		6.4	75.3	0.9	44

Arterial Level of Service: EB US 278

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	9	1.1	18.3	0.2	49
Blue Heron Pt Rd	1	0.5	6.7	0.1	47
Crossover Dr.	2	1.4	15.1	0.2	47
	10	1.6	15.8	0.2	45
Jenkins Rd	3	0.6	7.4	0.1	45
Total		5.3	63.3	0.8	47

Arterial Level of Service: WB US 278

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Jenkins Rd	3	14.3	40.4	0.4	33
	10	2.9	9.5	0.1	35
Gateway Dr.	2	6.7	20.5	0.2	35
Blue Heron Pt Rd	1	5.0	19.3	0.2	37
	9	1.9	7.7	0.1	41
Total		30.8	97.4	0.9	35

Arterial Level of Service: EB US 278

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	9	1.8	19.3	0.2	47
Blue Heron Pt Rd	1	1.0	7.2	0.1	45
Crossover Dr.	2	2.7	16.5	0.2	43
	10	2.9	17.1	0.2	41
Jenkins Rd	3	1.1	7.8	0.1	42
Total		9.4	68.0	0.8	44

Arterial Level of Service: WB US 278

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Jenkins Rd	3	2.0	26.6	0.4	48
	10	0.8	7.4	0.1	45
Gateway Dr.	2	1.9	15.9	0.2	45
Blue Heron Pt Rd	1	4.3	18.7	0.2	38
	9	0.7	10.3	0.1	31
Total		9.7	78.8	0.9	42

Arterial Level of Service: EB US 278

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	9	1.2	18.5	0.2	49
Blue Heron Pt Rd	1	0.6	6.8	0.1	47
Crossover Dr.	2	1.7	15.6	0.2	46
	10	2.1	16.3	0.2	43
Jenkins Rd	3	0.8	7.6	0.1	44
Total		6.4	64.7	0.8	46

Arterial Level of Service: WB US 278

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Jenkins Rd	3	1.0	25.1	0.4	50
	10	0.4	7.0	0.1	47
Gateway Dr.	2	0.8	14.7	0.2	48
Blue Heron Pt Rd	1	0.9	15.5	0.2	46
	9	0.3	6.0	0.1	53
Total		3.3	68.4	0.9	49

Arterial Level of Service: EB US 278

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	9	0.8	18.0	0.2	50
Blue Heron Pt Rd	1	0.4	6.5	0.1	49
Crossover Dr.	2	1.0	14.8	0.2	48
	10	1.0	15.3	0.2	46
Jenkins Rd	3	0.4	7.2	0.1	46
Total		3.6	61.8	0.8	48

Arterial Level of Service: WB US 278

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Jenkins Rd	3	2.0	26.4	0.4	48
	10	0.8	7.4	0.1	44
Gateway Dr.	2	2.0	16.0	0.2	44
Blue Heron Pt Rd	1	1.9	16.2	0.2	44
	9	0.6	6.2	0.1	51
Total		7.3	72.3	0.9	46

Arterial Level of Service: EB US 278

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	9	1.0	18.3	0.2	49
Blue Heron Pt Rd	1	0.5	6.7	0.1	48
Crossover Dr.	2	1.4	15.4	0.2	46
	10	1.6	15.8	0.2	45
Jenkins Rd	3	0.6	7.4	0.1	45
Total		5.0	63.5	0.8	47

Arterial Level of Service: WB US 278

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Jenkins Rd	3	1.3	25.4	0.4	50
	10	0.5	7.1	0.1	47
Gateway Dr.	2	1.0	15.0	0.2	47
Blue Heron Pt Rd	1	3.0	17.4	0.2	41
	9	0.4	9.8	0.1	33
Total		6.1	74.7	0.9	45

Arterial Level of Service: EB US 278 EB

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Blue Heron Point Rd	1	7.9	32.1	0.3	40
Crosstree Dr.	3	8.5	21.6	0.2	32
	7	16.9	36.0	0.3	27
WB U-Turn	22	2.8	10.3	0.1	37
Total		36.1	100.0	0.9	33

Arterial Level of Service: WB US 278 WB

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
WB U-Turn	2	10.8	26.7	0.2	31
Jenkins Rd	4	4.0	11.9	0.1	34
	20	2.8	18.5	0.2	43
Gateway Dr	6	0.9	6.6	0.1	44
	12	1.0	12.1	0.2	47
Total		19.5	75.8	0.8	38

Arterial Level of Service: EB US 278 EB

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Blue Heron Point Rd	1	7.3	31.5	0.3	40
Crosstree Dr	3	5.6	18.5	0.2	37
	7	3.4	22.3	0.3	44
WB U-Turn	22	0.8	8.2	0.1	46
Total		17.0	80.6	0.9	41

Arterial Level of Service: WB US 278 WB

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
WB U-Turn	2	15.5	31.5	0.2	27
Jenkins Rd	4	8.9	16.8	0.1	24
	20	25.0	40.0	0.2	20
Gateway Dr	6	12.2	17.7	0.1	16
	12	6.6	17.6	0.2	32
Total		68.1	123.6	0.8	23

Arterial Level of Service: EB US 278 EB

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Blue Heron Point Rd	1	6.4	30.4	0.3	42
Crosstree Dr.	2	6.4	19.5	0.2	35
	7	9.1	28.6	0.3	34
WB U-Turn	22	1.5	9.0	0.1	42
Total		23.4	87.6	0.9	38

Arterial Level of Service: WB US 278 WB

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
WB U-Turn	4	9.4	25.3	0.2	33
Jenkins Rd	6	4.7	12.6	0.1	32
	20	5.1	20.6	0.2	39
Gateway Dr	3	1.9	7.5	0.1	38
	12	1.7	12.8	0.2	44
Total		22.8	78.9	0.8	37

Arterial Level of Service: EB US 278 EB

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Blue Heron Point Rd	1	5.1	29.2	0.3	44
Crosstree Dr.	3	5.0	18.3	0.2	38
	7	3.3	22.8	0.3	43
WB U-Turn	22	0.8	8.3	0.1	46
Total		14.2	78.5	0.9	42

Arterial Level of Service: WB US 278 WB

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
WB U-Turn	2	10.4	26.3	0.2	32
Jenkins Rd	4	3.6	11.5	0.1	35
	20	1.6	17.2	0.2	46
Gateway Dr	6	0.5	6.2	0.1	47
	12	0.7	11.8	0.2	48
Total		16.8	73.0	0.8	40

Arterial Level of Service: EB US 278 EB

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Blue Heron Point Rd	1	5.1	29.1	0.3	44
Crosstree Dr	2	3.4	16.7	0.2	41
	7	1.7	21.4	0.3	46
WB U-Turn	22	0.6	8.1	0.1	47
Total		10.8	75.2	0.9	44

Arterial Level of Service: WB US 278 WB

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
WB U-Turn	4	8.7	24.9	0.2	34
Jenkins Rd	6	5.3	13.3	0.1	31
	20	4.8	20.4	0.2	39
Gateway Dr	3	1.7	7.4	0.1	39
	12	1.8	12.9	0.2	44
Total		22.3	78.8	0.8	37

Arterial Level of Service: EB US 278 EB

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Blue Heron Point Rd	1	4.7	29.0	0.3	44
Crosstree Dr.	2	3.8	17.0	0.2	40
	7	2.5	22.2	0.3	45
WB U-Turn	22	0.7	8.3	0.1	46
Total		11.7	76.6	0.9	43

Arterial Level of Service: WB US 278 WB

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
WB U-Turn	4	8.2	23.9	0.2	35
Jenkins Rd	6	3.6	11.6	0.1	35
	20	2.1	17.8	0.2	45
Gateway Dr	3	0.7	6.4	0.1	45
	12	0.9	12.0	0.2	47
Total		15.4	71.7	0.8	40

FREEWAY WEAVING WORKSHEET

General Information

Analyst	SU
Agency/Company	ICA
Date Performed	7/22/2015
Analysis Time Period	AM Peak

Site Information

Freeway/Dir of Travel	US 278 EB
Weaving Segment Location	Blue Heron Pt - Cross Tree Dr.
Analysis Year	2020

Project Description Jenkins Island Access Management

Inputs

Weaving configuration	One-Sided
Weaving number of lanes, N	3
Weaving segment length, L_S	700ft
Freeway free-flow speed, FFS	55 mph

Segment type	C-D Roadway/ Multilane Highways
Freeway minimum speed, S_{MIN}	15
Freeway maximum capacity, C_{IFL}	2250
Terrain type	Level

Conversions to pc/h Under Base Conditions

	V (veh/h)	PHF	Truck (%)	RV (%)	E_T	E_R	f_{HV}	fp	v (pc/h)
V_{FF}	2972	0.96	6	0	1.5	1.2	0.971	1.00	3189
V_{RF}	31	0.96	4	0	1.5	1.2	0.980	1.00	33
V_{FR}	26	0.96	20	0	1.5	1.2	0.909	1.00	30
V_{RR}	0	0.96	0	0	1.5	1.2	1.000	1.00	0
V_{NW}	3189							V =	
V_W	63								
VR	0.019								

Configuration Characteristics

Minimum maneuver lanes, N_{WL}	2 lc
Interchange density, ID	3.0 int/mi
Minimum RF lane changes, LC_{RF}	1 lc/pc
Minimum FR lane changes, LC_{FR}	1 lc/pc
Minimum RR lane changes, LC_{RR}	lc/pc

Minimum weaving lane changes, LC_{MIN}	63 lc/h
Weaving lane changes, LC_W	276 lc/h
Non-weaving lane changes, LC_{NW}	459 lc/h
Total lane changes, LC_{ALL}	735 lc/h
Non-weaving vehicle index, I_{NW}	670

Weaving Segment Speed, Density, Level of Service, and Capacity

Weaving segment flow rate, v	veh/h
Weaving segment capacity, c_w	veh/h
Weaving segment v/c ratio	
Weaving segment density, D	22.0 pc/mi/ln
Level of Service, LOS	B

Weaving intensity factor, W	0.235
Weaving segment speed, S	49.3 mph
Average weaving speed, S_W	47.4 mph
Average non-weaving speed, S_{NW}	49.3 mph
Maximum weaving length, L_{MAX}	2775 ft

Notes

a. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments".
b. For volumes that exceed the weaving segment capacity, the level of service is "F".

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FREEWAY WEAVING WORKSHEET

General Information

Analyst
Agency/Company ICA
Date Performed 7/22/2015
Analysis Time Period PM Peak

Site Information

Freeway/Dir of Travel US 278 EB
Weaving Segment Location Blue Heron Pt - Cross Tree Dr.
Analysis Year 2020

Project Description Jenkins Island Access Management

Inputs

Weaving configuration	One-Sided
Weaving number of lanes, N	3
Weaving segment length, L_S	700ft
Freeway free-flow speed, FFS	55 mph
Segment type	C-D Roadway/ Multilane Highways
Freeway minimum speed, S_{MIN}	15
Freeway maximum capacity, C_{IFL}	2250
Terrain type	Level

Conversions to pc/h Under Base Conditions

	V (veh/h)	PHF	Truck (%)	RV (%)	E_T	E_R	f_{HV}	fp	v (pc/h)
V_{FF}	1894	0.96	2	0	1.5	1.2	0.990	1.00	1993
V_{RF}	25	0.96	10	0	1.5	1.2	0.952	1.00	27
V_{FR}	28	0.96	2	0	1.5	1.2	0.990	1.00	29
V_{RR}	0	0.96	0	0	1.5	1.2	1.000	1.00	0
V_{NW}	1993							V =	2029
V_W	56								
VR	0.027								

Configuration Characteristics

Minimum maneuver lanes, N_{WL}	2 lc
Interchange density, ID	3.0 int/mi
Minimum RF lane changes, LC_{RF}	1 lc/pc
Minimum FR lane changes, LC_{FR}	1 lc/pc
Minimum RR lane changes, LC_{RR}	lc/pc
Minimum weaving lane changes, LC_{MIN}	56 lc/h
Weaving lane changes, LC_W	269 lc/h
Non-weaving lane changes, LC_{NW}	212 lc/h
Total lane changes, LC_{ALL}	481 lc/h
Non-weaving vehicle index, I_{NW}	419

Weaving Segment Speed, Density, Level of Service, and Capacity

Weaving segment flow rate, v	2029 veh/h
Weaving segment capacity, c_w	6196 veh/h
Weaving segment v/c ratio	0.327
Weaving segment density, D	13.3 pc/mi/ln
Level of Service, LOS	B
Weaving intensity factor, W	0.168
Weaving segment speed, S	51.3 mph
Average weaving speed, S_W	49.2 mph
Average non-weaving speed, S_{NW}	51.3 mph
Maximum weaving length, L_{MAX}	2849 ft

Notes

a. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments".
b. For volumes that exceed the weaving segment capacity, the level of service is "F".

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FREEWAY WEAVING WORKSHEET

General Information

Analyst	
Agency/Company	ICA
Date Performed	7/22/2015
Analysis Time Period	Weekend Peak

Site Information

Freeway/Dir of Travel	US 278 EB
Weaving Segment Location	Blue Heron Pt - Cross Tree Dr.
Analysis Year	2020

Project Description Jenkins Island Access Management

Inputs

Weaving configuration	One-Sided
Weaving number of lanes, N	3
Weaving segment length, L_S	700ft
Freeway free-flow speed, FFS	55 mph
Segment type	C-D Roadway/ Multilane Highways
Freeway minimum speed, S_{MIN}	15
Freeway maximum capacity, C_{IFL}	2250
Terrain type	Level

Conversions to pc/h Under Base Conditions

	V (veh/h)	PHF	Truck (%)	RV (%)	E_T	E_R	f_{HV}	fp	v (pc/h)
V_{FF}	2523	0.96	2	0	1.5	1.2	0.990	1.00	2654
V_{RF}	24	0.96	2	0	1.5	1.2	0.990	1.00	25
V_{FR}	29	0.96	2	0	1.5	1.2	0.990	1.00	31
V_{RR}	0	0.96	0	0	1.5	1.2	1.000	1.00	0
V_{NW}	2654							V =	
V_W	56								
VR	0.021								

Configuration Characteristics

Minimum maneuver lanes, N_{WL}	2 lc	Minimum weaving lane changes, LC_{MIN}	56 lc/h
Interchange density, ID	3.0 int/mi	Weaving lane changes, LC_W	269 lc/h
Minimum RF lane changes, LC_{RF}	1 lc/pc	Non-weaving lane changes, LC_{NW}	348 lc/h
Minimum FR lane changes, LC_{FR}	1 lc/pc	Total lane changes, LC_{ALL}	617 lc/h
Minimum RR lane changes, LC_{RR}	lc/pc	Non-weaving vehicle index, I_{NW}	557

Weaving Segment Speed, Density, Level of Service, and Capacity

Weaving segment flow rate, v	veh/h	Weaving intensity factor, W	0.205
Weaving segment capacity, c_w	veh/h	Weaving segment speed, S	50.2 mph
Weaving segment v/c ratio		Average weaving speed, S_W	48.2 mph
Weaving segment density, D	18.0 pc/mi/ln	Average non-weaving speed, S_{NW}	50.3 mph
Level of Service, LOS	B	Maximum weaving length, L_{MAX}	2787 ft

Notes

a. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments".
b. For volumes that exceed the weaving segment capacity, the level of service is "F".

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FREEWAY WEAVING WORKSHEET

General Information

Analyst	
Agency/Company	ICA
Date Performed	7/22/2015
Analysis Time Period	AM Peak

Site Information

Freeway/Dir of Travel	US 278 EB
Weaving Segment Location	Blue Heron Pt - Cross Tree Dr.
Analysis Year	2035 w/3 Lane

Project Description Jenkins Island Access Management

Inputs

Weaving configuration	One-Sided
Weaving number of lanes, N	4
Weaving segment length, L_S	700ft
Freeway free-flow speed, FFS	55 mph
Segment type	C-D Roadway/ Multilane Highways
Freeway minimum speed, S_{MIN}	15
Freeway maximum capacity, C_{IFL}	2250
Terrain type	Level

Conversions to pc/h Under Base Conditions

	V (veh/h)	PHF	Truck (%)	RV (%)	E_T	E_R	f_{HV}	fp	v (pc/h)
V_{FF}	3118	0.96	6	0	1.5	1.2	0.971	1.00	3345
V_{RF}	32	0.96	4	0	1.5	1.2	0.980	1.00	34
V_{FR}	27	0.96	20	0	1.5	1.2	0.909	1.00	31
V_{RR}	0	0.96	0	0	1.5	1.2	1.000	1.00	0
V_{NW}	3345							V =	
V_W	65								
VR	0.019								

Configuration Characteristics

Minimum maneuver lanes, N_{WL}	2 lc
Interchange density, ID	3.0 int/mi
Minimum RF lane changes, LC_{RF}	1 lc/pc
Minimum FR lane changes, LC_{FR}	1 lc/pc
Minimum RR lane changes, LC_{RR}	lc/pc
Minimum weaving lane changes, LC_{MIN}	65 lc/h
Weaving lane changes, LC_W	443 lc/h
Non-weaving lane changes, LC_{NW}	298 lc/h
Total lane changes, LC_{ALL}	741 lc/h
Non-weaving vehicle index, I_{NW}	702

Weaving Segment Speed, Density, Level of Service, and Capacity

Weaving segment flow rate, v	veh/h
Weaving segment capacity, c_w	veh/h
Weaving segment v/c ratio	
Weaving segment density, D	16.9 pc/mi/ln
Level of Service, LOS	B
Weaving intensity factor, W	0.236
Weaving segment speed, S	50.4 mph
Average weaving speed, S_W	47.4 mph
Average non-weaving speed, S_{NW}	50.4 mph
Maximum weaving length, L_{MAX}	2772 ft

Notes

a. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments".
b. For volumes that exceed the weaving segment capacity, the level of service is "F".

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FREEWAY WEAVING WORKSHEET

General Information

Analyst	
Agency/Company	ICA
Date Performed	7/22/2015
Analysis Time Period	PM Peak

Site Information

Freeway/Dir of Travel	US 278 EB
Weaving Segment Location	Blue Heron Pt - Cross Tree Dr.
Analysis Year	2035 w/3 lane

Project Description Jenkins Island Access Management

Inputs

Weaving configuration	One-Sided
Weaving number of lanes, N	4
Weaving segment length, L_S	700ft
Freeway free-flow speed, FFS	55 mph

Segment type	C-D Roadway/ Multilane Highways
Freeway minimum speed, S_{MIN}	15
Freeway maximum capacity, C_{IFL}	2250
Terrain type	Level

Conversions to pc/h Under Base Conditions

	V (veh/h)	PHF	Truck (%)	RV (%)	E_T	E_R	f_{HV}	fp	v (pc/h)
V_{FF}	1987	0.96	2	0	1.5	1.2	0.990	1.00	2090
V_{RF}	26	0.96	10	0	1.5	1.2	0.952	1.00	28
V_{FR}	29	0.96	2	0	1.5	1.2	0.990	1.00	31
V_{RR}	0	0.96	0	0	1.5	1.2	1.000	1.00	0
V_{NW}	2090							V =	2128
V_W	59								
VR	0.027								

Configuration Characteristics

Minimum maneuver lanes, N_{WL}	2 lc
Interchange density, ID	3.0 int/mi
Minimum RF lane changes, LC_{RF}	1 lc/pc
Minimum FR lane changes, LC_{FR}	1 lc/pc
Minimum RR lane changes, LC_{RR}	lc/pc

Minimum weaving lane changes, LC_{MIN}	59 lc/h
Weaving lane changes, LC_W	437 lc/h
Non-weaving lane changes, LC_{NW}	40 lc/h
Total lane changes, LC_{ALL}	477 lc/h
Non-weaving vehicle index, I_{NW}	439

Weaving Segment Speed, Density, Level of Service, and Capacity

Weaving segment flow rate, v	2128 veh/h
Weaving segment capacity, c_w	8261 veh/h
Weaving segment v/c ratio	0.258
Weaving segment density, D	10.3 pc/mi/ln
Level of Service, LOS	A

Weaving intensity factor, W	0.167
Weaving segment speed, S	51.9 mph
Average weaving speed, S_W	49.3 mph
Average non-weaving speed, S_{NW}	52.0 mph
Maximum weaving length, L_{MAX}	2850 ft

Notes

a. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments".
b. For volumes that exceed the weaving segment capacity, the level of service is "F".

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FREEWAY WEAVING WORKSHEET

General Information

Analyst	
Agency/Company	ICA
Date Performed	7/22/2015
Analysis Time Period	Weekend Peak

Site Information

Freeway/Dir of Travel	US 278 EB
Weaving Segment Location	Blue Heron Pt - Cross Tree Dr.
Analysis Year	2035 w/3 Lane

Project Description Jenkins Island Access Management

Inputs

Weaving configuration	One-Sided
Weaving number of lanes, N	4
Weaving segment length, L_S	700ft
Freeway free-flow speed, FFS	55 mph
Segment type	C-D Roadway/ Multilane Highways
Freeway minimum speed, S_{MIN}	15
Freeway maximum capacity, C_{IFL}	2250
Terrain type	Level

Conversions to pc/h Under Base Conditions

	V (veh/h)	PHF	Truck (%)	RV (%)	E_T	E_R	f_{HV}	f_p	v (pc/h)
V_{FF}	2647	0.96	2	0	1.5	1.2	0.990	1.00	2785
V_{RF}	25	0.96	2	0	1.5	1.2	0.990	1.00	26
V_{FR}	30	0.96	2	0	1.5	1.2	0.990	1.00	32
V_{RR}	0	0.96	0	0	1.5	1.2	1.000	1.00	0
V_{NW}	2785							V =	
V_W	58								
VR	0.020								

Configuration Characteristics

Minimum maneuver lanes, N_{WL}	2 lc
Interchange density, ID	3.0 int/mi
Minimum RF lane changes, LC_{RF}	1 lc/pc
Minimum FR lane changes, LC_{FR}	1 lc/pc
Minimum RR lane changes, LC_{RR}	lc/pc
Minimum weaving lane changes, LC_{MIN}	58 lc/h
Weaving lane changes, LC_W	436 lc/h
Non-weaving lane changes, LC_{NW}	183 lc/h
Total lane changes, LC_{ALL}	619 lc/h
Non-weaving vehicle index, I_{NW}	585

Weaving Segment Speed, Density, Level of Service, and Capacity

Weaving segment flow rate, v	veh/h
Weaving segment capacity, c_w	veh/h
Weaving segment v/c ratio	
Weaving segment density, D	13.9 pc/mi/ln
Level of Service, LOS	B
Weaving intensity factor, W	0.205
Weaving segment speed, S	51.1 mph
Average weaving speed, S_W	48.2 mph
Average non-weaving speed, S_{NW}	51.2 mph
Maximum weaving length, L_{MAX}	2784 ft

Notes

a. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments".
b. For volumes that exceed the weaving segment capacity, the level of service is "F".

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FREEWAY WEAVING WORKSHEET

General Information

Analyst	
Agency/Company	ICA
Date Performed	7/22/2015
Analysis Time Period	AM Peak

Site Information

Freeway/Dir of Travel	US 278 WB
Weaving Segment Location	Jenkins Island - Gateway Dr.
Analysis Year	2020

Project Description Jenkins Island Access Management

Inputs

Weaving configuration	One-Sided
Weaving number of lanes, N	3
Weaving segment length, L_S	1050ft
Freeway free-flow speed, FFS	55 mph
Segment type	C-D Roadway/ Multilane Highways
Freeway minimum speed, S_{MIN}	15
Freeway maximum capacity, C_{IFL}	2250
Terrain type	Level

Conversions to pc/h Under Base Conditions

	V (veh/h)	PHF	Truck (%)	RV (%)	E_T	E_R	f_{HV}	fp	v (pc/h)
V_{FF}	1382	0.96	6	0	1.5	1.2	0.971	1.00	1483
V_{RF}	12	0.96	40	0	1.5	1.2	0.833	1.00	15
V_{FR}	25	0.96	10	0	1.5	1.2	0.952	1.00	27
V_{RR}	0	0.96	0	0	1.5	1.2	1.000	1.00	0
V_{NW}	1483							V =	1481
V_W	42								
VR	0.028								

Configuration Characteristics

Minimum maneuver lanes, N_{WL}	2 lc
Interchange density, ID	3.0 int/mi
Minimum RF lane changes, LC_{RF}	1 lc/pc
Minimum FR lane changes, LC_{FR}	1 lc/pc
Minimum RR lane changes, LC_{RR}	lc/pc
Minimum weaving lane changes, LC_{MIN}	42 lc/h
Weaving lane changes, LC_W	333 lc/h
Non-weaving lane changes, LC_{NW}	297 lc/h
Total lane changes, LC_{ALL}	630 lc/h
Non-weaving vehicle index, I_{NW}	467

Weaving Segment Speed, Density, Level of Service, and Capacity

Weaving segment flow rate, v	1481 veh/h
Weaving segment capacity, c_w	6151 veh/h
Weaving segment v/c ratio	0.241
Weaving segment density, D	9.7 pc/mi/ln
Level of Service, LOS	A
Weaving intensity factor, W	0.151
Weaving segment speed, S	52.2 mph
Average weaving speed, S_W	49.8 mph
Average non-weaving speed, S_{NW}	52.3 mph
Maximum weaving length, L_{MAX}	2850 ft

Notes

a. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments".
b. For volumes that exceed the weaving segment capacity, the level of service is "F".

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FREEWAY WEAVING WORKSHEET

General Information

Analyst	
Agency/Company	ICA
Date Performed	7/22/2015
Analysis Time Period	PM Peak

Site Information

Freeway/Dir of Travel	US 278 WB
Weaving Segment Location	Jenkins Island - Gateway Dr.
Analysis Year	2020

Project Description Jenkins Island Access Management

Inputs

Weaving configuration	One-Sided
Weaving number of lanes, N	3
Weaving segment length, L_S	1050ft
Freeway free-flow speed, FFS	55 mph
Segment type	C-D Roadway/ Multilane Highways
Freeway minimum speed, S_{MIN}	15
Freeway maximum capacity, C_{IFL}	2250
Terrain type	Level

Conversions to pc/h Under Base Conditions

	V (veh/h)	PHF	Truck (%)	RV (%)	E_T	E_R	f_{HV}	fp	v (pc/h)
V_{FF}	3025	0.96	4	0	1.5	1.2	0.980	1.00	3214
V_{RF}	22	0.96	20	0	1.5	1.2	0.909	1.00	25
V_{FR}	78	0.96	2	0	1.5	1.2	0.990	1.00	82
V_{RR}	0	0.96	0	0	1.5	1.2	1.000	1.00	0
V_{NW}	3214							V =	3256
V_W	107								
VR	0.032								

Configuration Characteristics

Minimum maneuver lanes, N_{WL}	2 lc	Minimum weaving lane changes, LC_{MIN}	107 lc/h
Interchange density, ID	3.0 int/mi	Weaving lane changes, LC_W	398 lc/h
Minimum RF lane changes, LC_{RF}	1 lc/pc	Non-weaving lane changes, LC_{NW}	653 lc/h
Minimum FR lane changes, LC_{FR}	1 lc/pc	Total lane changes, LC_{ALL}	1051 lc/h
Minimum RR lane changes, LC_{RR}	lc/pc	Non-weaving vehicle index, I_{NW}	1012

Weaving Segment Speed, Density, Level of Service, and Capacity

Weaving segment flow rate, v	3256 veh/h	Weaving intensity factor, W	0.226
Weaving segment capacity, c_w	6203 veh/h	Weaving segment speed, S	48.9 mph
Weaving segment v/c ratio	0.525	Average weaving speed, S_W	47.6 mph
Weaving segment density, D	22.7 pc/mi/ln	Average non-weaving speed, S_{NW}	48.9 mph
Level of Service, LOS	B	Maximum weaving length, L_{MAX}	2894 ft

Notes

a. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments".
b. For volumes that exceed the weaving segment capacity, the level of service is "F".

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FREEWAY WEAVING WORKSHEET

General Information

Analyst	
Agency/Company	ICA
Date Performed	7/22/2015
Analysis Time Period	Weekend Peak

Site Information

Freeway/Dir of Travel	US 278 WB
Weaving Segment Location	Jenkins Island - Gateway Dr.
Analysis Year	2020

Project Description Jenkins Island Access Management

Inputs

Weaving configuration	One-Sided
Weaving number of lanes, N	3
Weaving segment length, L_S	1050ft
Freeway free-flow speed, FFS	55 mph
Segment type	C-D Roadway/ Multilane Highways
Freeway minimum speed, S_{MIN}	15
Freeway maximum capacity, C_{IFL}	2250
Terrain type	Level

Conversions to pc/h Under Base Conditions

	V (veh/h)	PHF	Truck (%)	RV (%)	E_T	E_R	f_{HV}	fp	v (pc/h)
V_{FF}	2018	0.96	2	0	1.5	1.2	0.990	1.00	2123
V_{RF}	10	0.96	2	0	1.5	1.2	0.990	1.00	11
V_{FR}	31	0.96	2	0	1.5	1.2	0.990	1.00	33
V_{RR}	0	0.96	0	0	1.5	1.2	1.000	1.00	0
V_{NW}	2123							V =	
V_W	44								
VR	0.020								

Configuration Characteristics

Minimum maneuver lanes, N_{WL}	2 lc
Interchange density, ID	3.0 int/mi
Minimum RF lane changes, LC_{RF}	1 lc/pc
Minimum FR lane changes, LC_{FR}	1 lc/pc
Minimum RR lane changes, LC_{RR}	lc/pc
Minimum weaving lane changes, LC_{MIN}	44 lc/h
Weaving lane changes, LC_W	335 lc/h
Non-weaving lane changes, LC_{NW}	429 lc/h
Total lane changes, LC_{ALL}	764 lc/h
Non-weaving vehicle index, I_{NW}	669

Weaving Segment Speed, Density, Level of Service, and Capacity

Weaving segment flow rate, v	veh/h
Weaving segment capacity, c_w	veh/h
Weaving segment v/c ratio	
Weaving segment density, D	14.1 pc/mi/ln
Level of Service, LOS	B
Weaving intensity factor, W	0.176
Weaving segment speed, S	51.2 mph
Average weaving speed, S_W	49.0 mph
Average non-weaving speed, S_{NW}	51.2 mph
Maximum weaving length, L_{MAX}	2783 ft

Notes

a. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments".
b. For volumes that exceed the weaving segment capacity, the level of service is "F".

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FREEWAY WEAVING WORKSHEET

General Information

Analyst	
Agency/Company	ICA
Date Performed	7/22/2015
Analysis Time Period	AM Peak

Site Information

Freeway/Dir of Travel	US 278 WB
Weaving Segment Location	Jenkins Island - Gateway Dr.
Analysis Year	2035 w/3 Lane

Project Description Jenkins Island Access Management

Inputs

Weaving configuration	One-Sided
Weaving number of lanes, N	4
Weaving segment length, L_S	1050ft
Freeway free-flow speed, FFS	55 mph

Segment type	C-D Roadway/ Multilane Highways
Freeway minimum speed, S_{MIN}	15
Freeway maximum capacity, C_{IFL}	2250
Terrain type	Level

Conversions to pc/h Under Base Conditions

	V (veh/h)	PHF	Truck (%)	RV (%)	E_T	E_R	f_{HV}	fp	v (pc/h)
V_{FF}	1450	0.96	6	0	1.5	1.2	0.971	1.00	1556
V_{RF}	13	0.96	40	0	1.5	1.2	0.833	1.00	16
V_{FR}	26	0.96	10	0	1.5	1.2	0.952	1.00	28
V_{RR}	0	0.96	0	0	1.5	1.2	1.000	1.00	0
V_{NW}	1556							V =	1554
V_W	44								
VR	0.027								

Configuration Characteristics

Minimum maneuver lanes, N_{WL}	2 lc
Interchange density, ID	3.0 int/mi
Minimum RF lane changes, LC_{RF}	1 lc/pc
Minimum FR lane changes, LC_{FR}	1 lc/pc
Minimum RR lane changes, LC_{RR}	lc/pc

Minimum weaving lane changes, LC_{MIN}	44 lc/h
Weaving lane changes, LC_W	562 lc/h
Non-weaving lane changes, LC_{NW}	119 lc/h
Total lane changes, LC_{ALL}	681 lc/h
Non-weaving vehicle index, I_{NW}	490

Weaving Segment Speed, Density, Level of Service, and Capacity

Weaving segment flow rate, v	1554 veh/h
Weaving segment capacity, c_w	8202 veh/h
Weaving segment v/c ratio	0.189
Weaving segment density, D	7.6 pc/mi/ln
Level of Service, LOS	A

Weaving intensity factor, W	0.161
Weaving segment speed, S	52.7 mph
Average weaving speed, S_W	49.5 mph
Average non-weaving speed, S_{NW}	52.8 mph
Maximum weaving length, L_{MAX}	2850 ft

Notes

a. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments".
b. For volumes that exceed the weaving segment capacity, the level of service is "F".

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FREEWAY WEAVING WORKSHEET

General Information

Analyst	
Agency/Company	ICA
Date Performed	7/22/2015
Analysis Time Period	PM Peak

Site Information

Freeway/Dir of Travel	US 278 WB
Weaving Segment Location	Jenkins Island - Gateway Dr.
Analysis Year	2035 w/3 Lane

Project Description Jenkins Island Access Management

Inputs

Weaving configuration	One-Sided
Weaving number of lanes, N	4
Weaving segment length, L_S	1050ft
Freeway free-flow speed, FFS	55 mph
Segment type	C-D Roadway/ Multilane Highways
Freeway minimum speed, S_{MIN}	15
Freeway maximum capacity, C_{IFL}	2250
Terrain type	Level

Conversions to pc/h Under Base Conditions

	V (veh/h)	PHF	Truck (%)	RV (%)	E_T	E_R	f_{HV}	f_p	v (pc/h)
V_{FF}	3173	0.96	4	0	1.5	1.2	0.980	1.00	3371
V_{RF}	23	0.96	20	0	1.5	1.2	0.909	1.00	26
V_{FR}	82	0.96	2	0	1.5	1.2	0.990	1.00	86
V_{RR}	0	0.96	0	0	1.5	1.2	1.000	1.00	0
V_{NW}	3371							V =	3415
V_W	112								
VR	0.032								

Configuration Characteristics

Minimum maneuver lanes, N_{WL}	2 lc
Interchange density, ID	3.0 int/mi
Minimum RF lane changes, LC_{RF}	1 lc/pc
Minimum FR lane changes, LC_{FR}	1 lc/pc
Minimum RR lane changes, LC_{RR}	lc/pc
Minimum weaving lane changes, LC_{MIN}	112 lc/h
Weaving lane changes, LC_W	630 lc/h
Non-weaving lane changes, LC_{NW}	493 lc/h
Total lane changes, LC_{ALL}	1123 lc/h
Non-weaving vehicle index, I_{NW}	1062

Weaving Segment Speed, Density, Level of Service, and Capacity

Weaving segment flow rate, v	3415 veh/h
Weaving segment capacity, c_w	8271 veh/h
Weaving segment v/c ratio	0.413
Weaving segment density, D	17.4 pc/mi/ln
Level of Service, LOS	B
Weaving intensity factor, W	0.238
Weaving segment speed, S	49.9 mph
Average weaving speed, S_W	47.3 mph
Average non-weaving speed, S_{NW}	50.0 mph
Maximum weaving length, L_{MAX}	2894 ft

Notes

a. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments".
b. For volumes that exceed the weaving segment capacity, the level of service is "F".

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FREEWAY WEAVING WORKSHEET

General Information

Analyst	
Agency/Company	ICA
Date Performed	7/22/2015
Analysis Time Period	Weekend Peak

Site Information

Freeway/Dir of Travel	US 278 WB
Weaving Segment Location	Jenkins Island - Gateway Dr.
Analysis Year	2015 w/3Lane

Project Description Jenkins Island Access Management

Inputs

Weaving configuration	One-Sided
Weaving number of lanes, N	4
Weaving segment length, L_S	1050ft
Freeway free-flow speed, FFS	55 mph
Segment type	C-D Roadway/ Multilane Highways
Freeway minimum speed, S_{MIN}	15
Freeway maximum capacity, C_{IFL}	2250
Terrain type	Level

Conversions to pc/h Under Base Conditions

	V (veh/h)	PHF	Truck (%)	RV (%)	E_T	E_R	f_{HV}	fp	v (pc/h)
V_{FF}	2116	0.96	2	0	1.5	1.2	0.990	1.00	2226
V_{RF}	10	0.96	2	0	1.5	1.2	0.990	1.00	11
V_{FR}	32	0.96	2	0	1.5	1.2	0.990	1.00	34
V_{RR}	0	0.96	0	0	1.5	1.2	1.000	1.00	0
V_{NW}	2226							V =	
V_W	45								
VR	0.020								

Configuration Characteristics

Minimum maneuver lanes, N_{WL}	2 lc
Interchange density, ID	3.0 int/mi
Minimum RF lane changes, LC_{RF}	1 lc/pc
Minimum FR lane changes, LC_{FR}	1 lc/pc
Minimum RR lane changes, LC_{RR}	lc/pc
Minimum weaving lane changes, LC_{MIN}	45 lc/h
Weaving lane changes, LC_W	563 lc/h
Non-weaving lane changes, LC_{NW}	257 lc/h
Total lane changes, LC_{ALL}	820 lc/h
Non-weaving vehicle index, I_{NW}	701

Weaving Segment Speed, Density, Level of Service, and Capacity

Weaving segment flow rate, v	veh/h
Weaving segment capacity, c_w	veh/h
Weaving segment v/c ratio	
Weaving segment density, D	10.9 pc/mi/ln
Level of Service, LOS	A
Weaving intensity factor, W	0.186
Weaving segment speed, S	51.9 mph
Average weaving speed, S_W	48.7 mph
Average non-weaving speed, S_{NW}	52.0 mph
Maximum weaving length, L_{MAX}	2779 ft

Notes

a. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments".
b. For volumes that exceed the weaving segment capacity, the level of service is "F".

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F

Appendix F - Utilities

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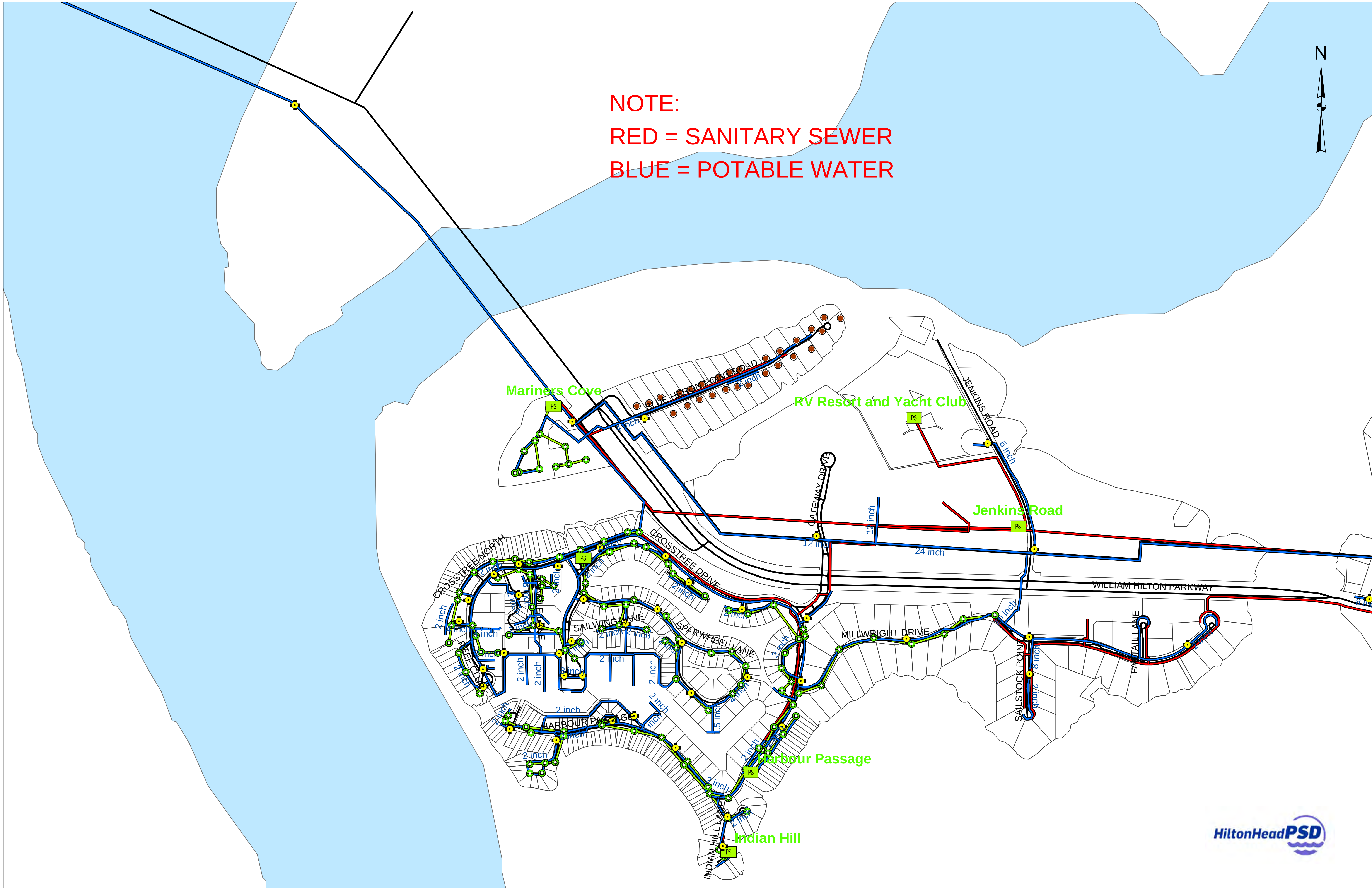
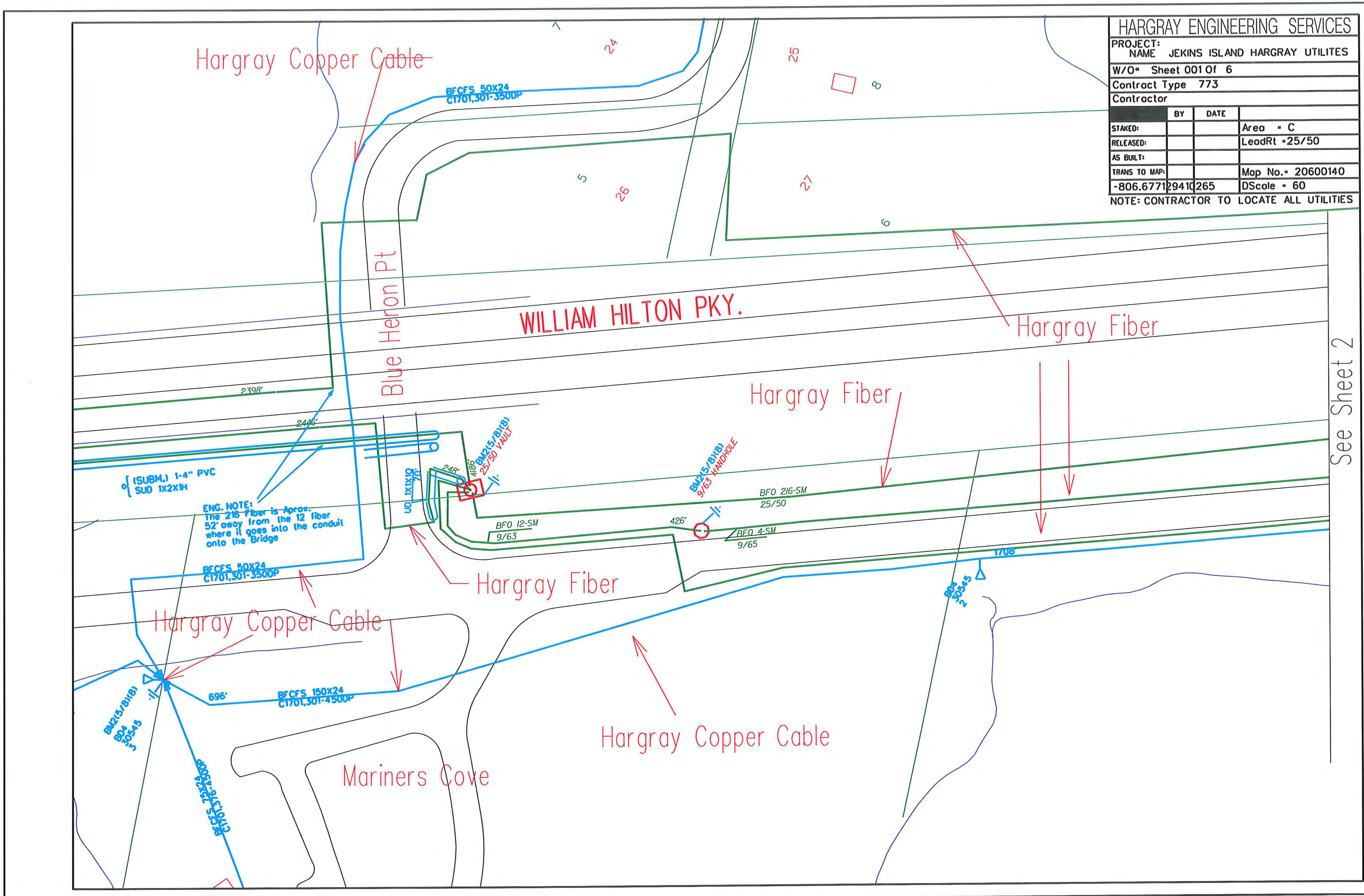
S


NOTE:
RED = SANITARY SEWER
BLUE = POTABLE WATER
N
Mariners Cove
RV Resort and Yacht Club
Jenkins Road
Harbour Passage
Indian Hill
JENKINS ROAD
GATEWAY DRIVE
CROSSTREE DRIVE
CROSSTREE NORTH
WILLIAM HILTON PARKWAY
MILLWRIGHT DRIVE
SAILWING LANE
SPARWHEEL LANE
HARBOUR PASSAGE
INDIAN HILL LANE
SAILSTOCK POINT
FANTAIL LANE
24 inch
12 inch
6 inch
2 inch
HiltonHeadPSD


1 inch = 200 feet
69242
69243
69244
69245
69246
69250
69251
69252
69253
69254
69258
69260
69262
71702
71704
71705
71706
TWIN BRIDGES
TENNIS
POOL
FRONTAGE ROAD
0705 Windmill Harbour
JENKINS ISLAND CEMETERY
HARGRAY SWITCH STATION
CROSSTREE NORTH
CROSSTREE DRIVE
SPARWHEEL LN
GATEWAY DRIVE
SAILWING
278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PROJECT: NAME JEKINS ISLAND HARGRAY UTILITES
W/O Sheet 001 Of 6
Contract Type 773
Contractor
BY
DATE
STAKED:
RELEASED:
AS BUILT:
TRANS TO MAP:
Area = C
LeadRt =25/50
Map No.= 20600140
-806.67712941 0265
DScale = 60
NOTE: CONTRACTOR TO LOCATE ALL UTILITIES
Hargray Copper Cable
BFCFS 50X24
C1701,301-3500P
WILLIAM HILTON PKY.
Blue Heron Pt
Hargray Fiber
See Sheet 2
2398'
2446'
(SUBM.) 1-4" PVC
SUD 1X2X1H
ENG. NOTE:
The 216 Fiber is Aprox. 52' away from the 12 fiber where it goes into the conduit onto the Bridge
BM2(5/8)(8)
25/50 VAULT
9/63 HANDHOLE
BFO 216-SM
25/50
BFO 12-SM
9/63
BFO 4-SM
9/65
426'
1708'
696'
BFCFS 150X24
C1701,301-4500P
BFCFS 75X24
C1701,376-4500P
Mariners Cove

HARGRAY ENGINEERING SERVICES			
PROJECT: NAME JEKINS ISLAND HARGRAY UTILITES			
W/O# Sheet 002 Of 6			
Contract Type 773			
Contractor			
[redacted]	BY	DATE	
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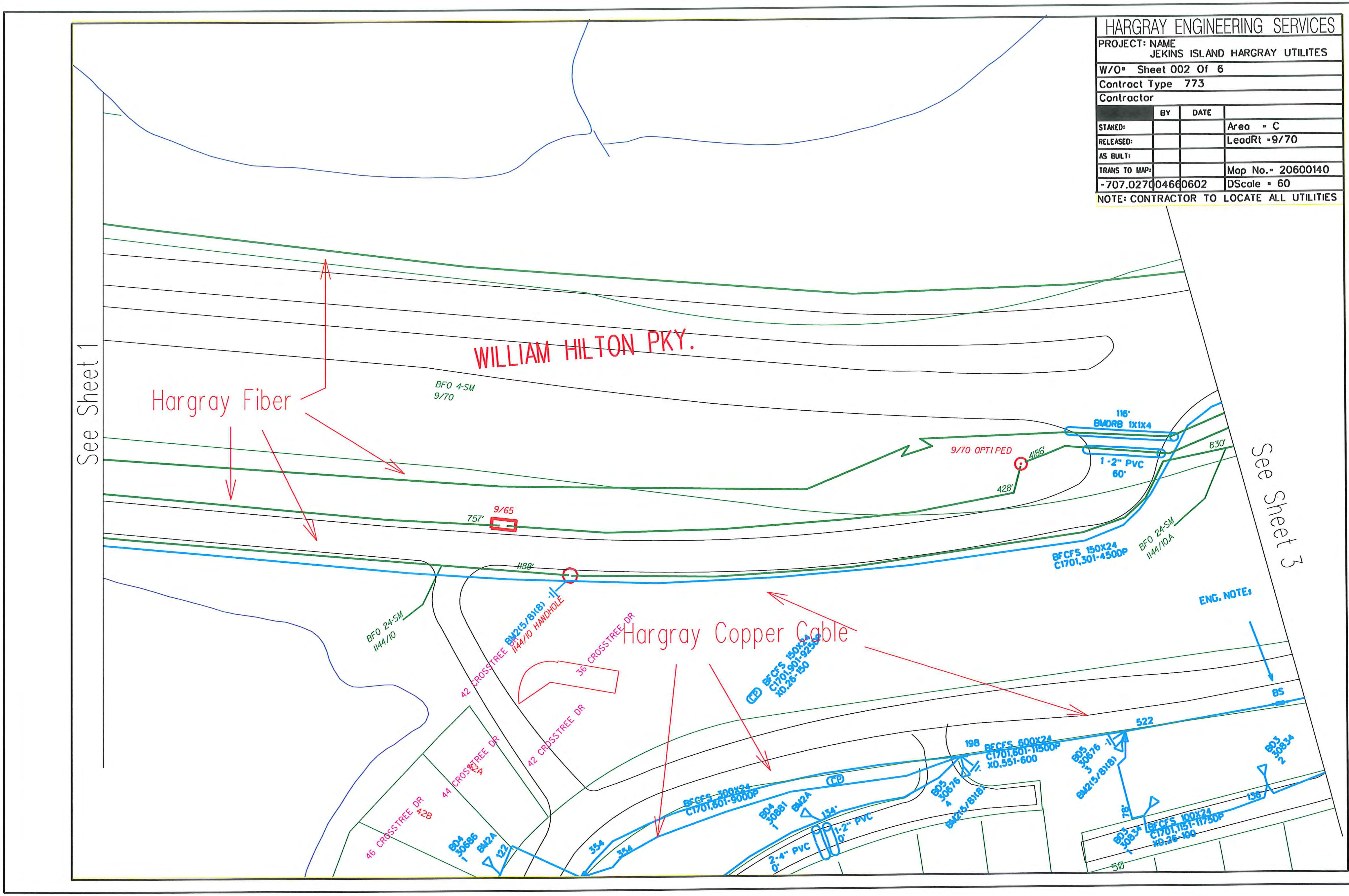

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Contractor			
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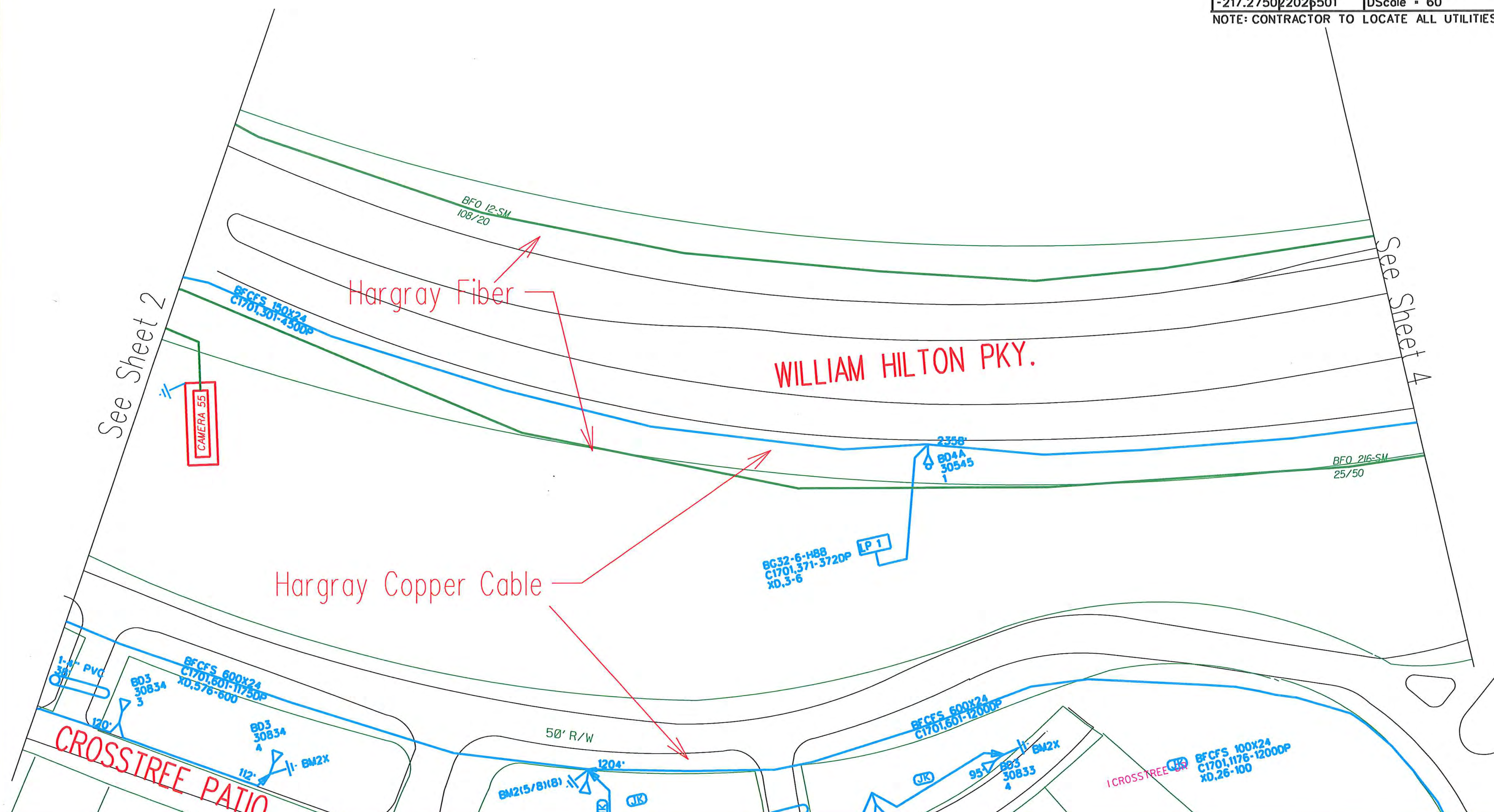
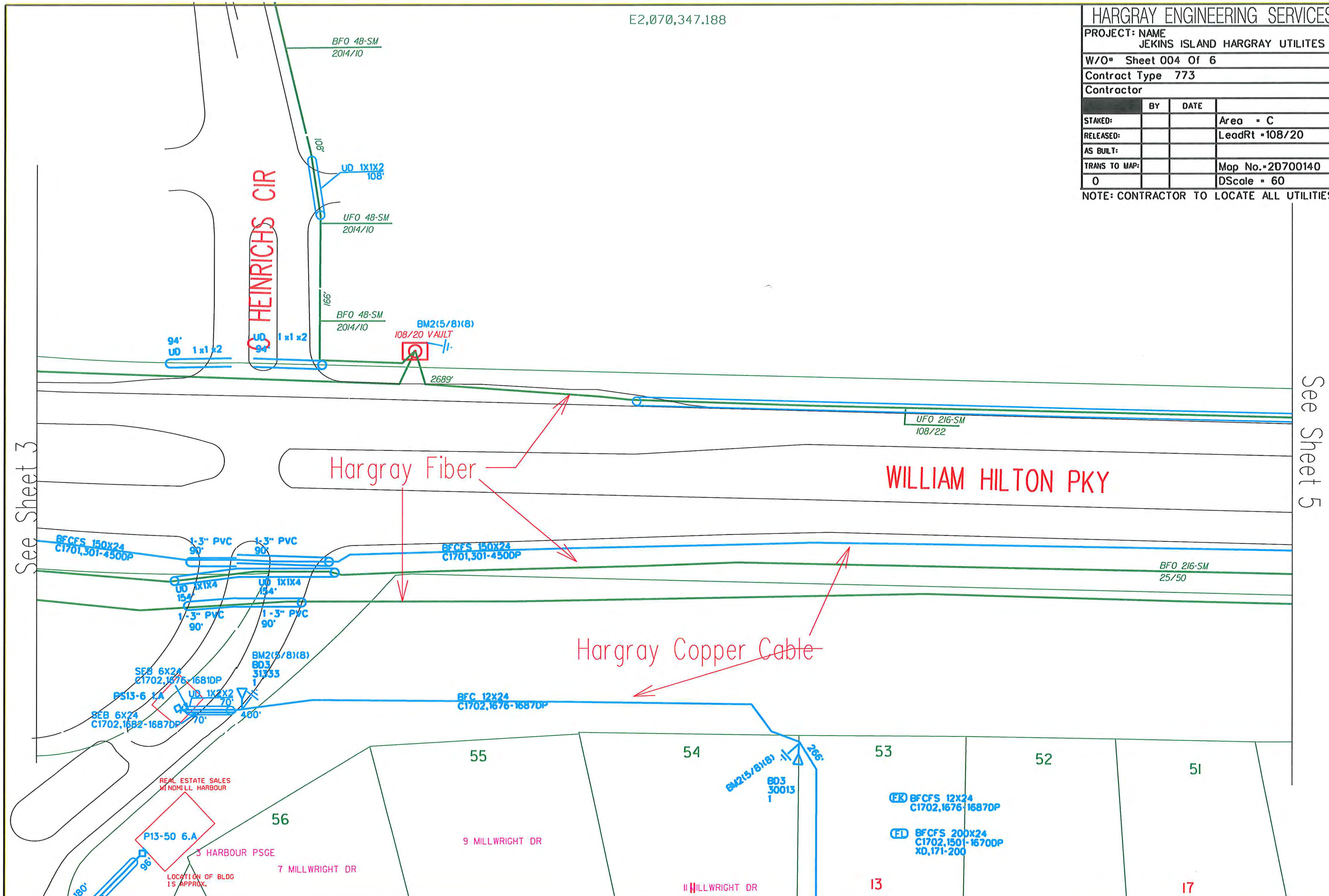
NOTE: CONTRACTOR TO LOCATE ALL UTILITIES

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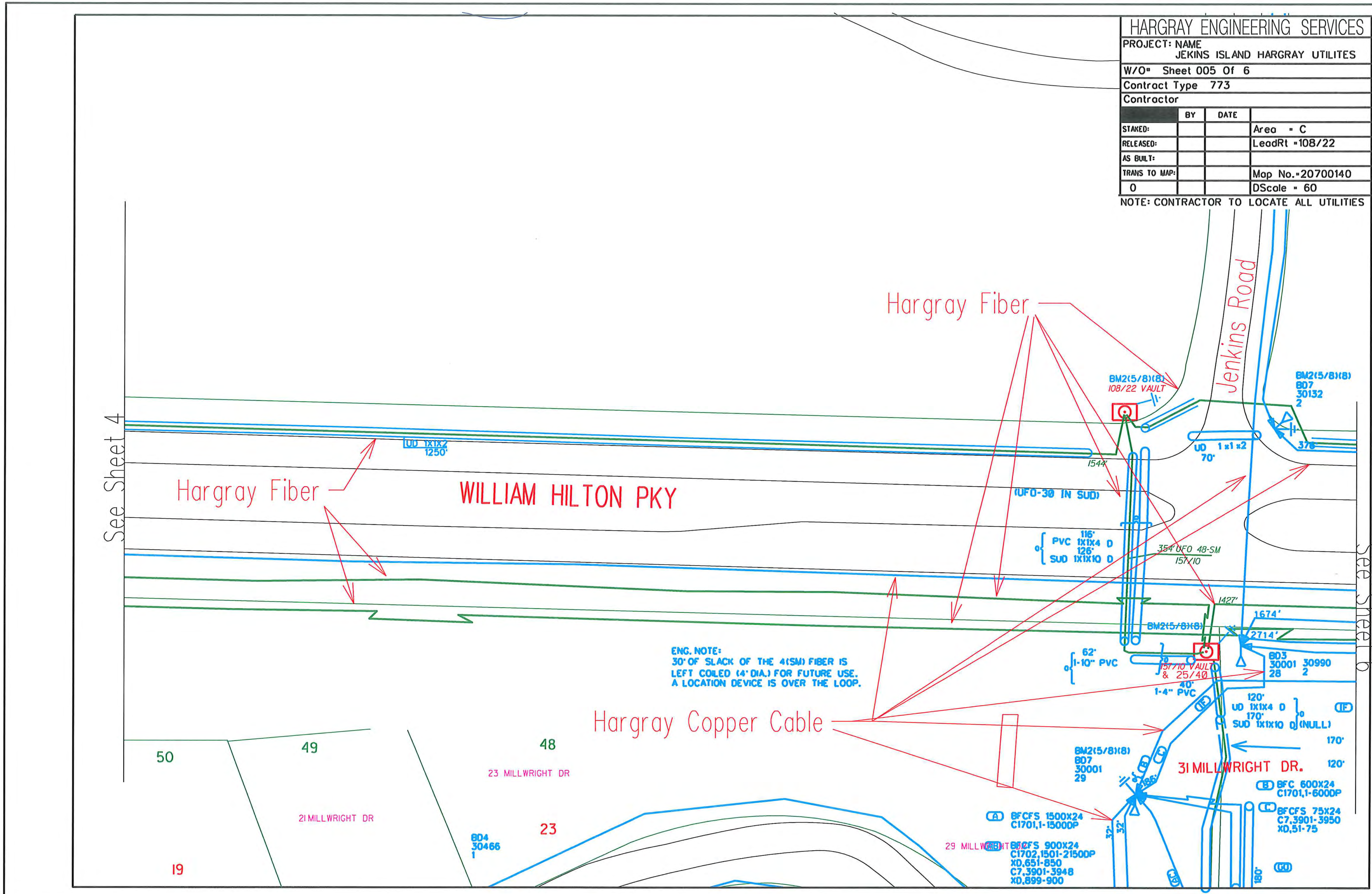
JEKINS ISLAND HARGRAY UTILITES
W/O# Sheet 004 Of 6
Contract Type 773
Contractor
[redacted] BY DATE
STAKED:
Area = C
RELEASED:
LeadRt =108/20
AS BUILT:
TRANS TO MAP:
Map No.=20700140
0
DScale = 60
NOTE: CONTRACTOR TO LOCATE ALL UTILITIES
E2,070,347.188
BFO 48-SM
2014/10
108'
UD 1X1X2
108'
UFO 48-SM
2014/10
HEINRICHS CIR
166'
BFO 48-SM
2014/10
BM2(5/8)(8)
108/20 VAULT
94'
UD 1x1x2
UD 94'
1x1x2
2689'
UFO 216-SM
108/22
See Sheet 3
See Sheet 5
Hargray Fiber
WILLIAM HILTON PKY
BFCFS 150X24
C1701,301-4500P
1-3" PVC
90'
1-3" PVC
90'
BFCFS 150X24
C1701,301-4500P
BFO 216-SM
25/50
UD 1X1X4
154'
UD 1X1X4
154'
1-3" PVC
90'
1-3" PVC
90'
Hargray Copper Cable
BM2(5/8)(8)
803
31333
1
SEB 6X24
C1702,1676-1681DP
PS13-6 1.A
UD 1X2X2
70'
70'
400'
SEB 6X24
C1702,1682-1687DP
BFC 12X24
C1702,1676-1687DP
55
54
53
52
51
56
BM2(5/8)(8)
266'
803
30013
1
FK BFCFS 12X24
C1702,1676-1687DP
FD BFCFS 200X24
C1702,1501-16700P
XD,171-200
REAL ESTATE SALES
WINDMILL HARBOUR
P13-50 6.A
3 HARBOUR PSGE
96'
180'
LOCATION OF BLDG
IS APPROX.
7 MILLWRIGHT DR
9 MILLWRIGHT DR
11 MILLWRIGHT DR
13
17



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JEKINS ISLAND HARGRAY UTILITES
W/O= Sheet 005 Of 6
Contract Type 773
Contractor
BY
DATE
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RELEASED:
AS BUILT:
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LeadRt =108/22
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DScale = 60
NOTE: CONTRACTOR TO LOCATE ALL UTILITIES
Hargray Fiber
Jenkins Road
BM2(5/8)(8)
108/22 VAULT
BM2(5/8)(8)
BD7
30132
2
UD 1x1x2
1250'
1544'
UD 1x1x2
70'
378'
See Sheet 4
Hargray Fiber
WILLIAM HILTON PKY
(UFO-30 IN SUD)
116'
PVC 1X1X4 D
126'
SUD 1X1X10 D
354' UFO 48-SM
157/10
1427'
1674'
2714'
BM2(5/8)(8)
See Sheet 6
ENG. NOTE:
30' OF SLACK OF THE 4(SM) FIBER IS
LEFT COILED (4' DIA.) FOR FUTURE USE.
A LOCATION DEVICE IS OVER THE LOOP.
62'
1-10" PVC
157/10 VAULT
& 25/40
40'
1-4" PVC
BD3
30001 30990
28 2
120'
UD 1X1X4 D
170'
SUD 1X1X10 D (NULL)
Hargray Copper Cable
170'
120'
50
49
48
23 MILLWRIGHT DR
BM2(5/8)(8)
BD7
30001
29
31 MILLWRIGHT DR.
186'
B BFC 600X24
C1701,1-600DP
C BFCFS 75X24
C7,3901-3950
XD,51-75
21 MILLWRIGHT DR
BD4
30466
1
23
A BFCFS 1500X24
C1701,1-1500DP
32'
32'
29 MILLWRIGHT DR
BFCFS 900X24
C1702,1501-2150DP
XD,651-850
C7,3901-3948
XD,899-900
180'
19

HARGRAY ENGINEERING SERVICES			
PROJECT: NAME JEKINS ISLAND HARGRAY UTILITES			
W/O# Sheet 006 Of 6			
Contract Type 773			
Contractor			
	BY	DATE	
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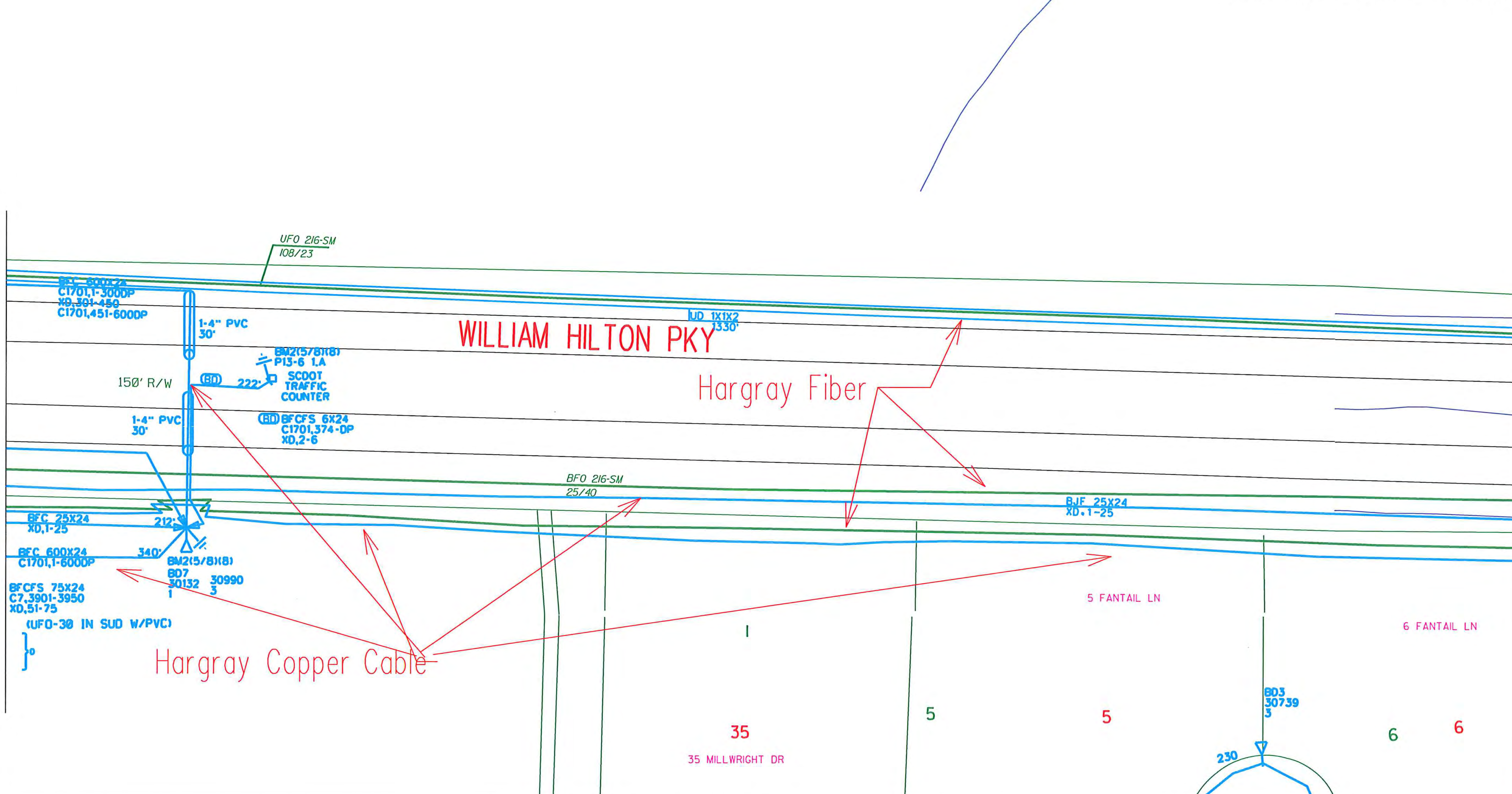
NOTE: CONTRACTOR TO LOCATE ALL UTILITIES

See Sheet 5



April 19th, 2012

Mr. Alan Matienzo
c/o S. C. Department of Transportation
P. O. Box 191
Columbia, SC 29202-0191

Re: Jenkins Island Frontage Road Project – Blue Heron Point

Alan
Dear ~~Mr. Matienzo~~:

I recently met with representatives of the Blue Heron Point neighborhood to provide an overview of the frontage road project and to discuss their concerns over the project as proposed and access to their neighborhood. The Blue Heron Point neighborhood is served exclusively by S-7-772 and is situated on a land-tied island known as Hog Island. The meeting was rather productive and while the neighborhood does not appear to be enamored with the proposed frontage road, they seem to generally agree that it is the best long term solution relative to access to and from US 278.

During the meeting, the neighborhood representatives cited a pair of 60" RCP runs beneath US 278 and aligned roughly with Crosby Creek, a tidal estuary that divides Hog Island from Jenkins Island to the east. They claimed that a fill section placed across this tidal estuary when US 278 was widened from two lanes to four lanes in the 1970's has disrupted tidal flow and led to a degradation of water quality and navigability in the years since. They feel that the twin 60" RCP were constructed to extend from one side of the US 278 right-of-way to the other, but that the fill-section slopes extend outside of the right-of-way on both sides in a manner that effectively nullified any benefit from them.

The community has apparently been engaged in a decades-long effort to restore this tidal flow beneath US 278 by obtaining the permits necessary to perform the excavations necessary to uncover the pipe ends, and is concerned that the subject frontage road project will make their efforts to accomplish this even more difficult. They are very interested in any opportunities to restore this tidal flow within the existing twin 60" RCP runs beneath US 278 that the frontage project may afford, and do not want to see additional fill placed to construct the new frontage road in a manner that counteracts this effort.

The neighborhood has provided me the enclosed documentation that summarizes their efforts to restore this tidal flow beneath US 278. I have reviewed it, and it paints a pretty clear picture of the history surrounding the matter. Excerpts of SCDOT plans portraying the location of the 60" RCP runs are included.

We discussed this at yesterday's meeting between Town staff and Department officials, including Resident Maintenance Engineer Mulligan, and there seemed to be a general unawareness of this issue or its history.

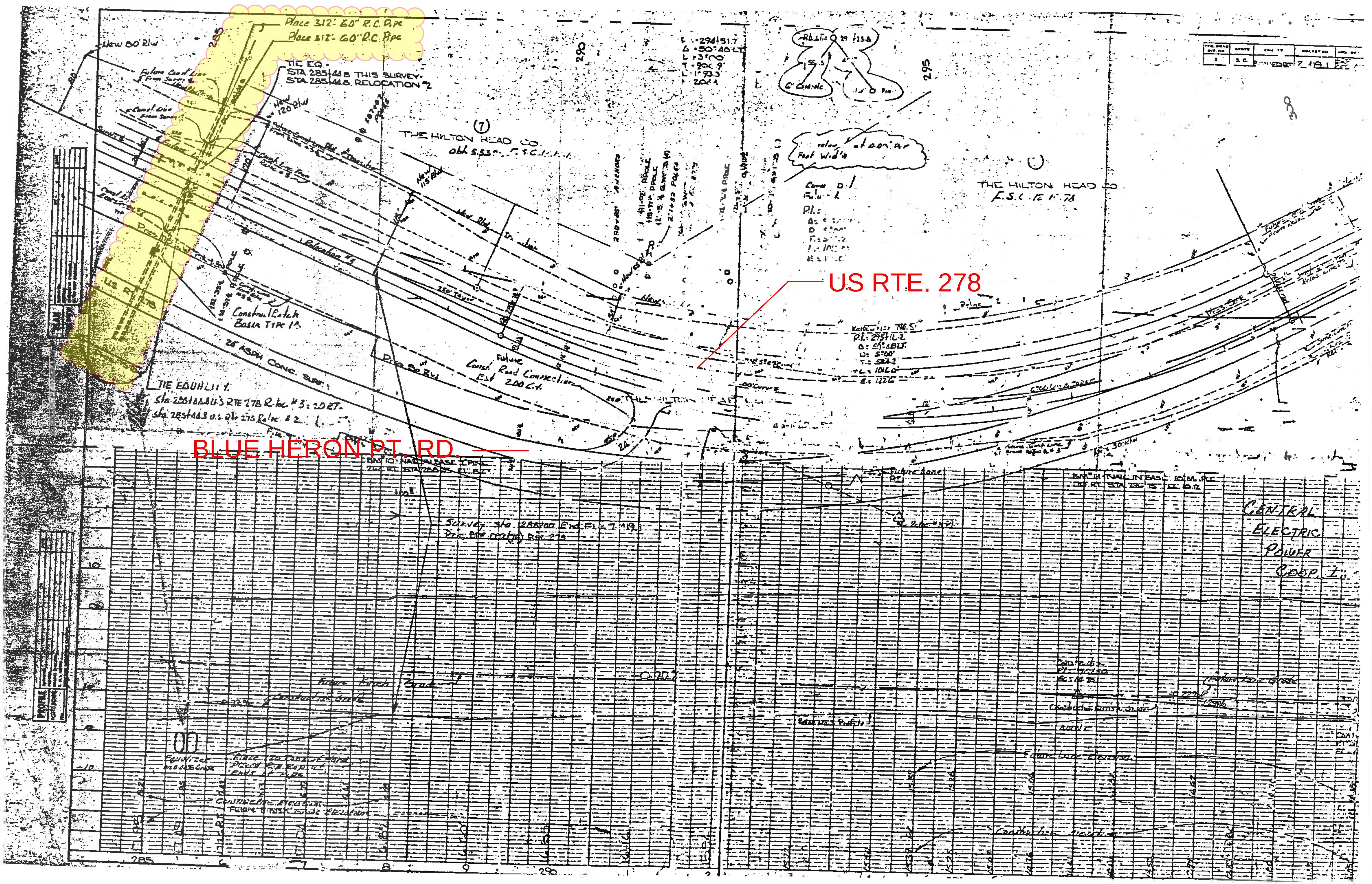
Please review this material as background information relative to the subject project's development, and let me know if we need to discuss or if you require additional information.

Sincerely,

Darrin A. Shoemaker, P.E.
Traffic and Transportation Engineer

Enclosure: Historical Documentation Packet

DAS/das



Place 312' 60" R.C. Pipe
Place 312' 60" R.C. Pipe
New 80' R/W
TIE EQ.
STA. 285+44.8 THIS SURVEY=
STA. 285+44.8 RELOCATION #2
New 120' R/W
THE HILTON HEAD CO.
THE HILTON HEAD CO.
US RTE. 278
Construct Catch Basin Type 1
24' ASPH. CONC. SURF.
TIE EQUALITY
BLUE HERON PT. RD.
Future Road Connection
CENTRAL ELECTRIC POWER COOP. I.
Future Finish Grade
Future Lane Grade
Equalizer
285
290
295

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G

Appendix G - Stakeholder Meeting

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COUNTY COUNCIL OF BEAUFORT COUNTY
BEAUFORT COUNTY TRAFFIC & TRANSPORTATION
ENGINEERING DEPARTMENT
113 Industrial Village Road, 29906
Post Office Drawer 1228, Beaufort, SC 29901-1228
Telephone: 843-255-2940 Fax: (843) 522-0520

June 3, 2015

RE: **Jenkins Island Access Management System Stakeholder Meeting**

Dear Mr. / Ms. Invitee:

You have been identified as a stakeholder for the above-mentioned project and we need your local experience, input, and ideas to develop a creative solution.

Beaufort County has identified the need to improve access management and safety while maintaining operational efficiency along the US 278 corridor on Jenkins Island. The preliminary study area for the project includes US 278 along Jenkins Island, from the termini of the bridges from Pinckney Island to the beginning of the causeway onto Hilton Head Island, for a length of approximately 5,500 linear feet. Three median cross-overs: Blue Heron Point Road, Windmill Harbour Entrance, and Jenkins Island Road are currently serving adjacent communities. The scope of the project includes development of an optimum solution through alternative analysis, and in concert with environmental constraints, to provide a safe and efficient access to local communities with minimum disruption to "through" traffic on US 278. The project shall also develop a Purpose & Need, in compliance with National Environmental Policy Act (NEPA), in order to properly prepare the project for its next stage of development.

Beaufort County has hired a consulting team led by HDR | ICA and Ward-Edwards, Inc. to study existing and future traffic, alternative analyses, and environmental constraints.

While our study team is qualified to gather, analyze and present the data, your experience in the study area will help us understand the people and the current issues behind the data. We would also welcome any recommendations / visions for the study area.

Having your input at this stage of the study process is very important. I hope you or a designated representative will join us in the Hilton Head Island Library Meeting Room on June 16th, 2015 from 4:30 p.m. to 7:30 p.m. The library is located at 11 Beach City Road, Hilton Head Island.

Sincerely,

Colin Kinton, PE
Director of Transportation Engineering

CK/mjh

cc: Gary Kubic

HDR SIGN IN

Name	Organization	Email Address
Blair Wade	HDR Inc.	blair.wade@hdrinc.com
Sadrul Ula	ICA Inc.	sadrul.ula@hdrinc.com
Randy Bellmann	HDR/ICA Engineering	randy.bellmann@HDRINC.com
Darrin Shoemaker	Town of Hilton Head Is.	darrins@hiltonheadislandsc.go
Colin Kinton	Beaufort County	ckinton@bcgov.net
Frank Hodge	Town of Bluffton	fhodge@townofbluffton.com
John Bentley	Hilton Head Harbor RV & Marina	~~Sarina~~ John @hiltonheadharbor.com
Sorina Bentley	" " " "	Sorina@hiltonheadharbor.com
Jason Covington	Beaufort County Sheriff's Office	jcovington@bcgov.net
Neil Baxley	Beaufort County SO/Emergency MGT.	neilb@bcgov.n
Gary Kubic	BCty Adm	gkubic@bcgov.net
Cynthia Bensch	C. Council	cbensch@bcgov.net
Rick Caporale	"	rcaporale@bcgov.net
★ Mike Garrigan	Windmill Harbour	garriganme@yahoo.com
Ernie Lindblad	Windmill Harbour	erlindblad@aol.com
Chris McCorkendale	Blue Heron Point	chris.mccorkendale@htc.hargray.com
Rob Moore	Blue Heron Pointe	Robmoore@charterone Realty.com
*Jim Ludlow	Mariners Cove	jimludlow@roadrunner.com
Eric Hoover	Ward Edwards	EHOOVER@WARDEDWARDS.COM
Greg Baisch	Ward Edwards	G-BAISCH@WARDEDWARDS.COM

Jenkins Island Access Management Project
Stakeholder Meeting

Welcome

The purpose of today's meeting is to discuss the details of the proposed traffic improvements along US 278 on Jenkins Island, answer your questions and receive comments. A map of the project study area is located on the reverse side of this handout.

Background

Staff formerly developed a conceptual plan to completely close all three unsignalized median crossovers on US 278 on Jenkins Island by constructing a frontage road beginning at Jenkins Road on the northern side of US 278, traversing the Town's Jenkins Island parcel, and intersecting Blue Heron Point Road. In 2011, at the request of the Town and County, the roadway improvement project was included in SCDOT's Statewide Transportation Improvement Program (STIP). Since inclusion in the STIP, the State has managed the project and provided $1,400,000 in funding.

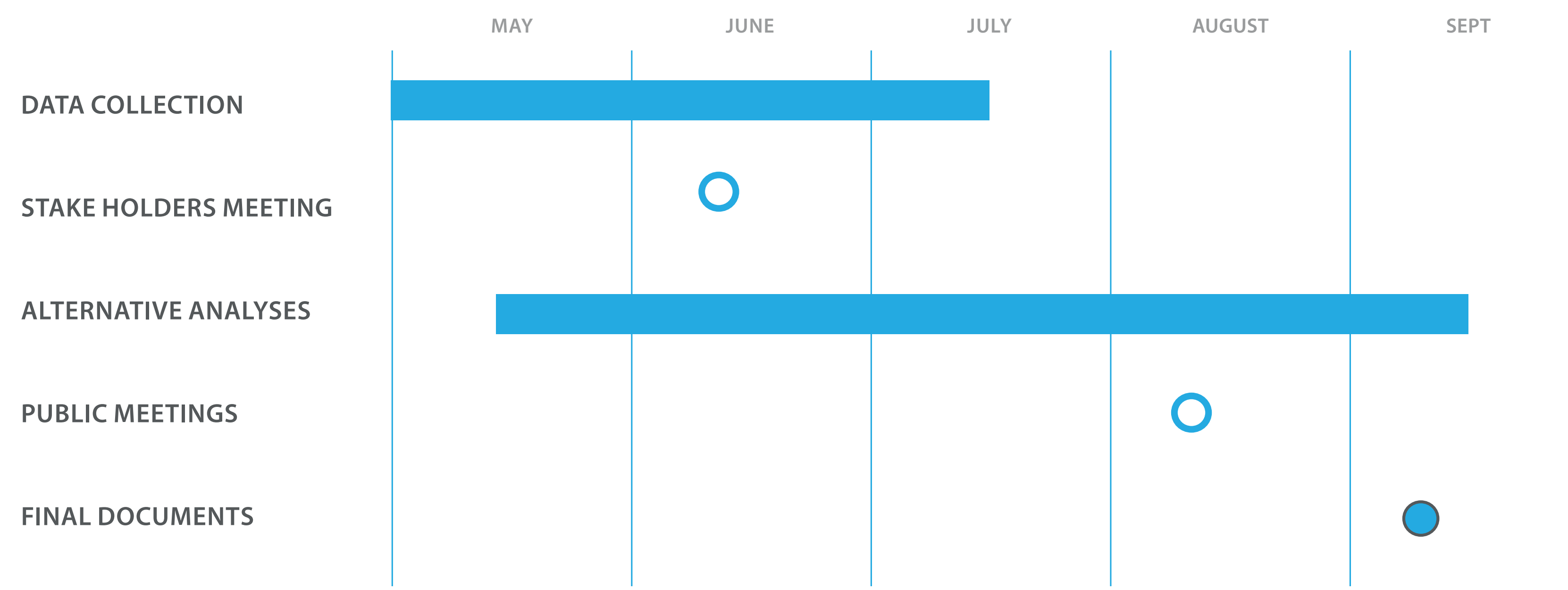
Project Purpose

Beaufort County and South Carolina Department of Transportation are working together to enhance and improve access management and safety while maintaining operational efficiency along the US 278 corridor on Jenkins Island. The preliminary study area for the project includes US 278 along Jenkins Island, from the termini of the bridges from Pinckney Island to the beginning of the causeway onto Hilton Head Island, for a length of approximately 5,500 linear feet. US 278 in the vicinity of the study area is a four-lane divided principal arterial serving approximately 52,000 vehicles per day (according to SCDOT 2013 ADT counts). Three median cross-overs: Blue Heron Point Road, Windmill Harbour Entrance, and Jenkins Island Road are currently serving the local, adjacent communities with limited or full access control on US 278.

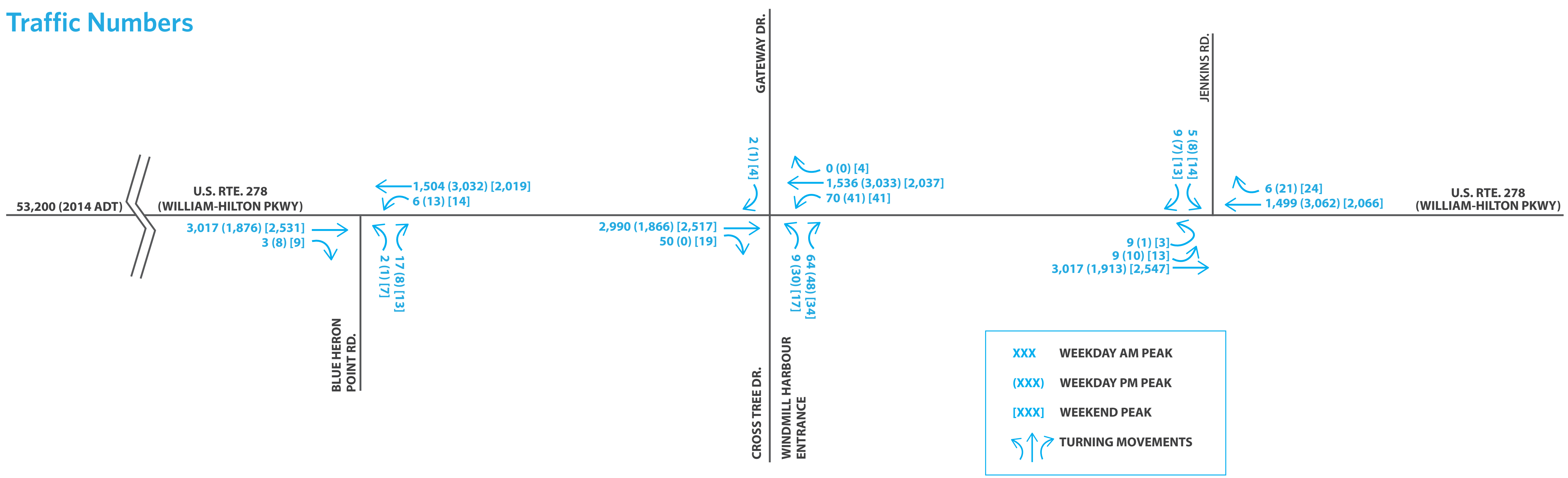
Project Goals:

- To provide a safe and efficient access to local communities with minimum disruption to "through" traffic on US 278
- To offer an optimum solution through alternative analysis that minimizes environmental impact
- To develop a Purpose & Need statement, in compliance with the National Environmental Policy Act (NEPA)

Schedule



Traffic Numbers




Project Study Area = 63 Acres
Delineated Wetlands (6/5/15)
Freshwater
Tidal Critical Area
Tidal Critical Area on Study Area Boundary
Tidal Critical Area on Study Area Boundary
Jenkins Island Cemetery
Tidal ditch
Tidal ditch
1 inch = 400 feet
0 200 400 800 Feet
N
Jarvis Creek

Stakeholder Meeting Minutes

Project:	Jenkins Island Access Management Project
Subject:	Project Stakeholder Meeting
Date:	Tuesday, June 16, 2015
Location:	Hilton Head Island Library Meeting Room, 4:30 pm – 7:30 pm

Attendees:

Gary Kubic – Beaufort County
Cynthia Bensch – Beaufort County Council
Rick Caporale – Beaufort County Council
Colin Kinton – Beaufort County
Lt. Col. Neil Baxley – Beaufort County Sheriff's Office
Master Sergeant Jason Covington - Beaufort County Sheriff's Office
Steve Riley – Town of Hilton Head Island
Darrin Shoemaker – Town of Hilton Head Island
Jim Ludlow – Mariners Cove Club
John Bentley – Hilton Head Harbor RV Resort
Sarina Bentley – Hilton Head Harbor RV Resort
Michael Garrigan – Windmill Harbour
Ernie Lindblad – Windmill Harbour
Chris McCorkendale - Blue Heron Point
Rob Moore – Blue Heron Point
Randy Bellmann – HDR|ICA
Ben Lewis – HDR|ICA
Sadrul Ula – HDR|ICA
Jesica Mackey – HDR
Blair Wade – HDR
Greg Baisch – Ward Edwards
Eric Hoover – Ward Edwards

	Topic	*Facilitator*
1	**Meeting Begins at 4:30 p.m.** Introductions	Ben Lewis
2	**Review of Scope:** • Preliminary NEPA documentation • Review utilities, traffic data, environmental concerns (wetlands/JD) • Alternative analysis • Concept designs	Ben Lewis
3	**Preliminary Environmental Screening** Colin Kinton: Request for explanation of NEPA • Blair: Explained that National Environmental Policy Act requires projects with federal funding or federal permits to evaluate impact of project on natural and human environment. Since we don't have a funding source for this project yet, the County is screening the project for environmental constraints. The goal is be compliant with NEPA in case the project receives federal funding. Michael Garrigan: Why project study area extends to marsh past Jenkins Island Rd? • Blair: Bigger study area to encompass potential environmental constraints and avoid re-assessment of area	Blair Wade
4	**Traffic** • Daytime and weekend studies being conducted • Team will evaluate past studies • Evaluate alternatives for solution	Sadrul Ula

- Peak is mid-morning eastbound
- U-Turn movements on Jenkins Island Road
- Not enough gap to make left turn

Gary Kubic: Asked about how the Bluffton Parkway Flyover is anticipated to change the traffic pattern. How will the gap timing be managed with traffic lights?

- General group concern reduction in gap times that will be caused by the construction of Bluffton Pkwy Fly-over and the signal at Buckingham Plantation / Moss Creek
- Sadrul: will evaluate alternatives using future traffic modeling including Bluffton Parkway flyover

HH Harbor RV Resort: What are peak hours used in traffic study?

- Sadrul: Weekday AM Peak = 8 to 9 a.m.; PM Peak = 4 to 5 p.m.; Weekend 3 to 4 p.m. Will also consider seasonal/summer traffic

Ernie Lindblad: Currently breaks in traffic because of Moss Creek light. Understands the Moss Creek Light and new light at Bluffton Parkway/Buckingham Plantation Drive will be timed so they are alternately green. Concern this will eliminate gap in traffic that allows turning movements. Saturdays in summer, traffic backs up on US 278 and nearly impossible to enter/exit Jenkins Island

- Colin: Lights will be coordinated to ease merging concerns on US 278 at flyover

Michael Garrigan: Make sure we get SCDOT traffic data documenting how traffic has increased over the years

- Will do for future traffic projections

HH Harbor RV Resort: Their peak traffic times do not necessarily reflect peak volumes of normal traffic operations. Need to consider 10 a.m. check-in for RV Park in traffic studies. Their peak traffic is between 11 a.m. and 1 p.m. and 3 p.m. and 6 p.m. They have 101 boat slips. 18 wheeler restaurant deliveries.

5 **Public Involvement Activities** — Jesica Mackey & Greg Baisch

- Stakeholder Meeting
- Community Meetings
    - Public meetings will be held in August with neighborhoods.
    - Will send out a Survey Monkey questionnaire to residents prior to and at community meetings to gather data.
    - Goal of meeting today is to understand what questions should be asked and best way to communicate with residents.

Recommended questions for On-line Survey:

- What is your opinion of cross-over closures?
- How far are you willing to travel to make right turns?
- How much land will Windmill Harbor give up?

Team should obtain letters HOAs and residents have sent to SCDOT

STAKEHOLDER FEEDBACK AND RECOMMENDATIONS / VISION: during this time, the meeting was opened to comments from the stakeholders.

6 **What are current problems / issues that you see?** — Jesica Mackey

- Constant traffic flows – very limited existing gap times
- Line of sight issues
    - Blue Heron Intersection – limited sight looking to the right around curve
    - Windmill Harbor Intersection – limited sight looking left around

curve

- Median vegetation limits the line of sight
- Speed of through traffic on Jenkins Island (from Bluffton & Hilton Head)
- Left turn out of neighborhoods
- U-turns at rush hour, primarily at Jenkins Island Road
- Lack of shoulders on Hog or Jenkins Island
- Increased vehicle accidents
  - At intersections
  - Run off road collisions coming around curve at Blue Heron Point
- Slowing traffic for school buses at Windmill Harbour can cause delays, rear end collisions; school bus turning movements are delayed and unsafe
- Increasing median age of residents that live on Jenkins Island (particularly Windmill Harbor)
  - Older residents may have more difficulty making split-second decisions
- U-turns are easy for passenger vehicles, but need to consider turning movements of larger vehicles
- RV, boat trailer, 18-wheeler deliveries to restaurant at campground – need to consider these vehicles and their turning movements in alternatives
  - May not be able to make the sharp turns as proposed by previous frontage road option.

Between Moss Creek and Squire Pope Road, US 278 is 2 lanes, while the rest of 278 is 3 lanes. What issues does that cause and how does it affect project?

- Colin Kinton: US 278 is operating at capacity and is constrained by 2 lanes in area
- Darrin Shoemaker: Ramifications of 2 lanes include increased accidents, difficulty in speed/traffic control.

Gary Kubic: high volume of traffic on a narrow corridor causes high frequency of accidents; speed coming off bridge is an issue; need crash mitigation and need shoulders to move accidents over

Lt. Col. Neil Baxley: Emergency vehicles travel to Jenkins Island from Bluffton. Alternatives should keep these needs in mind regarding accident mitigation strategies

Greg Baisch: Are there considerations for bicycle/pedestrian traffic? Observed several cyclists prior to meeting. Currently no shoulder.

7 **What possible recommendations for improvement do you envision?** Jesica Mackey

- Current project to construct 900 ft acceleration lane on US 278 eastbound from Windmill Harbor. Will shift left turn lane into Windmill Harbor to improve line of sight.
- HH Harbor RV Resort: RVs at HHI RV Resort on Jenkins Island Rd
  - Recommend to keep the median cross-over open at Jenkins Island Road
  - Concerned access road is built along Blue Heron Point and RVs making right turn into Blue Heron Point – RVs may back up on US 278 bridge over Mackay Creek
  - Existing left turn lane works; few complaints from RVers
  - Consider light at Jenkins Island Road with left turn signal
  - Very few left hand turns from Jenkins Island Drive to HHI
- Discussion of future lanes on US 278 / widening of bridge – what affect on future through traffic?
- Rob Moore: closing medians allows through traffic until bridges can be widened to 3 lanes.
- Gary Kubic: Widening of bridge and US 278 on Jenkins Island is not on DOT

long range plan for the next 10-15 years. There is currently no funding for engineering required for this widening.

- Councilwoman Bensch: convert median to travel lane and add a light at Jenkins Island Rd.
- Colin Kinton: Modified super street
  - Traffic only stops for left turn movement
  - Construct "bulb" to accommodate large vehicle U-turns
  - Traffic signals would be required for this option; Darrin Shoemaker stated signals would cause delays in through traffic, also stated the median may not be large enough for large vehicles
  - Stakeholders seemed to have a somewhat open opinion of the U-turn alternative
- Sadrul: previous SCDOT studies have found that traffic signals are unwarranted and/or too close to US 278 bridge over Mackay Creek.
- Ernie Lindblad: supports four right hand turn option with frontage or access road
- Rob Moore: Recommendations for grade separation/tunnels across US 278.
- HHI Harbor RV Resort: Recommendation for grade separation/flyover at Windmill Harbor/Gateway
- Rob Moore: Blue Heron Point concern over constructing 4 right hand turns alternatives
  - Recommend not constructing a frontage road that ties to Blue Heron Pt
  - Area has lots of constraints, including wetlands and utility lines
  - Concern over increased traffic in Blue Heron Point.
  - He has concerns about noise, safety, security if neighborhood is used for thoroughfare.
  - Recommend using alternative where land is more available with less constraints
- Ernie Lindblad: Right hand turn lane option is practical and financially feasible; Windmill Harbor would move entrance
- Colin Kinton: Long-term solution might be costly and require a lot of time; County may need to consider imperfect/partial solutions that could be phased and/or inexpensive in near term
- Rob Moore: team should evaluate the impact of the 4 right hand term on home values, aesthetics.
- Mike Garrigan/Ernie Lindblad: Safety should be considered first and recommend 4 right hand turn lane option
- HHI RV Resort - Support acceleration lane from Jenkins Island road onto US 278 westbound. Would accommodate RVs turning right out of RV park onto US 278.
- Notes from project maps (additionally from those stated above)
  - D. Shoemaker: The gated Windmill Harbour access to Blue Heron Pt road needs to be maintained
  - D. Shoemaker: If alternative access provided, the section of Gateway Dr. (from US 278 to powerline) could be removed

8 **What potential environmental impacts concern you?** — Jesica Mackey & Blair Wade

- Blue Heron Point is actually located on Hog Island, which is separate from Jenkins Island
- Blue Heron Point Road is original alignment of US 278
- Gary Kubic – when 278 was widened and improved, SCDOT put 2-60" pipes under US 278 between creeks and marshes.
  - Culverts have not been maintained and are clogged. They are not providing flushing of water between Hog Island and Jenkins Island.
  - Concern that poor function has caused siltation issues at HHI RV marina. Personal docks have restricted use based on tides due to

blocked flow of water.
    - Are these pipes sufficient and can they be cleaned?
- Gary Rubric: suggestion if frontage road is built, consider extending culverts and improving functionality under new road. Reduced cost compared to constructing bridge over marsh and would improve tidal connection.
- Group was asked about resident concerns over tree removal if necessary for alternatives. Residents not overly concerned with the loss of trees to provide a solution to access problems.
- Rob Moore: concern over health of wetlands
- HHI RV Resort: alternative should use power easement for potential alternative to minimize potential environmental impacts.

Next Steps: Community meetings — Jesica Mackey

- Windmill Harbour has meeting room and email lists for residents
- RV Campground: has 75 person meeting room; best to communicate via fliers and email
- Blue Heron Point: can use RV meeting room; best to communicate via fliers and emails
- Mariner's Cove Club requests separate meeting
- Make sure residents have 2 week notice of meetings

Councilwoman Bensch will discuss project at county council forum and have made this project priority for sales tax referendum

Meeting Adjourns at 6:30 p.m.

H

Appendix H - Public Information Meetings and Online Survey

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RE: Jenkins Island Access Management System - Public Information Meetings

Dear Mr. / Ms. Invitee,

Per our previous correspondence, you are identified as a stakeholder for the above-mentioned project and thus are invited to attend the public information meetings per the schedule below.

The consulting team led by HDR | ICA and Ward Edwards, Inc., as hired by Beaufort County, has been conducting design services and environmental documentation and previously conducted a stakeholder meeting for the project on June 10, 2015. The information obtained from the stakeholder meeting has been documented and utilized in the current development of the project.

The public meetings will provide the local communities the opportunity to view the proposed conceptual alternatives for the project as well as to ask questions of the project team and provide any comments. The information obtained from these meetings will be utilized to finalize the project documentation and development of the Purpose & Need, in compliance with National Environmental Policy Act (NEPA), in order to properly prepare the project for its next stage of development.

There will be four public meetings for this project, one for each of the local communities who access US 278 on Jenkins Island. The information presented at each meeting will be identical.

I hope you or a designated representative will join us for the following public meetings;

Public Meeting No. 1

Date: Aug. 10, 2015

Time: Noon – 2 PM

Location: Hilton Head RV Resort Lounge

Address: 43A Jenkins Rd.
Hilton Head Island, SC

Public Meeting No. 2

Date: Aug. 10, 2015

Time: 4 PM – 6 PM

Location: South Carolina Yacht Club – Windmill Harbour

Address: 10 Yacht Club Drive
Hilton Head Island, SC

Public Meeting No. 3

Date: Aug. 12, 2015

Time: 4 PM – 6 PM

Location: Hilton Head Library Meeting Room
Address: 11 Beach City Rd.
Hilton Head Island, SC

Public Meeting No. 4

Date: Aug. 12, 2015

Time: 6:30 PM – 8:30 PM

Location: Hilton Head PSD Community Room
Address: 1 Oak Park Dr. #21
Hilton Head Island, SC

Sincerely,

Colin Kinton, PE
Director of Transportation Engineering

CK/mjh

cc: Gary Kubic

Jenkins Island Access Management Project | Public Information Meeting

Project Goals

Provide a safe and efficient access to local communities with minimum disruption to "through" traffic on US 278

Offer an optimum solution through alternative analysis that minimizes environmental impact

Develop a Purpose & Need statement, in compliance with the National Environmental Policy Act (NEPA)

Project Timeline

2009 – The SCDOT conducted a signal justification study at US 278 and the Windmill Harbor entrance. The study found that volume from Crosstree Drive and Gateway Drive did not warrant signalization.

2010 – The Town of Hilton Head Island provided an Engineering Study to the SCDOT indicating that traffic signals were not warranted at US 278 and the Windmill Harbour entrance. The study recommends constructing a parallel route on the northern side of US 278 between Blue Heron Point Road and Jenkins Road and reducing the speed limit west of the Project Study Area from 55 MPH to 50 MPH.

2011 – In 2011, at the request of the Town and County,the roadway improvement project was included in SCDOT's Six Year (2009 to 2015) Statewide Transportation Improvement Program (STIP).

2013 – In August, Windmill Harbour Property Owners Association provided Beaufort County with a "Compromise Plan to Provide Major Safety Improvements to Jenkins Island Residents".

2014 – In January, Beaufort County Traffic Engineering provided a review of Windmill Harbour Property Owner's Association Compromise Plan. The review supported elimination of left-turn exits at Blue Heron Point Road and Windmill Harbor.

2015 – Current improvements within the Project Study Area include the construction of an eastbound acceleration lane on US 278 at the Windmill Harbour entrance. This improvement was listed in the SCDOT STIP as a system upgrade for the Lowcountry Council of Governments.

2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015

Project Need

Table 3.1 - Level of Service Critieria

Level of Service	Control Delay - Unsignalized Intersection (seconds/vehicle)	Traffic Flow Description
A	0–10	Free-flow conditions. Desired movements are virtually unaffected by the presence of other vehicles.
B	> 10–15	Traffic flow is stable. The presence of other vehicles only slightly restricts the freedom to maneuver.
C	> 15–25	Traffic flow is stable, but increasing difficulty of turning maneuvers.
D	> 25–35	Approaching unstable traffic flow conditions.
E	> 35–50	Unstable traffic flow conditions.
F	> 50	Unacceptable LOS. Very unstable traffic flow conditions exist.

Notes

1. The traffic study was performed for the existing year (2015), opening year (2020) and design year (2040) traffic volumes. For the 2035 No-Build condition, it was assumed that US 278 will be widened to provide an additional through lane in each direction.
2. Table 3.2 shows the results of the analyses for No-Build condition. The No-Build condition analyses indicate that all intersections (side road approach) are currently operating at LOS E and LOS F with long delays during peak periods. Under future No-Build condition, the side road traffic are expected to operate at LOS F with longer delays and even most of the left-turn traffic from US 278 to side roads are expected to operate at LOS F.

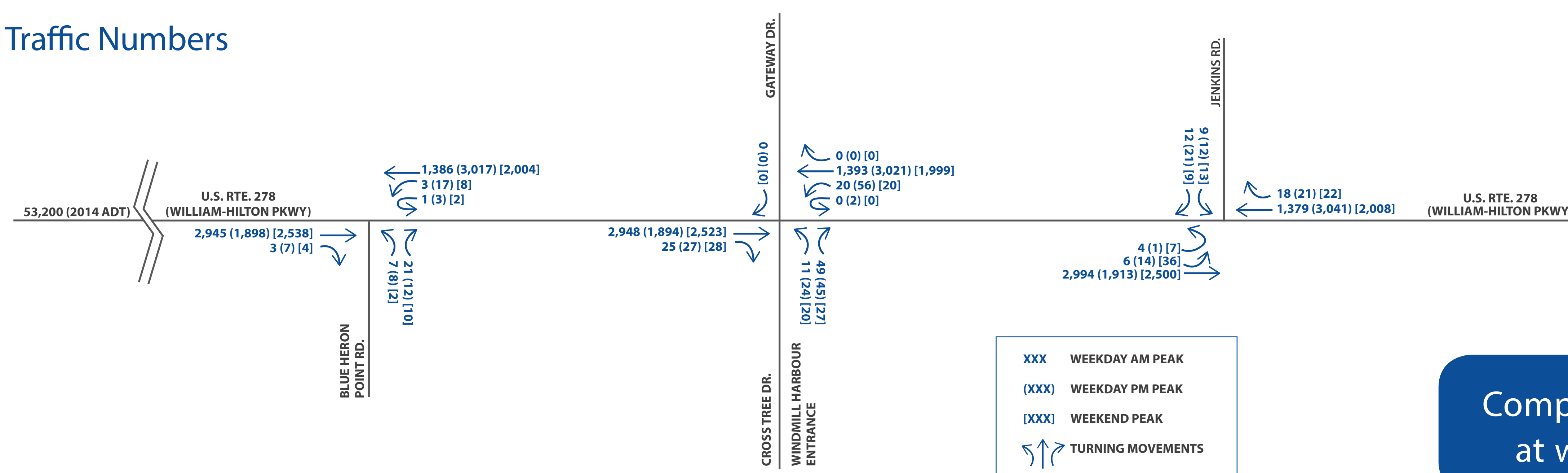
Table 3.2 - Intersection Levels of Service Summary - No Build Condition

Intersection	Control[1]	Movement	LOS[2] (2015) AM	LOS[2] (2015) PM	LOS (2020) AM	LOS (2020) PM	LOS (2035) AM	LOS (2035) PM
Blue Heron Point at US 278	Free	Westbound US 278 (Turning Left on Blue Heron Point Rd)	F	C	F	C	F	E
	Stop	Northbound Blue Heron Point Rd (Turning Right or Left onto US 278)	F	E	F	F	F	F
Crosstree Drive at US 278	Free	Westbound US 278 (Turning Left on Crosstree Dr)	F	C	F	C	F	F
	Stop	Northbound Crosstree Dr (Turning Right or Left onto US 278)	F	F	F	F	F	F
Jenkins Road at US 278	Free	Eastbound US 278 (Turning Left on Jenkins Rd)	C	F	C	F	C	F
	Stop	Southbound Jenkins Rd (Turning Right or Left onto US 278)	E	F	F	F	F	F

[1] Control refers to the movement of the vehicle at the turn. For example, a vehicle traveling westbound on US 278 is not required to stop before turning left onto Blue Heron Point Road. However, a vehicle traveling northbound on Crosstree Drive is required to stop at a stop sign before turning left or right onto US 278.

[2] Beaufort County 2010 Comprehensive Plan establishes a goal of LOS "D" for roads within the County. Red text indicates unacceptable LOS, or those worse than "D".

Traffic Numbers



Next Steps

Current Project:

Beaufort County will receive a complete environmental screening document in September and will then make a decision on a future construction project.

Construction Project:

1. Identify Funding Source (No funding available at this time)
2. Conceptual Design and NEPA review
    a. Public Meeting
    b. Decision Document
3. Final Design and Permitting
4. Construction (Upon funding appropriation)

Complete online survey by Friday, August 21 at www.surveymonkey.com/r/Jenkins_Island

Proposed Alternatives

No Build

No changes to the current road.

Alternative 1 – Right-In, Right-Out with Frontage Road

All existing median cross overs on US 278 would be closed, existing access points (Blue Heron Point Road, Gateway Drive, Crosstree Drive, and Jenkins Island Road) would be reconstructed to allow for only right-in and right-out movements. A frontage/access road would be constructed along the north side of US 278 connecting between existing Blue Heron Point Road to the west and Jenkins Road to the east.

Alternative 2 – Median U-Turn

All existing median cross overs would be reconstructed to allow for left turns into the communities from US 278. The existing access points (Blue Heron Point Road, Gateway Drive, Crosstree Drive, and Jenkins Island Road) would be reconstructed to allow traffic from the communities to make only right turns on US 278. Two new median openings would be constructed between Crosstree Drive/Gateway Drive and Jenkins Road with adequate storage length and U-turn facilities on US 278 to accommadate large vehichles. Adequate acceleration lanes would be provided at all access points. The existing left turn traffic from Blue Heron Point Road and Crosstree Drive would make right turns on US 278 and then make a U-turn on the new median crossover to travel west on US 278. Similarly, the existing left turn traffic from Jenkins Road would make a right turn on US 278 and then make a U-turn on the new median crossover to travel east on US 278.

Project Study Area

H1

Appendix H1 Hilton Head Harbor Resort and Marina

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Jenkins Island Access Management Project

SIGN-IN SHEET
Public Information Meeting
August 10, 2015

CONTACT INFORMATION	
Name Wm. Copenhaver + Dixie Community *(if applicable)* HHRV	Address 43 Jenkins Is. Rd. Lot 45 City/Zip 29926 HHI. Phone 513-368-2026 Email wmcope2@yahoo.com
Name Rick Caporale Community *(if applicable)* HHRV	Address Bft. Cty. Council City/Zip Phone Email
Name Hugh & Judy Helton Community *(if applicable)* HHRV	Address PO Bx 22685 City/Zip Savannah, GA 31403 Phone 912-658-1289 Email hh40k@comcast.net
Name MIKE + MARTHA DLUGOS Community *(if applicable)* HHRV	Address 43 JENKINS Rd #137 City/Zip Phone 865-603-0842 Email MDDLUGOS@GMAIL.Com

For Office Use Only: #__1__ of #______
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Jenkins Island Access Management Project

SIGN-IN SHEET
Public Information Meeting
August 10, 2015

CONTACT INFORMATION	
Name James Babb / Sheila Babb Community *(if applicable)* HH RV	Address 43 Jenkins Rd Lot 136 City/Zip Hilton Head SC Phone 404 626 6674 Email Jeb43371@yahoo.com
Name Carla Jimenez Community *(if applicable)* HHRV Resort · Marina	Address 43 Jenkins Rd Lot 100 City/Zip Hilton Head, SC Phone 843-832-8479 Email mjimeneziv@sc.rr.com
Name Larry WelTikol Community *(if applicable)*	Address 43 Jenkins Rd Lot 132 City/Zip HiLTon Head SC Phone 702-429-0084 Email
Name CROOKALL, DAVID Community *(if applicable)* ~~RV~~ RV Park	Address ~~43~~ 43 Jenkins Rd lot 51 City/Zip HHI SC 2992 Phone 843-592-3700 Email

For Office Use Only: #__2__ of #________
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Jenkins Island Access Management Project

SIGN-IN SHEET
Public Information Meeting
August 10, 2015

CONTACT INFORMATION	
Name Linda Lockman Community (if applicable) Sunset Grille OWNER	Address 40 Old House Creek DR. City/Zip HHI, SC 29926 Phone 843-301-9464 Email Lindalu1313@AOL.
Name Richard Hutchinson Community (if applicable) RV Resort Windmill Harbour	Address 63 Sparrowhawk City/Zip HHI, SC 29926 Phone 843-342-6656 Email RK Hutchinson@RoadRunner.Com
Name Mary Waggoner Community (if applicable) RV Resort	Address Lot 70 City/Zip 29926 Phone 843-348-5679 Email rmwaggy@yahoo.com
Name Ben Morgan #89 Community (if applicable) HH. RV. Marina	Address 43B Jenkins Rd City/Zip HHI. 29926 Phone Email

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Jenkins Island Access Management Project

SIGN-IN SHEET
Public Information Meeting
August 10, 2015

CONTACT INFORMATION	
Name Janice Gravelin Community *(if applicable)* RV Resort	Address 73 City/Zip Hilton Head SC Phone 843 422-9104 Email jbgravelin@yahoo.com
Name Bob Krell Community *(if applicable)* RV Resort	Address 9 Buttonbush Lane City/Zip HHI, SC 29926 Phone 843-368-5669 Email RKRELL3764@aol.com
Name Keith Miller Community *(if applicable)* RV Resort	Address 303 Theron Court / 43 Jenkins Rd Lot 184 HHI, SC 29926 City/Zip Candler, NC Phone 8285452167 Email rkmiller00@gmail.com
Name Roy & Linda Monk Community *(if applicable)*	Address 43 Jenkins Rd. Lot 39 City/Zip Hilton Head, S.C. 29926 Phone 770-241-2585 Email

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Jenkins Island Access Management Project

SIGN-IN SHEET
Public Information Meeting
August 10, 2015

CONTACT INFORMATION	
Name Robert Brown Community (if applicable) HHRV	Address 43B Jenkins Rd #168 City/Zip Hilton Head Island 29926 Phone 248 217 1486 Email rgbrown168@gmail.com
Name Larry & Gwen Price Community (if applicable) HHRV	Address 43 B Jenkins Rd #186 City/Zip Hilton Head Island 29926 Phone 864 809 7369 Email pricegwencole@gmail.com
Name WILLIAM E LITTELL 5 GUMTREE RD UNIT H14 HILTON HEAD, SC 29926 Community (if applicable) HHRV LOT# 58 & 86	Address City/Zip Phone 843 683 0019 Email
Name KAREN & DICK SKULINA Community (if applicable)	Address 43 Jenkins Rd #103 City/Zip Hilton Head SC 29926 Phone 386-225-6975 Email 2SKULINAS@gmail.com

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Jenkins Island Access Management Project

SIGN-IN SHEET
Public Information Meeting
August 10, 2015

CONTACT INFORMATION	
Name Roy B. & SANDRA PENWELL Community *(if applicable)* BLUE HERON POINT & HH RV Resort	Address 22 BLUE HERON POINT Rd City/Zip HHI 29926 Phone 937 545 5377 Email WNDSWPT1@EARTHLINK.NET
Name Sarina & John Bentley Community *(if applicable)* Hilton Head Harbor	Address PO Box 21585 City/Zip Hilton Head, SC 29925 Phone 843-681-3256 Email sarina@hiltonheadharbor.com
Name Sarah Wood Community *(if applicable)* RV Resort marina	Address 43 Jenkins Road Lot 191 City/Zip Hilton Head. Is, SC 29926 Phone 843-726-1477 Email W fulltimers @ GMail com
Name MARY Leonard Community *(if applicable)* RV Resort	Address 43 JENKINS. #175 City/Zip Phone 316 2105316 Email MML1648@yahoo.Com

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Jenkins Island Access Management Project

SIGN-IN SHEET
Public Information Meeting
August 10, 2015

CONTACT INFORMATION

Name Philip Lund Community *(if applicable)* Harbor RV Resort	Address 43 Jenkins Rd #123 City/Zip Hilton Head IS, SC 29926 Phone (501) 249-3144 Email fliplund@hotmail.com
Name Butch Puplava Community *(if applicable)*	Address 13 Whiteoaks Circle City/Zip Bluffton, SC Phone 843-247-4560 Email Butch@atlanticcoastmaintenance.com
Name Kenneth + Tammy Beauregard Community *(if applicable)* Harbor RV Resort	Address 43 Jenkins Rd #190 City/Zip Hilton Head Isl. SC 29926 Phone (401) 724-5272 Email KenandT@aol.com
Name Community *(if applicable)*	Address City/Zip Phone Email

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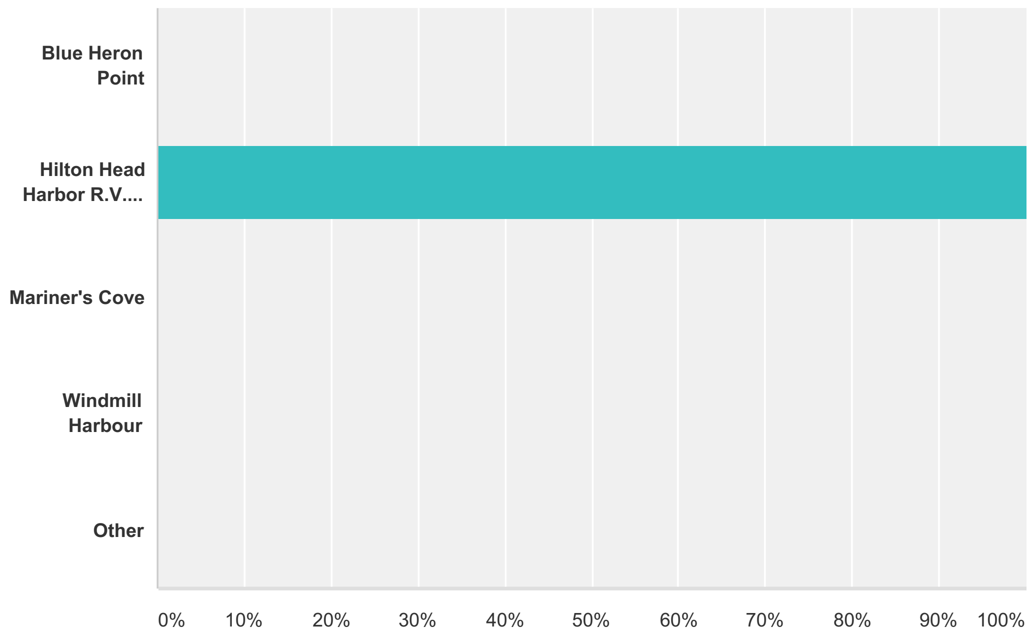
Q1 Please select the community where you currently reside.

Answered: 9 Skipped: 0

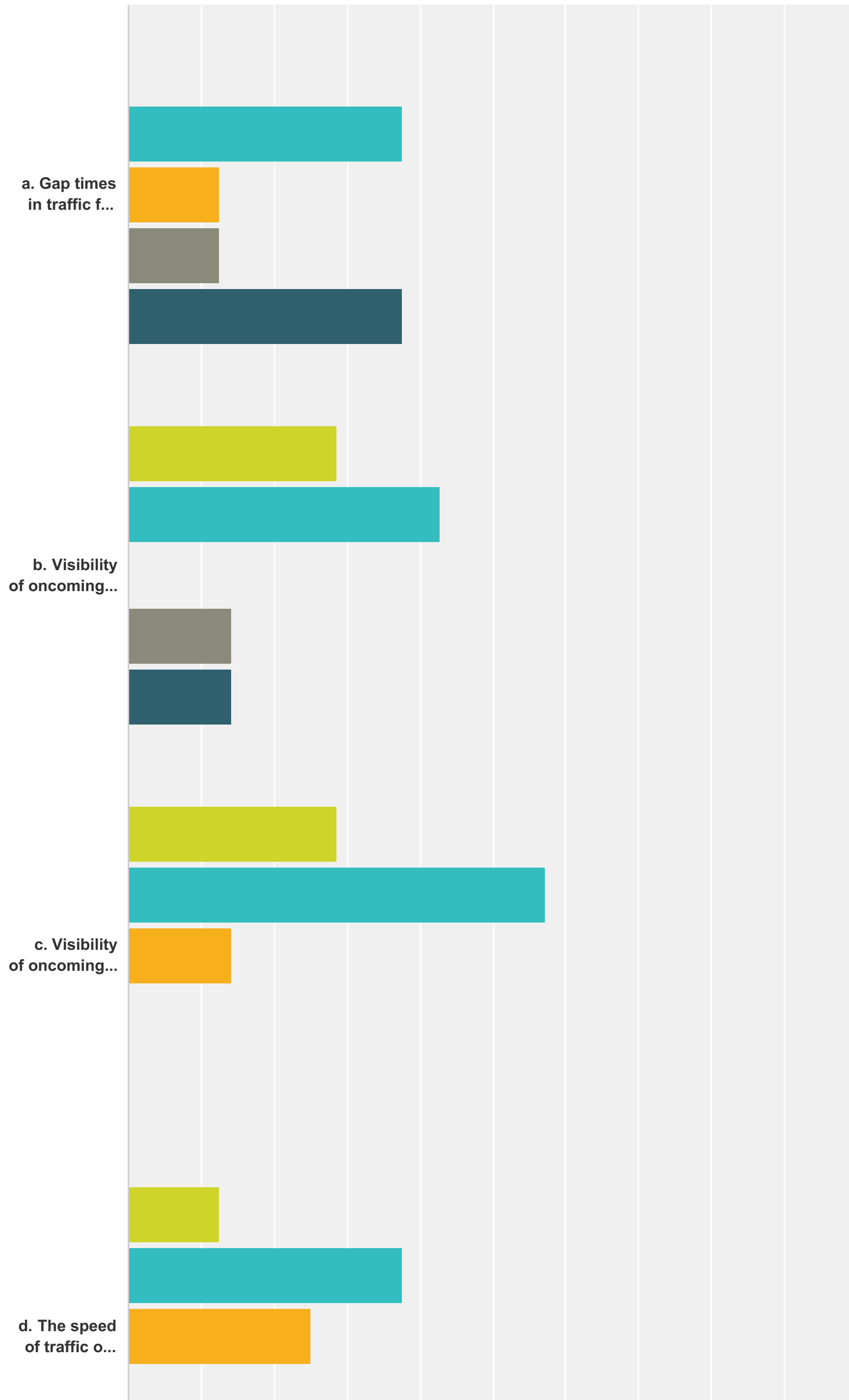


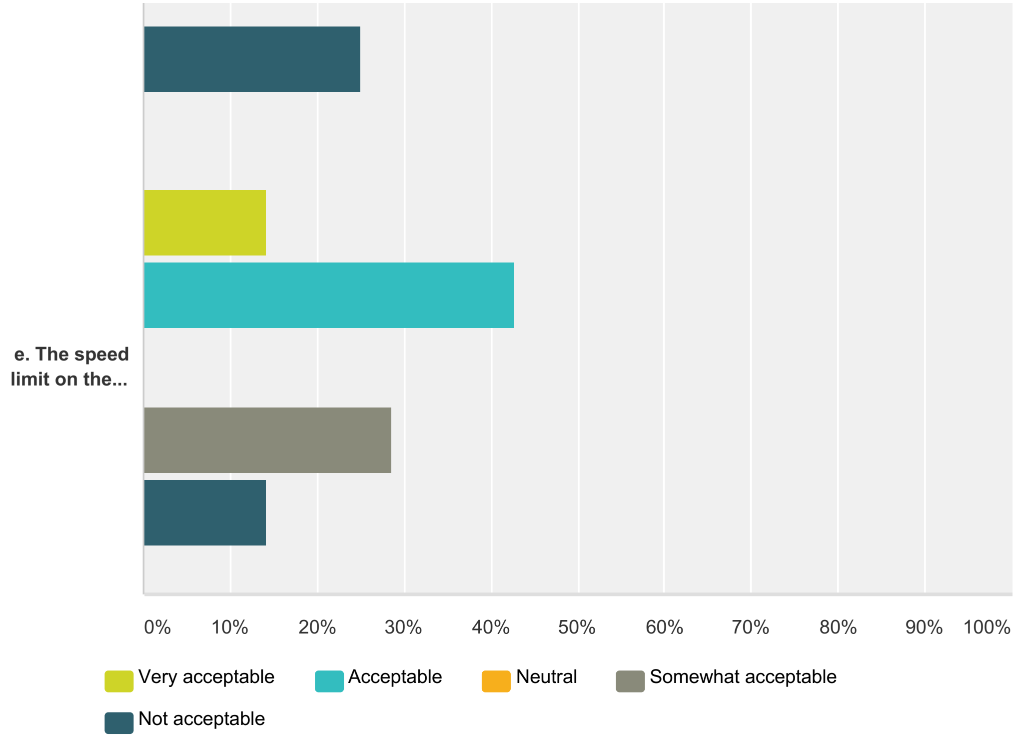
Answer Choices	Responses	
Blue Heron Point	**0.00%**	0
Hilton Head Harbor R.V. Resort	**100.00%**	9
Mariner's Cove	**0.00%**	0
Windmill Harbour	**0.00%**	0
Other	**0.00%**	0
Total		**9**

#	Other	Date
	There are no responses.	

Q2 How satisfied are you with the following conditions:

Answered: 9 Skipped: 0

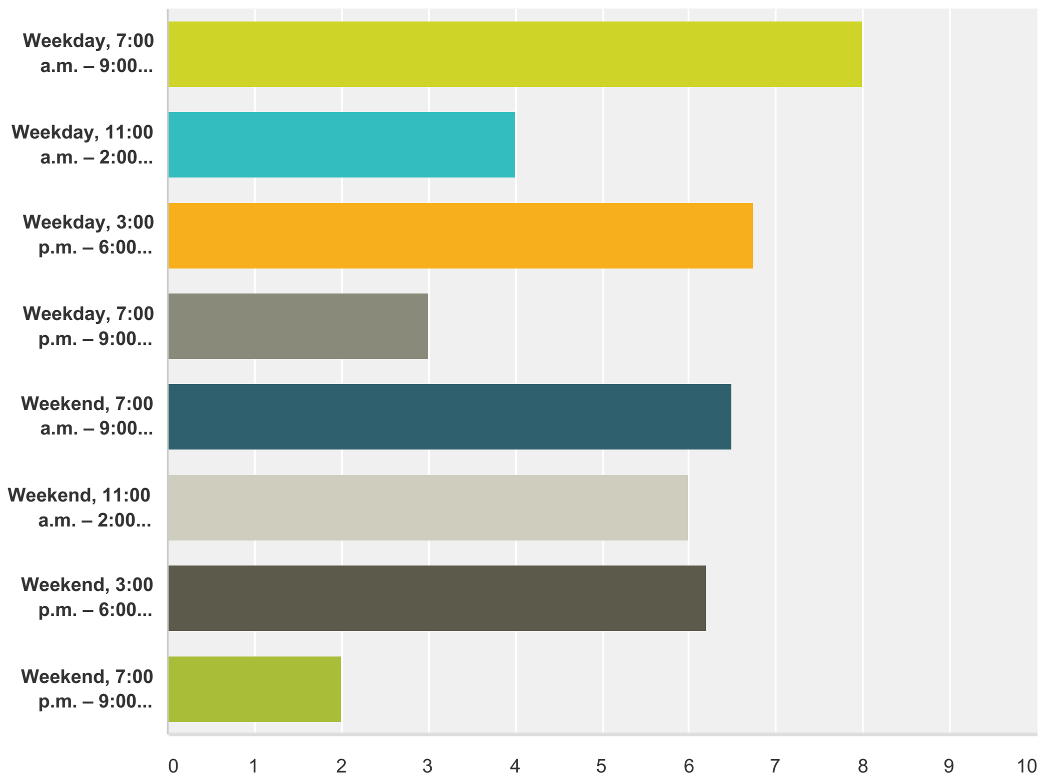




	Very acceptable	Acceptable	Neutral	Somewhat acceptable	Not acceptable	Total
a. Gap times in traffic flow (Gap times refer to the amount of time between cars traveling on US 278 for a vehicle to cross/turn into the flow of traffic safely)	**0.00%** 0	**37.50%** 3	**12.50%** 1	**12.50%** 1	**37.50%** 3	8
b. Visibility of oncoming traffic from left	**28.57%** 2	**42.86%** 3	**0.00%** 0	**14.29%** 1	**14.29%** 1	7
c. Visibility of oncoming traffic from right	**28.57%** 2	**57.14%** 4	**14.29%** 1	**0.00%** 0	**0.00%** 0	7
d. The speed of traffic on US 278	**12.50%** 1	**37.50%** 3	**25.00%** 2	**0.00%** 0	**25.00%** 2	8
e. The speed limit on the J. Wilton Graves Bridge over Mackay Creek	**14.29%** 1	**42.86%** 3	**0.00%** 0	**28.57%** 2	**14.29%** 1	7

Q3 What time of day do you experience the most problems when turning in and out your community? (Please rank your top 3 – “1” being the time of day you have the most difficulty)

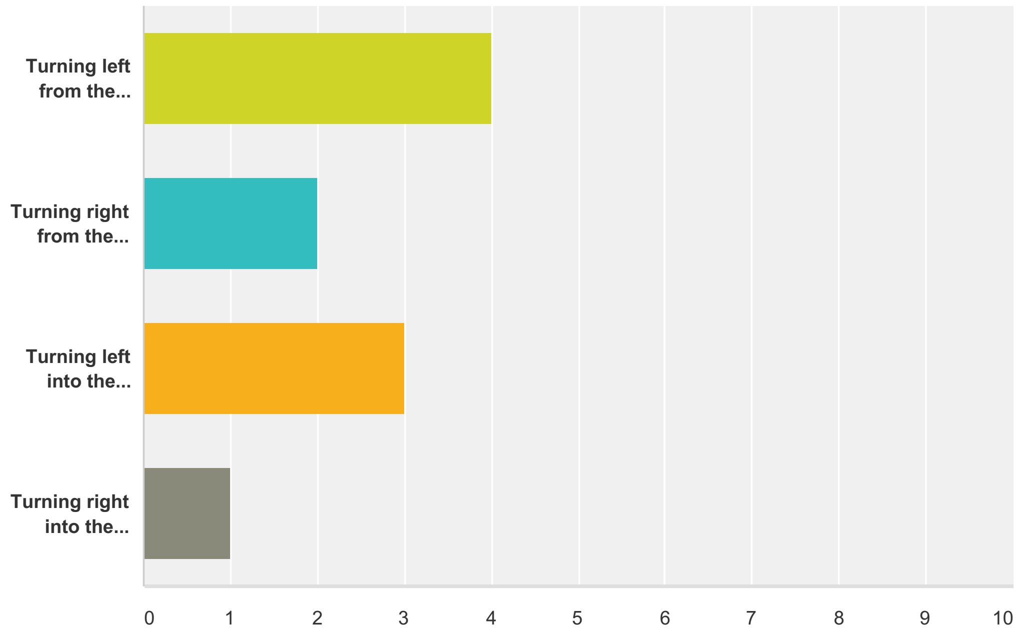
Answered: 5 Skipped: 4



	1	2	3	4	5	6	7	8	Total	Score
Weekday, 7:00 a.m. – 9:00 a.m.	**100.00%** 2	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	2	8.00
Weekday, 11:00 a.m. – 2:00 p.m.	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	1	4.00
Weekday, 3:00 p.m. – 6:00 p.m.	**25.00%** 1	**25.00%** 1	**50.00%** 2	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	4	6.75
Weekday, 7:00 p.m. – 9:00 p.m.	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 1	**0.00%** 0	**0.00%** 0	1	3.00
Weekend, 7:00 a.m. – 9:00 a.m.	**0.00%** 0	**50.00%** 1	**50.00%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	2	6.50
Weekend, 11:00 a.m. – 2:00 p.m.	**50.00%** 2	**25.00%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**25.00%** 1	4	6.00
Weekend, 3:00 p.m. – 6:00 p.m.	**0.00%** 0	**40.00%** 2	**40.00%** 2	**20.00%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	5	6.20
Weekend, 7:00 p.m. – 9:00 p.m.	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 1	**0.00%** 0	1	2.00

Q4 Which of the following movements on US 278 do you encounter the most difficulty? (Please rank your top 3 – “1” being the movement you have the most difficulty)

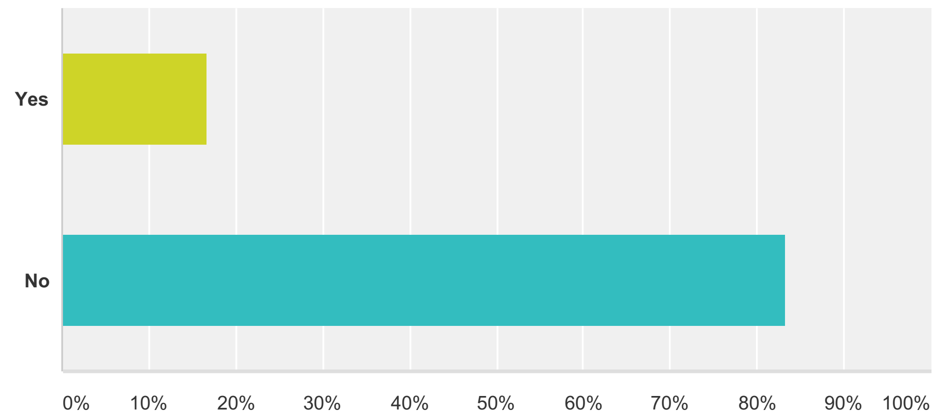
Answered: 5 Skipped: 4



	1	2	3	4	Total	Score
Turning left from the neighborhood	**100.00%** 5	**0.00%** 0	**0.00%** 0	**0.00%** 0	5	4.00
Turning right from the neighborhood	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	2.00
Turning left into the neighborhood	**0.00%** 0	**100.00%** 4	**0.00%** 0	**0.00%** 0	4	3.00
Turning right into the neighborhood	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 1	1	1.00

Q5 Are you in favor of closing median crossovers?

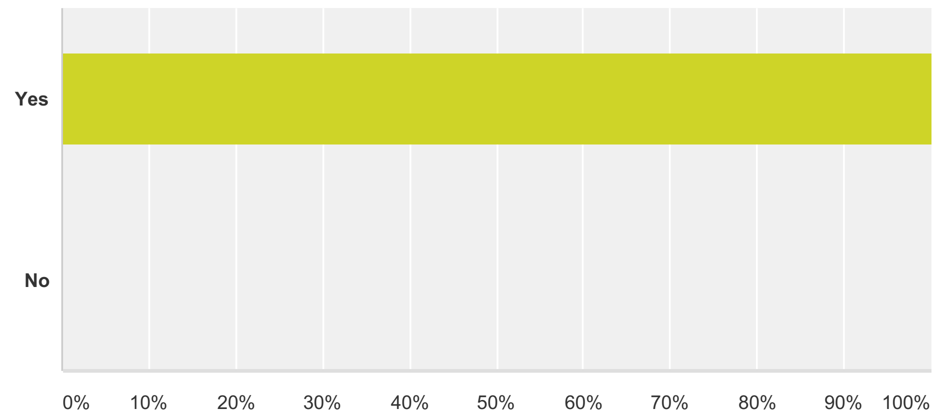
Answered: 6 Skipped: 3



Answer Choices	Responses	
Yes	**16.67%**	1
No	**83.33%**	5
Total		**6**

Q6 Would you like to have a dedicated pedestrian and bike pathway along US 278?

Answered: 6 Skipped: 3



Answer Choices	Responses	
Yes	**100.00%**	6
No	**0.00%**	0
Total		**6**

Q7 If you are a resident of Windmill Harbour – Do you support the Windmill Harbour Neighborhood Association providing property for use as an access easement?

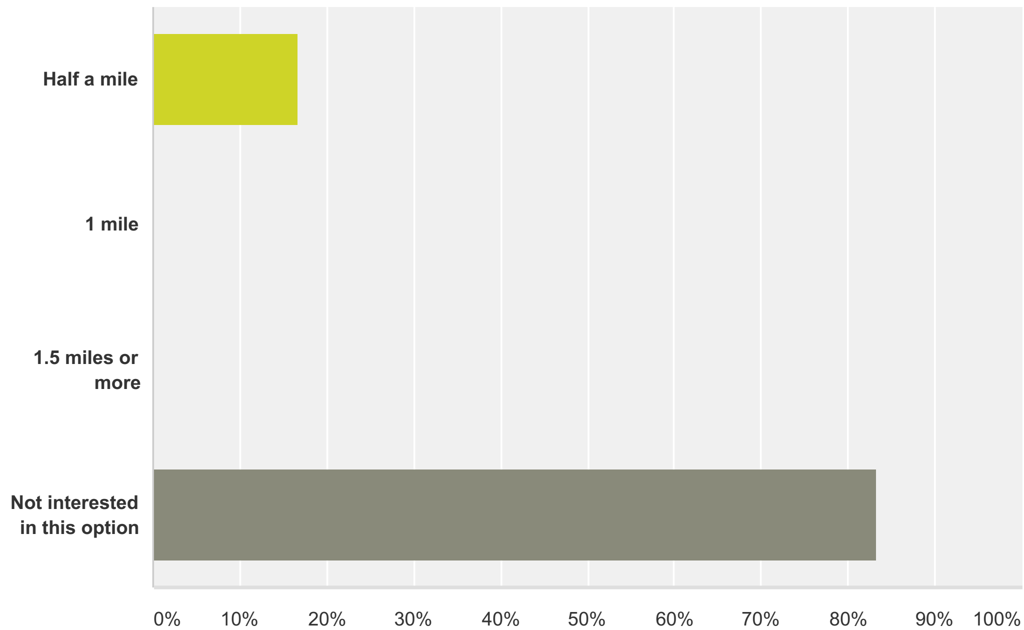
Answered: 0 Skipped: 9

! No matching responses.

Answer Choices	Responses	
Yes	0.00%	0
No	0.00%	0
Not interested in this option	0.00%	0
Total		**0**

Q8 How far are you willing to travel to make only right hand turns into or out of your community?

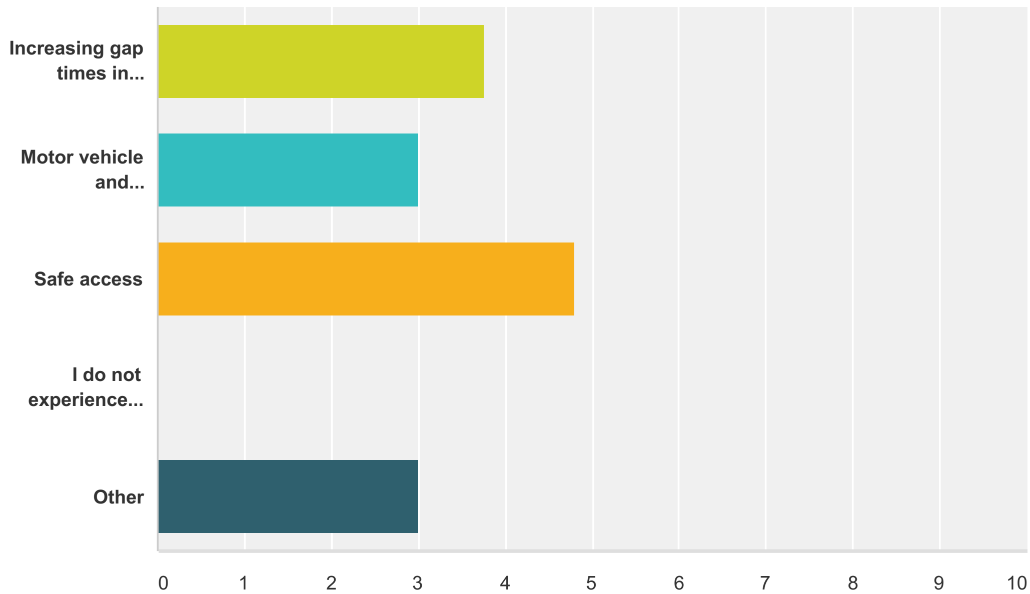
Answered: 6 Skipped: 3



Answer Choices	Responses	
Half a mile	**16.67%**	1
1 mile	**0.00%**	0
1.5 miles or more	**0.00%**	0
Not interested in this option	**83.33%**	5
Total		**6**

Q9 Which of the following traffic issues on Jenkins Island is most important to you? (Please rank your top 3 – "1" being the most important)

Answered: 5 Skipped: 4



	1	2	3	4	5	Total	Score
Increasing gap times in traffic on US 278 to accommodate turns through the crossovers and add provision for pedestrian and bike	**25.00%** 1	**50.00%** 2	**0.00%** 0	**25.00%** 1	**0.00%** 0	4	3.75
Motor vehicle and bike/pedestrian movement	**0.00%** 0	**0.00%** 0	**100.00%** 2	**0.00%** 0	**0.00%** 0	2	3.00
Safe access	**80.00%** 4	**20.00%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	5	4.80
I do not experience problems with traffic on Jenkins Island.	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	0	0.00
Other	**0.00%** 0	**0.00%** 0	**100.00%** 2	**0.00%** 0	**0.00%** 0	2	3.00

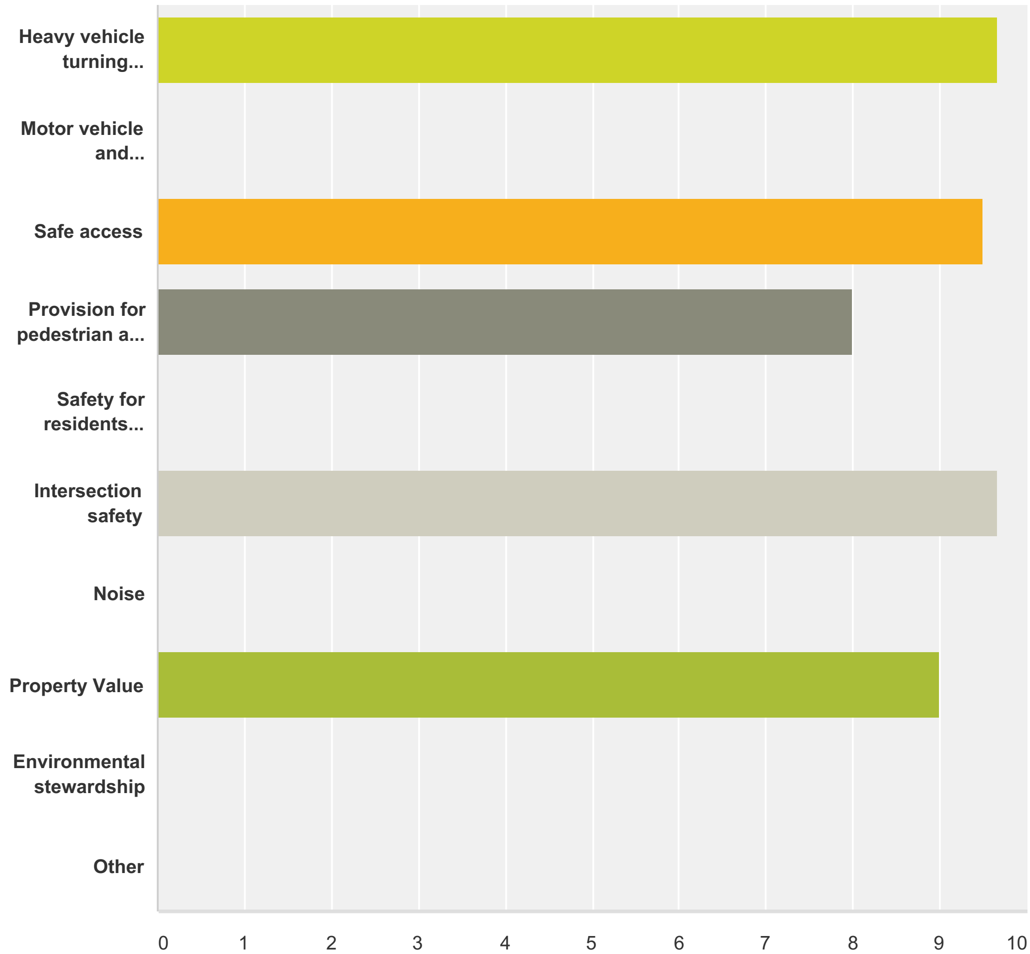
Q10 If you chose "other" above, please provide a description of the traffic issue.

Answered: 3 Skipped: 6

#	Responses	Date
1	RV towing trailers, boats, autos are longer and slower and need traffic to stop at a traffic light	8/12/2015 3:21 PM
2	RV vehicles require much longer gaps & space in median crossover	8/12/2015 2:30 PM
3	lack of acceleration and deceleration lanes	8/2/2015 8:46 AM

Q11 When evaluating a solution, which of the following issues are the most important to you? (Please rank your top 3 – "1" being the most important)

Answered: 5 Skipped: 4



	1	2	3	4	5	6	7	8	9	10	Total	Score
Heavy vehicle turning movements and accommodations	**66.67%** 2	**33.33%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	3	9.67
Motor vehicle and bike/pedestrian movement	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	0	0.00
Safe access	**50.00%** 1	**50.00%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	2	9.50
Provision for pedestrian and bike	**0.00%** 0	**0.00%** 0	**100.00%** 4	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	4	8.00
Safety for residents within your neighborhood	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	0	0.00
Intersection safety	**66.67%** 2	**33.33%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	3	9.67

Noise	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	0	0.00
Property Value	**0.00%** 0	**100.00%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	1	9.00
Environmental stewardship	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	0	0.00
Other	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	0	0.00

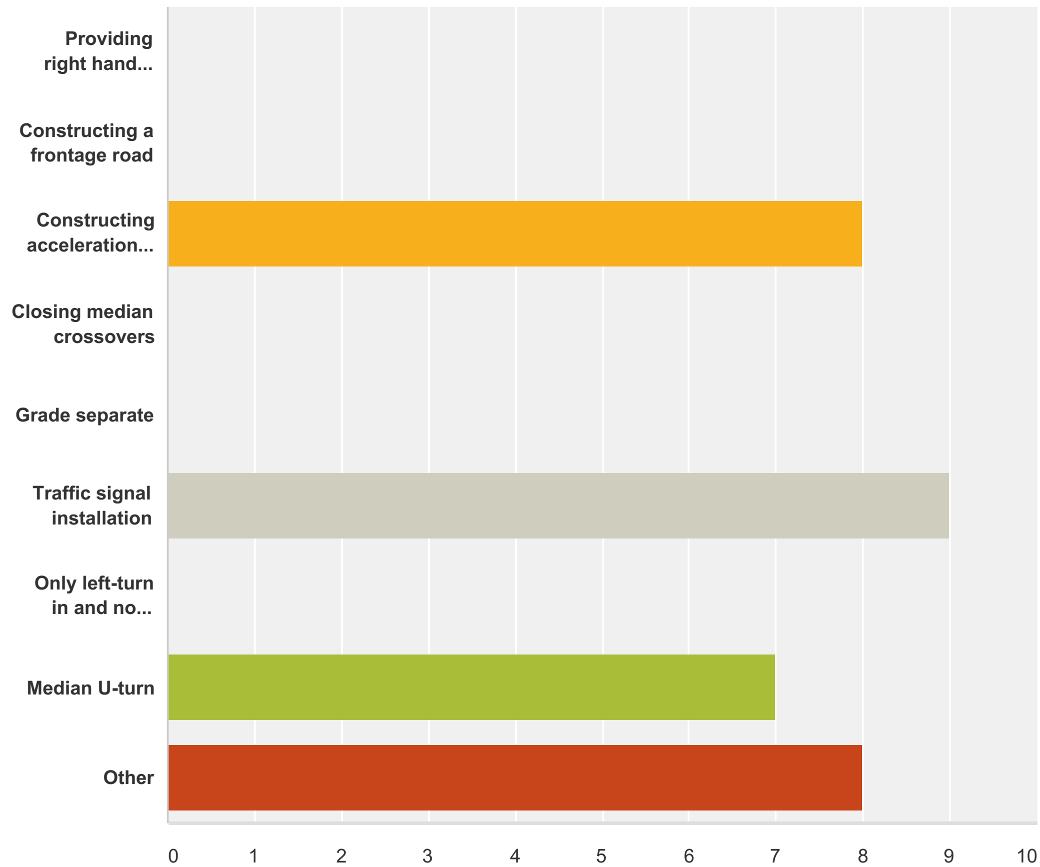
Q12 If you chose "other" above, please provide a description of the issue as it relates to the solution.

Answered: 0 Skipped: 9

#	Responses	Date
	There are no responses.	

Q13 Of the following solutions, which addresses your traffic concerns?(Please rank your top 3 – “1” being the solution that best addresses your traffic concerns)

Answered: 5 Skipped: 4



	1	2	3	4	5	6	7	8	9	Total	Score
Providing right hand turns for entrance and exit to/from communities	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	0	0.00
Constructing a frontage road	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	0	0.00
Constructing acceleration/deceleration lanes	**25.00%** 1	**50.00%** 2	**25.00%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	4	8.00
Closing median crossovers	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	0	0.00
Grade separate	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	0	0.00
Traffic signal installation	**100.00%** 3	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	3	9.00
Only left-turn in and no left-turn out from communities	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	0	0.00

Median U-turn	**0.00%** 0	**0.00%** 0	**100.00%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	1	7.00
Other	**33.33%** 1	**33.33%** 1	**33.33%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	3	8.00

Q14 If you chose "other" above, please provide a description of the suggested solution.

Answered: 3 Skipped: 6

#	Responses	Date
1	A traffic light that serves both Windmill and RV at Jenkins with new exit from Windmill.	8/12/2015 3:28 PM
2	New Windmill exit across from Jenkins Rd at a traffic light	8/12/2015 2:37 PM
3	Happy with access in either direction	8/6/2015 2:07 PM

Q15 Please provide any additional comments.

Answered: 4 Skipped: 5

#	Responses	Date
1	The speed in both directions on 278 is always above a safe entry or crossover by any vehicle especially RVs. We need a traffic light before someone is badly injured. Windmill would benefit from a traffic light at Jenkins Rd. Also.	8/12/2015 3:41 PM
2	We witness very close calls as Jenkins Rd vehicles make either left or right turns out and left into. Larger vehicles cannot move quickly from a stop. 278 speed is usually much faster than limits. Will it take fatalities to get a traffic light.	8/12/2015 2:46 PM
3	Big rigs towing a car or trailer will be a problem trying to access Blue Herin. Turn radiuses to accompdate 80 foot combined units is a must. How about bridge clearance? Solution: service road to existing entrance to proposed park. Put light there for Windmill and HHH.	8/6/2015 7:41 PM
4	If you do the Blue Heron exit for east bound access to HHRV you need a deceleration lane to accommodate a 55 foot rig coming off the bridge at the legal speed on the bridge	8/2/2015 8:52 AM

Q16 Please provide your contact information.

Answered: 5 Skipped: 4

Answer Choices	Responses	
Name	100.00%	5
Company	0.00%	0
Property Address	100.00%	5
Mailing Address (if different than above)	60.00%	3
City/Town	100.00%	5
State/Province	100.00%	5
ZIP/Postal Code	100.00%	5
Country	0.00%	0
Email Address	80.00%	4
Phone Number	0.00%	0

#	Name	Date
1	Philip Copenhaver	8/12/2015 3:41 PM
2	William Copenhaver	8/12/2015 2:46 PM
3	L. A. Lard,III	8/6/2015 7:41 PM
4	Richard Reilly	8/6/2015 2:25 PM
5	Robert Brown	8/2/2015 8:52 AM
#	**Company**	**Date**
	There are no responses.	
#	**Property Address**	**Date**
1	43 Jenkins Island Road, Unit 40, HHI SC 29926	8/12/2015 3:41 PM
2	43 Jenkins Island Rd. #45	8/12/2015 2:46 PM
3	# 59 HHH RV Resort	8/6/2015 7:41 PM
4	43 Jenkins Lot 76	8/6/2015 2:25 PM
5	43B Jenkins Rd, Lot 168	8/2/2015 8:52 AM
#	**Mailing Address (if different than above)**	**Date**
1	5 Compton Round	8/12/2015 3:41 PM
2	Box 1916	8/6/2015 7:41 PM
3	P.O. Bix 23375	8/2/2015 8:52 AM
#	**City/Town**	**Date**
1	Pooler	8/12/2015 3:41 PM
2	Hilton Head	8/12/2015 2:46 PM
3	Highlands	8/6/2015 7:41 PM
4	Hilton Heade Island	8/6/2015 2:25 PM

5	Hilton Head Island	8/2/2015 8:52 AM
#	**State/Province**	**Date**
1	GA	8/12/2015 3:41 PM
2	SC	8/12/2015 2:46 PM
3	NC	8/6/2015 7:41 PM
4	South Carolina	8/6/2015 2:25 PM
5	SC	8/2/2015 8:52 AM
#	**ZIP/Postal Code**	**Date**
1	31322	8/12/2015 3:41 PM
2	29926	8/12/2015 2:46 PM
3	29841	8/6/2015 7:41 PM
4	29926	8/6/2015 2:25 PM
5	29925	8/2/2015 8:52 AM
#	**Country**	**Date**
	There are no responses.	
#	**Email Address**	**Date**
1	wmcope2@yahoo.com	8/12/2015 2:46 PM
2	gjlard@msn.com	8/6/2015 7:41 PM
3	richr81525@gmail.com	8/6/2015 2:25 PM
4	rgbrown168@gmail.com	8/2/2015 8:52 AM
#	**Phone Number**	**Date**
	There are no responses.	

H2

Appendix H2 Windmill Harbour

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Jenkins Island Access Management Project

SIGN-IN SHEET
Public Information Meeting
August 10, 2015

CONTACT INFORMATION	
Name Michael Garrigan Community (*if applicable*) Windmill Harbour	Address 57 Sparwheel Lane City/Zip HHI, SC Phone 843-785-4538 Email garriganmle@yahoo.com
Name Kathryn + Keith Bogart Community (*if applicable*) Windmill Harbour	Address 149 Harbor Passage City/Zip Hilton Head, SC 29926 Phone 843 342 3008 Email X
Name Lynne Baunach Community (*if applicable*) Windmill Harbour	Address 29 Crosstree Drive City/Zip Hilton Head, SC 29926 Phone 843-342-6876 Email warren.baunach@hargray.com
Name W. Kingsbury Community (*if applicable*) W H	Address 71 Spindle Lane City/Zip 29926 Phone Email wkingsbury31@gmail.com

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CONTACT INFORMATION	
Name Cende + Bob Till Community *(if applicable)* W/H	Address 47 Crosstree Patio City/Zip 29926 Phone 715-2551 Email njacday@aol.com rbtill@aol.com
Name Sue Collins Community *(if applicable)* WH	Address 36 Millwright Dr. City/Zip HHI 29926 Phone 843-342-3123 Email scollins2@roadrunner.com
Name Cyndee & Hal Wood Community *(if applicable)* WH	Address 10 Sailwing Lane City/Zip 29926 Phone 342 3932 Email cyndee5wood@gmail.com
Name MAGGIE + LARRY BURKE Community *(if applicable)* WH	Address 55 CROSSTREE PATIO City/Zip 29926 Phone 206-696-2034 Email BURLMS@AOL.COM

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CONTACT INFORMATION	
Name Eileen Fitzgerald / Ed Farrent Community *(if applicable)* W.M.H	Address 51 Crabtree Drive City/Zip HHI, SC 29926 Phone 843-682-3787 Email fitzfor@yahoo.com forfitz@hotmail.com
Name Lucille & Jack Lee Community *(if applicable)* WMH	Address 2 Yacht Club Dr. City/Zip HHI, SC 29926 Phone 843-682-4207 Email JACK@BeaconAllied.com
Name SLATER Community *(if applicable)*	Address 21 MILLWRIGHT DRIVE City/Zip Phone 843-342-3532 Email
Name JACK & JUDY BERRY Community *(if applicable)* WINDMILL HARBOUR	Address 83 HARBOUR PASSAGE City/Zip HHI, S.C 29926 Phone 843 682-3516 Email JACKBERRY@ROADRUNNER.COM JUDITH BERRY@ROADRUNNER.COM

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August 10, 2015

CONTACT INFORMATION	
Name Philip & Sylvia Gaines Community (if applicable) Windmill Harbour	Address 7 Millwright Dr. City/Zip HHI 29926 Phone 715-9404 Email sylvia.gaines@oswego.edu
Name Mr Mrs. Donald C Bell (Alicia) & Don Community (if applicable)	Address 58 Crosstree Dr, City/Zip H H H. S.C. Phone 681-4618 Email Licha634@AOL.Com
Name Bill Peacher Community (if applicable) WH	Address 6 Sailwing Lane City/Zip Hilton Head Island, SC 29926 Phone 843-342-9902 Email bpeacher@roadrunner.com
Name Dick + Jean Citron Community (if applicable) off island	Address 62 Harrison Island Rd City/Zip Okatie SC 29909 Phone 843-757-9602 Email dick@citron.com

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CONTACT INFORMATION	
Name Bert DeFazio Community *(if applicable)* Chief of Security	Address Security City/Zip Phone Email
Name Murray + Jean Weiner Community *(if applicable)* Windmill Harbor	Address 46 Millwright Dr. City/Zip H. H. Is. 29926 Phone (843) 689-6140 Email msw814@aol.com
Name Cindy & Bob Polsen Community *(if applicable)* Windmill Harbor	Address 71 Sparwheel Lane City/Zip Hilton Head Island, SC 29926 Phone 732-447-3926 Email c_spudic@yahoo.com
Name Don & Lois Schuhrke Community *(if applicable)* Windmill Harbour	Address 53 Sparwheel Ln City/Zip HHI 29926 Phone 843-681-4062 Email schuhrke@hargray.com

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CONTACT INFORMATION	
Name Robert Woodrum Community *(if applicable)* W. H.	Address 117 Harbour Passage City/Zip HHI 29926 Phone 843-422-1153 Email RWOODRUM33@AOL.COM
Name JoAnn DeVira Community *(if applicable)* W. H.	Address 85 Harbour Passage City/Zip HHI 29926 Phone 843 689-2394 Email jdevira@aol.com
Name Grady + Kelly Montgomery Community *(if applicable)* W. H.	Address 19 Millwright Dr. City/Zip Hilton Head, SC 29926 Phone 843-384-5331 Email KellyKmont@aol.com
Name Julia + Bob Queen Community *(if applicable)* W H	Address 59 Harbour Passage City/Zip Phone 843-342-7671 Email Julia4455@hargray.com

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Name Nancy + Don Baldwin Community *(if applicable)* WH	Address 9 Sailwing City/Zip HH 29926 Phone 843-422-2329 Email baldwinhhi@gmail.com
Name SUE + GEORGE WEHRMAKER Community *(if applicable)* WH	Address 147 HARBOUR PASSAGE City/Zip HHI, SC 29926 Phone 843 842-6095 Email MOMiii@YAHOO.COM
Name RON + SUE ROBACKER Community *(if applicable)* WH	Address 10 Harbour Passage Patio + 8 Harbour Passage Patio City/Zip 29926 Phone 843-422-0995 Email RAROBACKER@ROADRUNNER.COM
Name MANUEL & GLORIA PERALTA Community *(if applicable)* WINDMILL HARBOUR	Address 134 HARBOUR PASSAGE City/Zip HILTON HEAD ISLAND, SC 29926 Phone (843) 689-2996 Email MANNYNGLORIA@AOL.COM

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CONTACT INFORMATION	
Name Jim O'Sullivan & Janet Porter Community *(if applicable)* WH	Address 108 Crosstree Dr N City/Zip 29926 Phone 671-2079 Email osullivanj55@gmail.com
Name John Case Community *(if applicable)* WH	Address 119 Harbour Passage City/Zip 29926 Phone 422-7524 Email JohnCase47@gmail.com
Name Liz Scott Community *(if applicable)* WH	Address 56 Sparwheel City/Zip 29926 Phone 422-7524 Email ScottElizabeth@gmail.com
Name Tom Crews & (Patty) Community *(if applicable)* WH	Address 5 Old Ferry Point City/Zip Hilton Head Is., SC 29926 Phone 843.842.3736 Email TZCREWS@AOL.COM

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CONTACT INFORMATION	
Name Henry + Lorraine Guglielmi Community *(if applicable)*	Address 88 W. Main St City/Zip Rockaway, NJ 07866 Phone 973-625-2161 Email mooseshell@aol.com
Name JAMES R. HESTON Community *(if applicable)*	Address 6 YACHT CLUB DR. City/Zip HHI Phone 843-706-7062 Email JIMHESTON1@gmail.com
Name Suzanne & Ted Kyzer Community *(if applicable)*	Address 12 Sailwing Lane City/Zip 29926 Phone 415-5774 Email Kyzerfam@hotmail.com
Name Barb Anderson & Doug Sopp Community *(if applicable)*	Address 10 Spanwheel Ln City/Zip 29926 Phone 715-8322 Email andersonbabs@hotmail.com

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CONTACT INFORMATION	
Name Ellen H. Taylor Community *(if applicable)* WH	Address One Indian Hill Lane City/Zip Hilton Head In., SC Phone 843. 842. 8917 Email ellenhtaylor@gmail.com
Name Bonnie Burke Community *(if applicable)* WH	Address 5 Crosstree Dr. City/Zip HH 29926 Phone 843 342-3567 Email bonnieb@hargray.com
Name THOMAS - MEG JACKSON Community *(if applicable)* WINDMILL HARBOUR	Address 2 MIDDLEWAY City/Zip HILTON HEAD IS. Phone 843-689 2444 Email JACKSONTM@HARGRAY.COM
Name WALTER/BARBARA KIRK Community *(if applicable)* WH	Address 24 OYSTER BAY PLACE City/Zip Hilton HEAD Is. SC 29926 Phone 843-342-3931 Email WALTERCKIRK@AOL.COM

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CONTACT INFORMATION	
Name Dennis C. Miller Community (if applicable) WMH	Address 50 Harbour Passage City/Zip HHI Phone 843-682-3914 Email dennisc.miller.hhi@gmail.com
Name Ann Merkel + Dan Merkel Community (if applicable) Windmill Harbour	Address 5 Indian Hill Lane City/Zip HHI 29926 Phone 843-342-9093 Email HHIANN@ROADRUNNER.com
Name David & Nancy Bachelder Community (if applicable) WH	Address 88 Crosstree Drive City/Zip 29926 Phone 689-3300 Email yardladyhhi@hotmail.com
Name Charles & Anne McNear Community (if applicable) WH	Address 76 CrossTree DR. City/Zip 29926 Phone 843-6814663 Email AnneMcNear@Roadrunner.com

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CONTACT INFORMATION	
Name Lucille Hill Community *(if applicable)* WH	Address 48 Spindle Lane City/Zip HHI SC 29926 Phone 917 805-2741 Email 46luci@gmail.com
Name Carol Simon Community *(if applicable)* WH	Address 11 Leeward Psg City/Zip HH 29926 Phone 843-384-9249 Email C.SIMON27@GMAIL.COM
Name Ellie & Dave Pierce Community *(if applicable)* WH & Palmetto Hall	Address 3 Summers Lane City/Zip 29926 HHI Phone 843-682-3557 Email piercede@aol.com
Name ROBIN & JACK FIRESTONE Community *(if applicable)* WH	Address 149 CROSSTREE DRIVE City/Zip HHI, SC 29926 Phone 843.715.0901 Email ROBINFIRESTONE@GMAIL.COM

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August 10, 2015

CONTACT INFORMATION	
Name Elizabeth DeFraine + Monty garner Community (if applicable) Windmill Harbour	Address 52 Mill wright Dr City/Zip Hilton Head Island 29926 Phone 843-342-9849 Email Ej DeFraine @ AOL.Com
Name Dave + Cindy Cappellari Community (if applicable) Reef Club	Address 8 Reef Club City/Zip HHI 29926 Phone 843-342-2878 Email dave-cappellari @ gmail.com
Name Laurie & Tom Burke Community (if applicable) Windmill Harbour	Address 79 Harbour Passage City/Zip HHI, SC 29926 Phone 210.764.7800 Email burke@burkecompany.net
Name Betsy Reed Community (if applicable) 72 Crosstree Dr.	Address City/Zip Phone Email

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CONTACT INFORMATION	
Name Bonnie Constantine Bob Constantine Community *(if applicable)*	Address 1 Leeward Passage City/Zip Hilton Head Island 29926 Phone 843-715-2804 Email bobc5858@gmail.com
Name Michael McLaughlin Community *(if applicable)* Windmill Harbour	Address 6 FANTAIL LN City/Zip Hilton Head Island SC 29926 Phone 843 715-3677 Email MIKEKARMAT@AOL.com.
Name Nancy Powers Community *(if applicable)* W H	Address 4 Millwright Dr City/Zip HHI 29926 Phone 843 338-0085 Email 1nancypowers@gmail.com
Name Scott Kuylen Community *(if applicable)* W H	Address 6 Leeward Psge. City/Zip Hilton Head, Phone 843-290-3996 Email ScottKuylen@Yahoo.com

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CONTACT INFORMATION	
Name Adam Greco Community (if applicable) WH.	Address 6 REEF CLUB City/Zip 29926 Phone 843 422 4406 Email agreno@totaldesignhhi.com
Name Barbara Garrigan Community (if applicable) WH	Address 57 Sparwheel Lane City/Zip 29926 Phone 785-4538 Email barbaragarrigan@yahoo.com
Name John AKERS Community (if applicable) WH	Address 80 CROSSTREE DR City/Zip 29926 Phone 843 686-3530 Email THEAKERS@AOL.COM
Name J.R. NORTON Community (if applicable) WH	Address 120 CROSSTREE DRIVE City/Zip 29926 Phone 717 576 5058 Email JRNDPM48@GMAIL.COM

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CONTACT INFORMATION	
Name Frances Marie Hartis Community *(if applicable)*	Address 94 Crosstree Dr N City/Zip HHI 29926 Phone 681-9717 Email marie.hartis@hargray.com
Name George & Kathy Doig. Community *(if applicable)*	Address 38 Harbour Passage. City/Zip HHI. 29926 Phone 843-342-8834 Email doigs@earthlink.net
Name KAREN & RICHARD HUTCHINSON Community *(if applicable)*	Address 63 SPARWHEEL LN City/Zip HHI 29926 Phone 843-342-6656 Email RKHUTCHINSON@ROADRUNNER.COM
Name Sally Diderikse Community *(if applicable)*	Address 61 Spindle Lane City/Zip HHI S.C. 29926 Phone 843 682 2760 Email sally diderikseen@yahoo.com

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Jenkins Island Access Management Project

SIGN-IN SHEET
Public Information Meeting
August 10, 2015

CONTACT INFORMATION	
Name Sara Penn Daniel Community *(if applicable)*	Address 13 Crosstree Drive City/Zip HHI, SC 29926 Phone 843-715-2321 Email spdan4@gmail.com
Name Tom Rudasics Community *(if applicable)*	Address 37 Crosstree City/Zip 29926 Phone 574 210 7789 Email tomrud50@gmail
Name Dorothy Linville Community *(if applicable)*	Address 10 Leeward City/Zip 29926 Phone 683-9470 Email dorlinville@msn.com
Name [illegible] Community *(if applicable)*	Address 2 Harbour ~~Passage~~ Patio City/Zip 29926 Phone 843-384-4775 Email NICK@RSCHREIBER.COM

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Jenkins Island Access Management Project

SIGN-IN SHEET
Public Information Meeting
August 10, 2015

CONTACT INFORMATION	
Name AL GRAHAM / ANN EDEN Community *(if applicable)*	Address 45 Sparwheel Ln City/Zip Hilton Head Isl. SC 29926 Phone (843) 342-5755 Email
Name MARK COOKE Community *(if applicable)*	Address 6 LEEWARD RSE City/Zip ~~HHI~~, SC. 29926 Phone 843 271-5235 Email markecooke@yahoo.com
Name Pierre COMBEMALE Community *(if applicable)*	Address 23 Millwright drive City/Zip Hilton Head Sc 29926 Phone 724 472 1385 Email PIERRECOMBEMALE@GMAIL.com
Name Rick Tyson Community *(if applicable)*	Address 51 Sparwheel Lane City/Zip Hilton Head 29926 Phone 803-600-1883 Email rtyson@etslogistics.com

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Jenkins Island Access Management Project

SIGN-IN SHEET
Public Information Meeting
August 10, 2015

CONTACT INFORMATION	
Name Dena Donovan + Steve Donovan Community *(if applicable)* Windmill Harbour	Address 53 Harbour Passage East City/Zip HHI Phone 770-365-0803 Email Donovan168@hotmail.com
Name Les Lively Community *(if applicable)* WH	Address 45 Crosstree Dr City/Zip HHI 29926 Phone 843-321-8481 Email les.lively@yahoo.com
Name Pluma Bridgers & William Bridgers Community *(if applicable)* WH	Address 99 Harbour Passage City/Zip Hilton Head Island 29926 Phone 843.689.2424 Email wbridgers@aol.com
Name Peter Bergeron Community *(if applicable)* WH	Address 20 Spindle LN City/Zip Hilton Head 29926 Phone 843 715 2954 Email pbergeron52@gmail.com

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Jenkins Island Access Management Project

SIGN-IN SHEET
Public Information Meeting
August 10, 2015

CONTACT INFORMATION	
Name Stephen & Jamie Smith Community *(if applicable)* Windmill Harbour	Address 61 Harbour Psge E City/Zip 29926 Phone 317-372-5943 Email jbsdsmith@aol.com
Name Jose Llores Community *(if applicable)* WH	Address 52 Spindle Lane City/Zip HHI Phone 715-2170 Email Jose.llorens1 @gmail.com
Name Roy Cusanta Community *(if applicable)* WH	Address Slip F-7 City/Zip HHI Phone 368-7784 Email RRCG Hargray.com
Name Mary & Billy Cordray Community *(if applicable)* WH	Address 21 Spindle Lane City/Zip HHI, 29926 Phone 843 681-9838 Email MaryMaedray@aol.com

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Jenkins Island Access Management Project

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Public Information Meeting
August 10, 2015

CONTACT INFORMATION	
Name Paul Durfee Community *(if applicable)* WH	Address 27 Spindle Lane. City/Zip HHI, SC. 29926 Phone 508 272 6480 Email beachtimealways@mac.com
Name KATHY FOTIA Community *(if applicable)* WH	Address 31 SPARWHEEL LANE City/Zip HILTON HEAD SC 29926 Phone 843-247-1976 Email KATHY@COLLINSGROUPREALTY.com
Name A. J. WALTER Community *(if applicable)* WH	Address 87 HARBOUR PASSAGE City/Zip Hilton Head ISLAND, S.C. 29926 Phone 843. 342 3456 Email WALTERSHHI@AOL.COM
Name JACK [illegible] Community *(if applicable)* WH	Address 47 Harbour Passage E. City/Zip HHI - SC 29926 Phone 843-681-8992 Email

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Jenkins Island Access Management Project

SIGN-IN SHEET
Public Information Meeting
August 10, 2015

CONTACT INFORMATION	
Name Oran B. Bruns Community (if applicable) WH	Address 37 Millwright St. City/Zip HHI, SC 29926 Phone 843-681-8392 Email
Name Paul Baird - Patrick & Patricia Community (if applicable) Windmill Harbor	Address 50 Spindle Ln City/Zip HHI, SC Phone 843-715-2320 Email
Name Sally Warren Community (if applicable) Windmill Harbour	Address 69 Sparwheel City/Zip Hilton Head, SC 29926 Phone 843 681-3080 Email SHIPYARD 02 @ Aol.com
Name Sally Nielsen Community (if applicable) Windmill Harbour	Address 151 Crosstree Dr. City/Zip Hilton Head, SC 29926 Phone 843-290-5099 843-342-4400 Email snielsen@kilpatricktownsend.com

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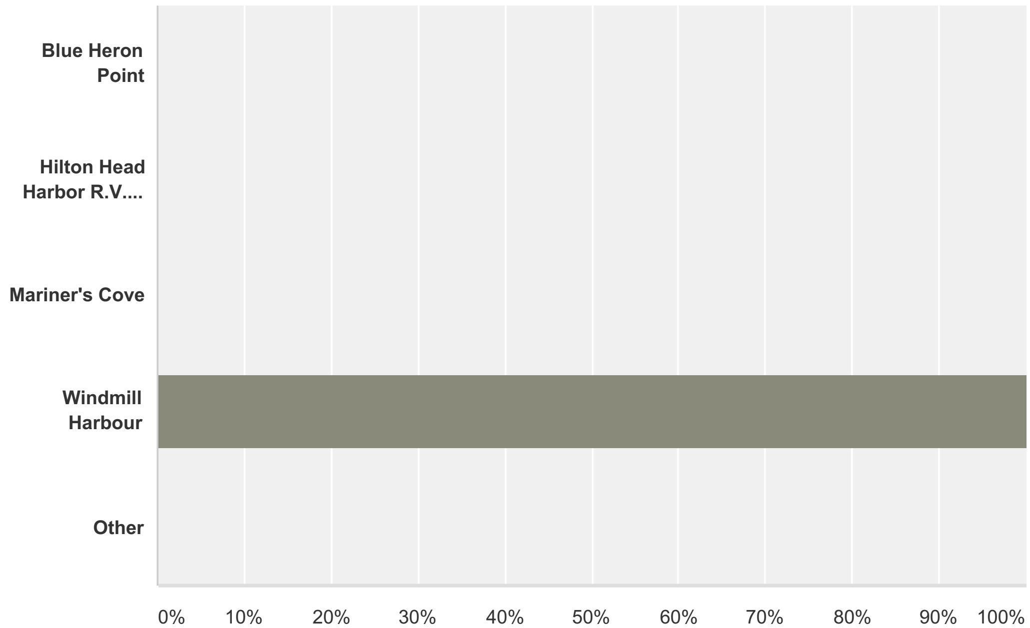
Q1 Please select the community where you currently reside.

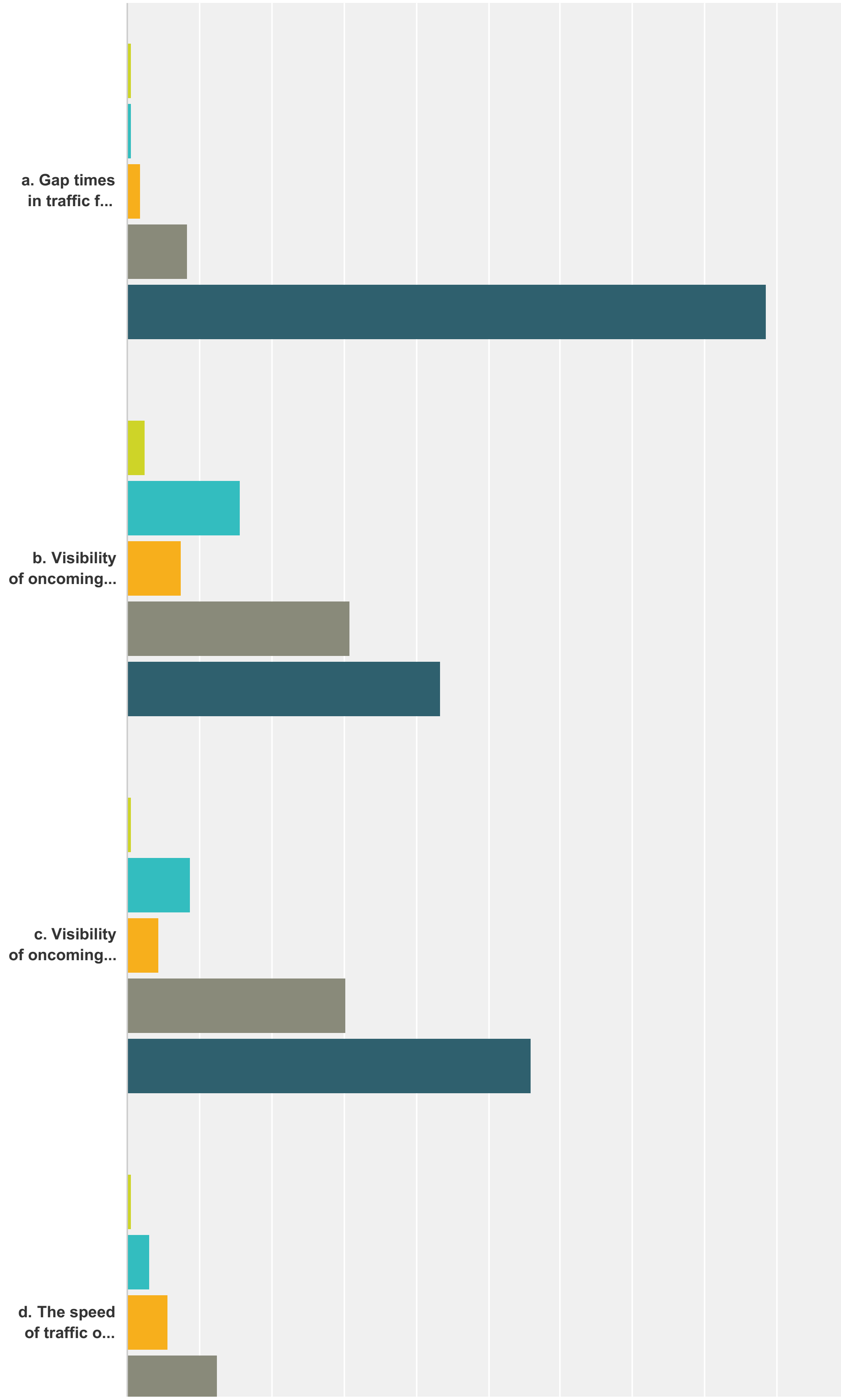
Answered: 166 Skipped: 0

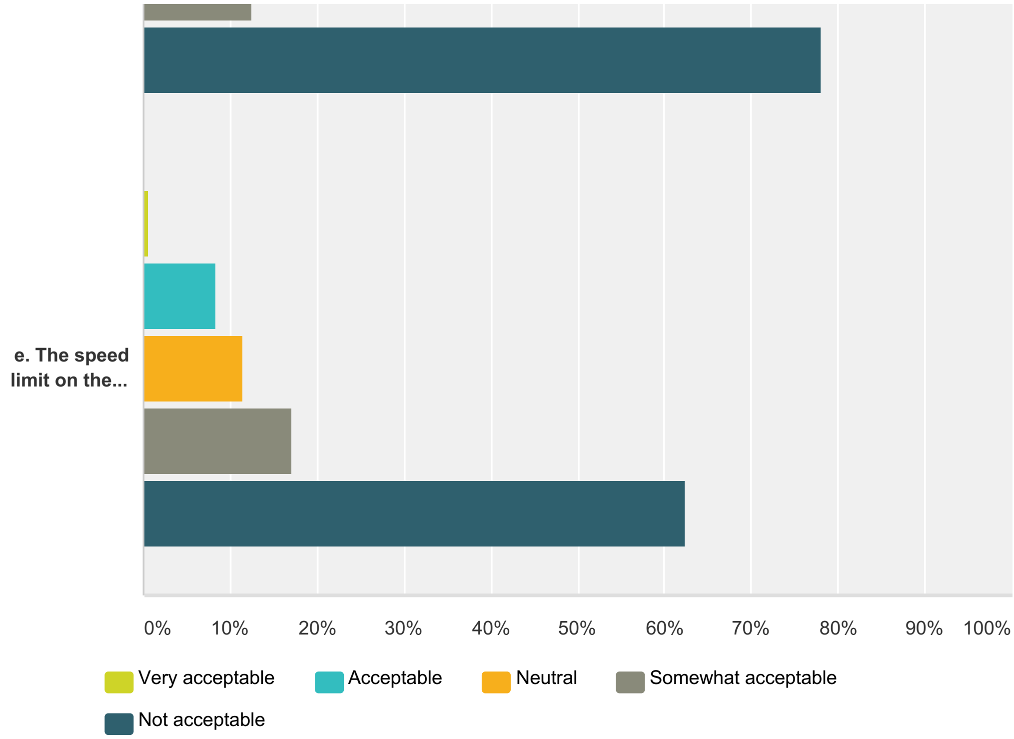


Answer Choices	Responses	
Blue Heron Point	**0.00%**	0
Hilton Head Harbor R.V. Resort	**0.00%**	0
Mariner's Cove	**0.00%**	0
Windmill Harbour	**100.00%**	166
Other	**0.00%**	0
Total		**166**

Q2 How satisfied are you with the following conditions:

Answered: 160 Skipped: 6

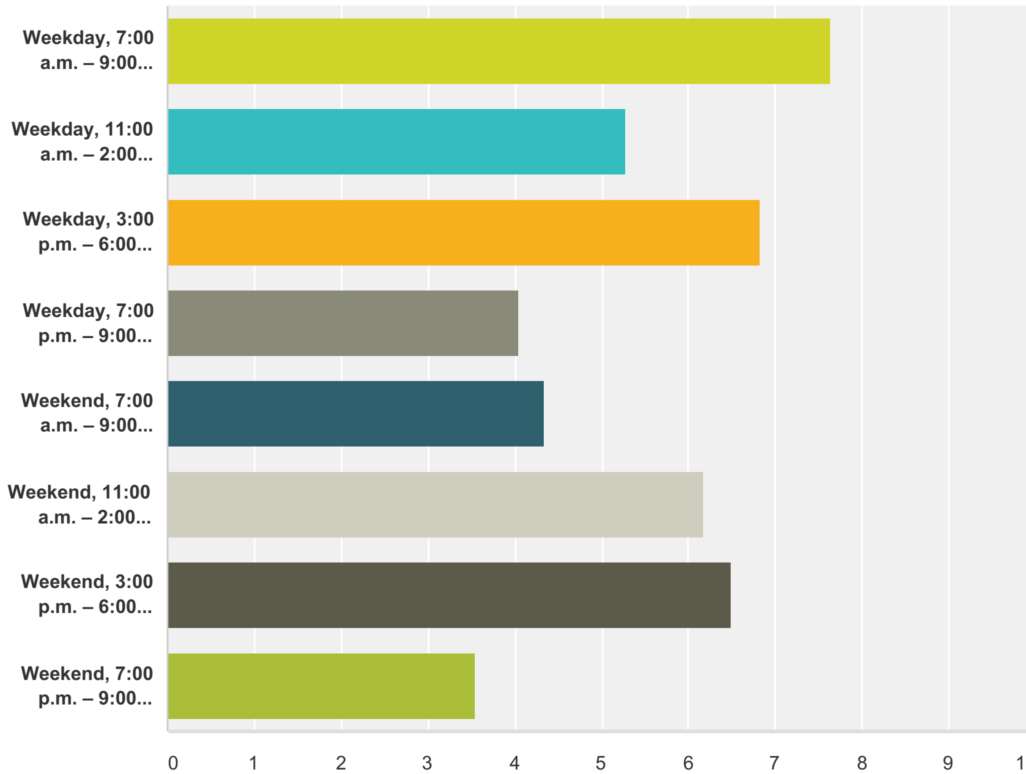




	Very acceptable	Acceptable	Neutral	Somewhat acceptable	Not acceptable	Total
a. Gap times in traffic flow (Gap times refer to the amount of time between cars traveling on US 278 for a vehicle to cross/turn into the flow of traffic safely)	**0.64%** 1	**0.64%** 1	**1.92%** 3	**8.33%** 13	**88.46%** 138	156
b. Visibility of oncoming traffic from left	**2.52%** 4	**15.72%** 25	**7.55%** 12	**30.82%** 49	**43.40%** 69	159
c. Visibility of oncoming traffic from right	**0.63%** 1	**8.81%** 14	**4.40%** 7	**30.19%** 48	**55.97%** 89	159
d. The speed of traffic on US 278	**0.63%** 1	**3.13%** 5	**5.63%** 9	**12.50%** 20	**78.13%** 125	160
e. The speed limit on the J. Wilton Graves Bridge over Mackay Creek	**0.64%** 1	**8.28%** 13	**11.46%** 18	**17.20%** 27	**62.42%** 98	157

Q3 What time of day do you experience the most problems when turning in and out your community? (Please rank your top 3 – "1" being the time of day you have the most difficulty)

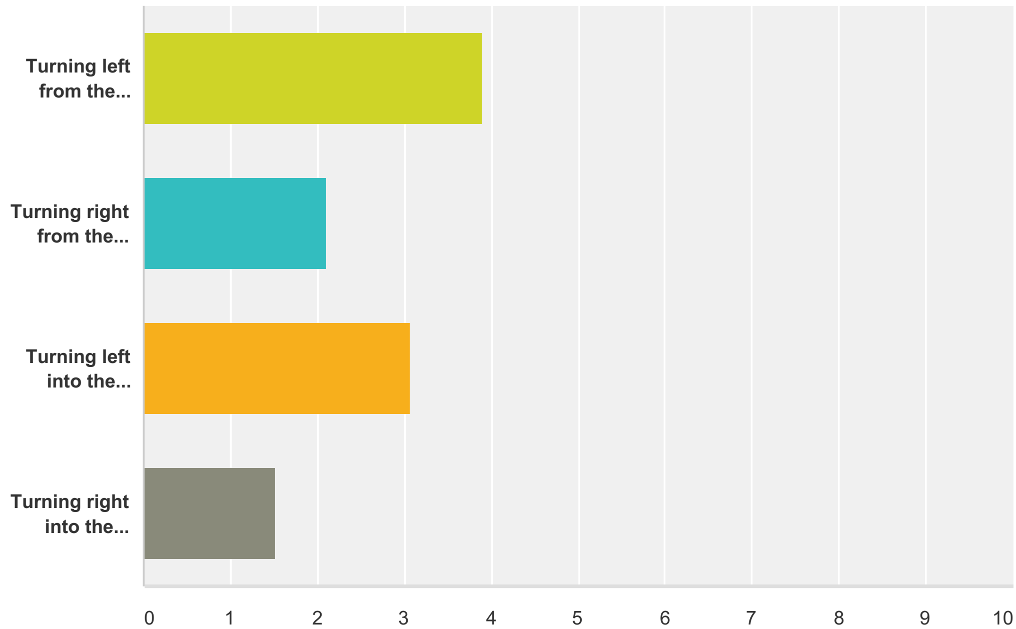
Answered: 154 Skipped: 12



	1	2	3	4	5	6	7	8	Total	Score
Weekday, 7:00 a.m. – 9:00 a.m.	75.97% 98	16.28% 21	6.20% 8	0.78% 1	0.00% 0	0.00% 0	0.00% 0	0.78% 1	129	7.64
Weekday, 11:00 a.m. – 2:00 p.m.	12.50% 3	8.33% 2	37.50% 9	16.67% 4	8.33% 2	4.17% 1	4.17% 1	8.33% 2	24	5.29
Weekday, 3:00 p.m. – 6:00 p.m.	14.41% 17	62.71% 74	18.64% 22	1.69% 2	1.69% 2	0.00% 0	0.85% 1	0.00% 0	118	6.83
Weekday, 7:00 p.m. – 9:00 p.m.	5.00% 1	0.00% 0	15.00% 3	25.00% 5	20.00% 4	10.00% 2	15.00% 3	10.00% 2	20	4.05
Weekend, 7:00 a.m. – 9:00 a.m.	3.45% 1	6.90% 2	27.59% 8	6.90% 2	24.14% 7	10.34% 3	10.34% 3	10.34% 3	29	4.34
Weekend, 11:00 a.m. – 2:00 p.m.	11.11% 9	24.69% 20	54.32% 44	1.23% 1	0.00% 0	6.17% 5	2.47% 2	0.00% 0	81	6.17
Weekend, 3:00 p.m. – 6:00 p.m.	22.47% 20	28.09% 25	41.57% 37	1.12% 1	1.12% 1	2.25% 2	3.37% 3	0.00% 0	89	6.49
Weekend, 7:00 p.m. – 9:00 p.m.	4.17% 1	4.17% 1	29.17% 7	8.33% 2	0.00% 0	8.33% 2	4.17% 1	41.67% 10	24	3.54

Q4 Which of the following movements on US 278 do you encounter the most difficulty? (Please rank your top 3 – "1" being the movement you have the most difficulty)

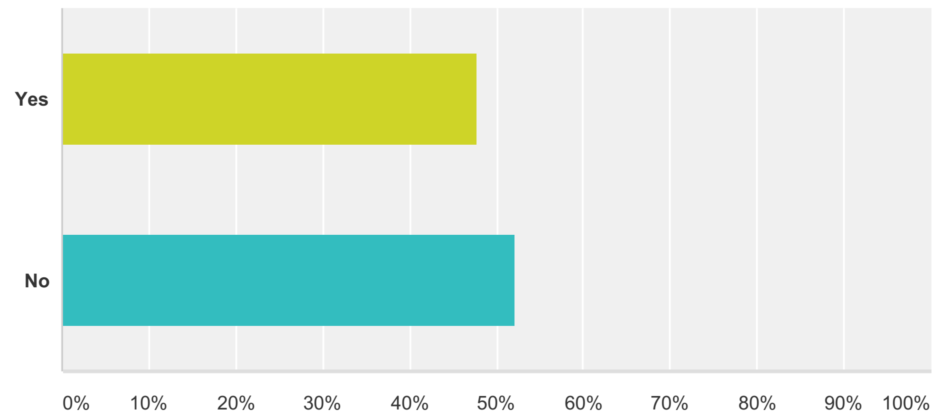
Answered: 153 Skipped: 13



	1	2	3	4	Total	Score
Turning left from the neighborhood	**90.85%** 129	**8.45%** 12	**0.70%** 1	**0.00%** 0	142	3.90
Turning right from the neighborhood	**0.76%** 1	**12.21%** 16	**83.97%** 110	**3.05%** 4	131	2.11
Turning left into the neighborhood	**14.67%** 22	**77.33%** 116	**8.00%** 12	**0.00%** 0	150	3.07
Turning right into the neighborhood	**5.26%** 1	**0.00%** 0	**36.84%** 7	**57.89%** 11	19	1.53

Q5 Are you in favor of closing median crossovers?

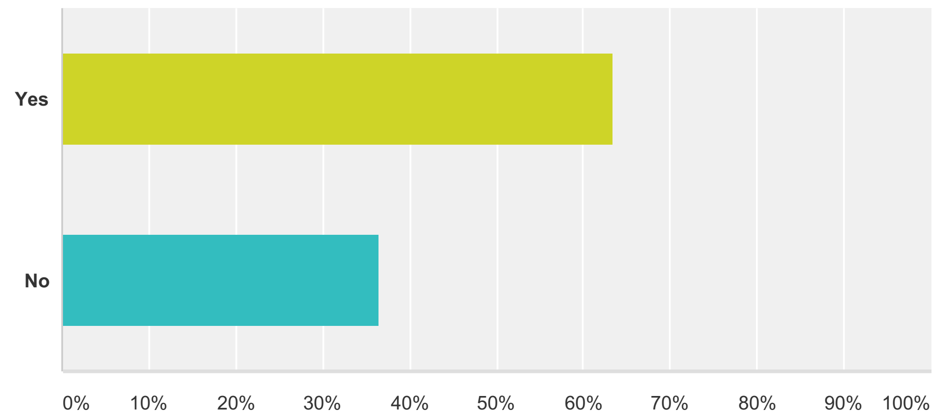
Answered: 138 Skipped: 28



Answer Choices	Responses	
Yes	**47.83%**	66
No	**52.17%**	72
Total		**138**

Q6 Would you like to have a dedicated pedestrian and bike pathway along US 278?

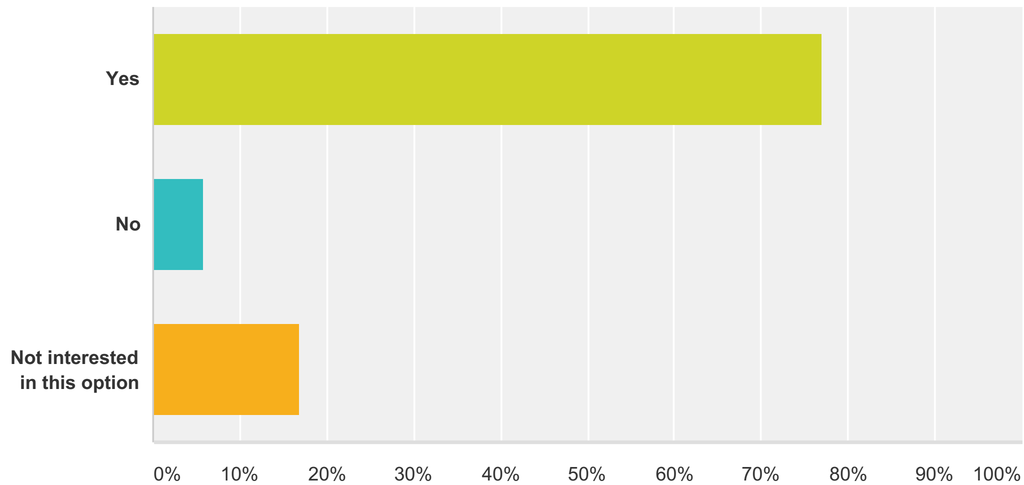
Answered: 148 Skipped: 18



Answer Choices	Responses	
Yes	**63.51%**	94
No	**36.49%**	54
Total		**148**

Q7 If you are a resident of Windmill Harbour – Do you support the Windmill Harbour Neighborhood Association providing property for use as an access easement?

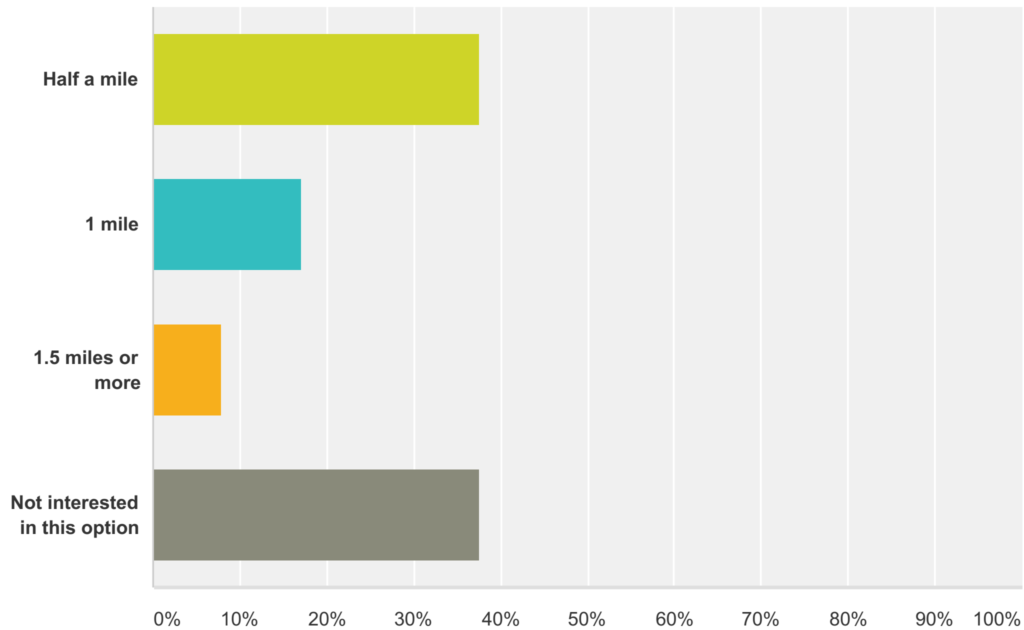
Answered: 153 Skipped: 13



Answer Choices	Responses	
Yes	**77.12%**	118
No	**5.88%**	9
Not interested in this option	**16.99%**	26
Total		**153**

Q8 How far are you willing to travel to make only right hand turns into or out of your community?

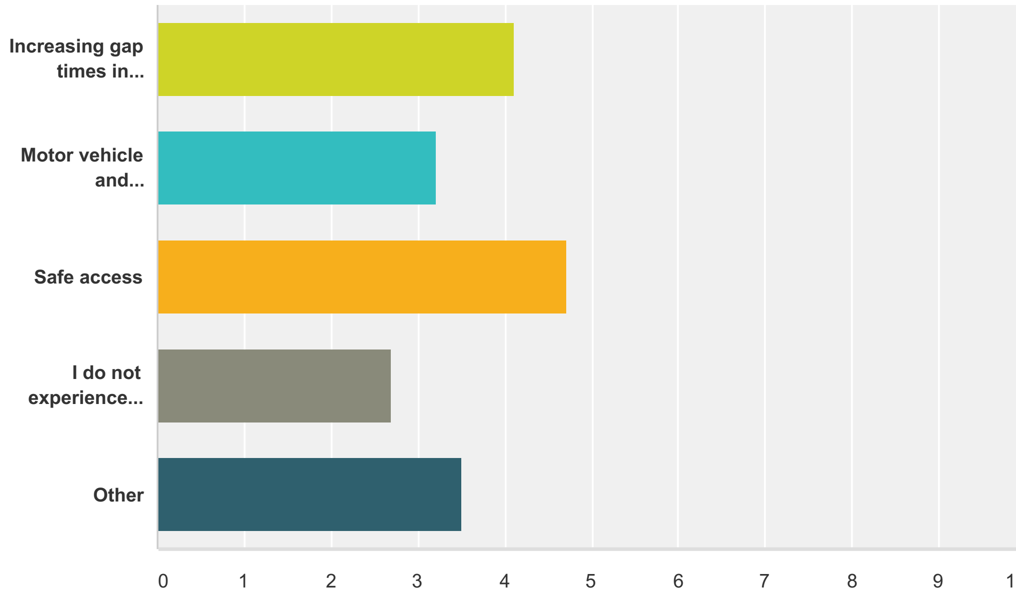
Answered: 152 Skipped: 14



Answer Choices	Responses	
Half a mile	**37.50%**	57
1 mile	**17.11%**	26
1.5 miles or more	**7.89%**	12
Not interested in this option	**37.50%**	57
Total		**152**

Q9 Which of the following traffic issues on Jenkins Island is most important to you? (Please rank your top 3 – "1" being the most important)

Answered: 151 Skipped: 15



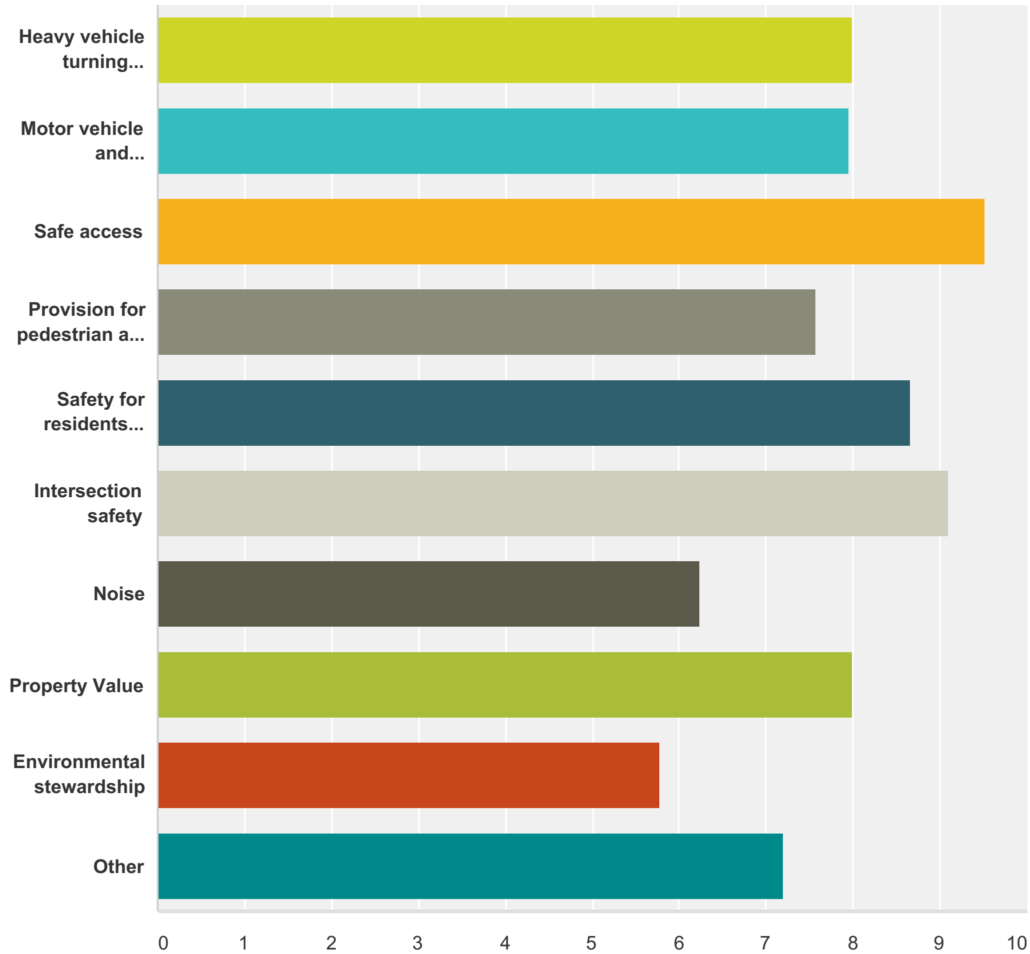
	1	2	3	4	5	Total	Score
Increasing gap times in traffic on US 278 to accommodate turns through the crossovers and add provision for pedestrian and bike	**27.05%** 33	**57.38%** 70	**14.75%** 18	**0.82%** 1	**0.00%** 0	122	4.11
Motor vehicle and bike/pedestrian movement	**0.00%** 0	**25.27%** 23	**72.53%** 66	**1.10%** 1	**1.10%** 1	91	3.22
Safe access	**75.52%** 108	**19.58%** 28	**4.90%** 7	**0.00%** 0	**0.00%** 0	143	4.71
I do not experience problems with traffic on Jenkins Island.	**30.00%** 3	**0.00%** 0	**0.00%** 0	**50.00%** 5	**20.00%** 2	10	2.70
Other	**19.44%** 7	**22.22%** 8	**52.78%** 19	**0.00%** 0	**5.56%** 2	36	3.50

Q10 If you chose "other" above, please provide a description of the traffic issue.

Answered: 40 Skipped: 126

Q11 When evaluating a solution, which of the following issues are the most important to you? (Please rank your top 3 – “1” being the most important)

Answered: 149 Skipped: 17



	1	2	3	4	5	6	7	8	9	10	Total	Score
Heavy vehicle turning movements and accommodations	8.33% 2	41.67% 10	33.33% 8	0.00% 0	4.17% 1	8.33% 2	0.00% 0	0.00% 0	4.17% 1	0.00% 0	24	8.00
Motor vehicle and bike/pedestrian movement	6.82% 3	22.73% 10	56.82% 25	2.27% 1	2.27% 1	4.55% 2	2.27% 1	2.27% 1	0.00% 0	0.00% 0	44	7.95
Safe access	64.34% 83	24.03% 31	10.85% 14	0.78% 1	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	129	9.52
Provision for pedestrian and bike	7.14% 1	7.14% 1	57.14% 8	7.14% 1	14.29% 2	0.00% 0	7.14% 1	0.00% 0	0.00% 0	0.00% 0	14	7.57
Safety for residents within your neighborhood	15.79% 12	47.37% 36	32.89% 25	1.32% 1	0.00% 0	1.32% 1	0.00% 0	0.00% 0	1.32% 1	0.00% 0	76	8.66
Intersection safety	36.52% 42	40.00% 46	22.61% 26	0.00% 0	0.87% 1	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	115	9.11

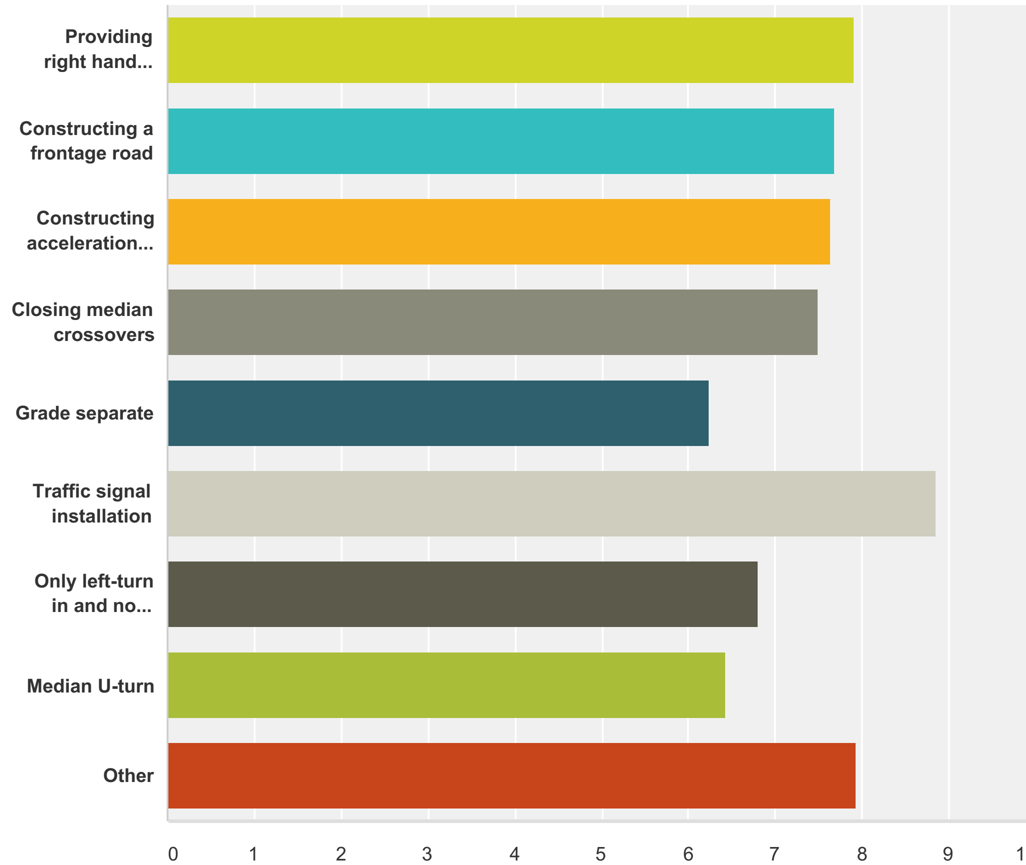
Noise	**0.00%** 0	**37.50%** 3	**12.50%** 1	**12.50%** 1	**0.00%** 0	**0.00%** 0	**12.50%** 1	**12.50%** 1	**0.00%** 0	**12.50%** 1	8	6.25
Property Value	**7.69%** 3	**15.38%** 6	**61.54%** 24	**10.26%** 4	**2.56%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**2.56%** 1	**0.00%** 0	39	8.00
Environmental stewardship	**0.00%** 0	**0.00%** 0	**44.44%** 4	**11.11%** 1	**0.00%** 0	**0.00%** 0	**22.22%** 2	**11.11%** 1	**11.11%** 1	**0.00%** 0	9	5.78
Other	**40.00%** 2	**0.00%** 0	**20.00%** 1	**20.00%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**20.00%** 1	5	7.20

Q12 If you chose "other" above, please provide a description of the issue as it relates to the solution.

Answered: 7 Skipped: 159

Q13 Of the following solutions, which addresses your traffic concerns?(Please rank your top 3 – “1” being the solution that best addresses your traffic concerns)

Answered: 148 Skipped: 18



	1	2	3	4	5	6	7	8	9	Total	Score
Providing right hand turns for entrance and exit to/from communities	**21.43%** 15	**50.00%** 35	**27.14%** 19	**1.43%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	70	7.91
Constructing a frontage road	**18.97%** 11	**37.93%** 22	**39.66%** 23	**0.00%** 0	**3.45%** 2	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	58	7.69
Constructing acceleration/deceleration lanes	**10.00%** 6	**45.00%** 27	**45.00%** 27	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	60	7.65
Closing median crossovers	**2.86%** 1	**57.14%** 20	**37.14%** 13	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**2.86%** 1	**0.00%** 0	35	7.49
Grade separate	**25.00%** 1	**0.00%** 0	**25.00%** 1	**25.00%** 1	**0.00%** 0	**0.00%** 0	**25.00%** 1	**0.00%** 0	**0.00%** 0	4	6.25
Traffic signal installation	**90.83%** 109	**4.17%** 5	**5.00%** 6	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	120	8.86
Only left-turn in and no left-turn out from communities	**6.67%** 1	**26.67%** 4	**53.33%** 8	**0.00%** 0	**0.00%** 0	**0.00%** 0	**6.67%** 1	**6.67%** 1	**0.00%** 0	15	6.80

Median U-turn	**0.00%** 0	**28.57%** 2	**42.86%** 3	**0.00%** 0	**0.00%** 0	**28.57%** 2	**0.00%** 0	**0.00%** 0	**0.00%** 0	7	6.43
Other	**23.53%** 4	**47.06%** 8	**29.41%** 5	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	17	7.94

Q14 If you chose "other" above, please provide a description of the suggested solution.

Answered: 21 Skipped: 145

Q15 Please provide any additional comments.

Answered: 66 Skipped: 100

Q16 Please provide your contact information.

Answered: 142 Skipped: 24

Answer Choices	Responses	
Name	**100.00%**	142
Company	**0.00%**	0
Property Address	**99.30%**	141
Mailing Address (if different than above)	**16.90%**	24
City/Town	**97.89%**	139
State/Province	**96.48%**	137
ZIP/Postal Code	**97.89%**	139
Country	**0.00%**	0
Email Address	**96.48%**	137
Phone Number	**0.00%**	0

H3

Appendix H3 Blue Heron Point

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Jenkins Island Access Management Project

SIGN-IN SHEET
Public Information Meeting
August 12, 2015

CONTACT INFORMATION	
Name Thomas P. Dury 24 Blue Heron Pt Rd Community *(if applicable)* HHI, SC 29928	Address City/Zip Phone 843-816-0091 Email TDChief88@Gmail.com
Name Cynthia Brensel Community *(if applicable)* 8 Cordray St Bluffton SC 29910	Address ~~[illegible]~~ City/Zip Phone Email
Name Becky McCorkendale / CHRIS McCORKENDALE Community *(if applicable)* 32 Blue Heron Pt	Address City/Zip Phone Email crmc2009@gmail.com
Name William J. Godfrey Community *(if applicable)* 27 Blue Heron Pt,	Address City/Zip Phone Email

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SIGN-IN SHEET
Public Information Meeting
August 12, 2015

CONTACT INFORMATION	
Name KEN TURNER Community (if applicable) BLUE HERON PT	Address 17 BLUE HERON City/Zip HHI Phone 342-2818 Email 17BLUE@HARGRAY.COM
Name Marty Pauls Community (if applicable) Blue Heron Pt	Address 18 Blue Heron PT City/Zip HHI, SC 29926 Phone 843-342-6701 Email mjjk16@roadrunner.com
Name CLAUDE CARSON Community (if applicable)	Address 14 BLUE H P City/Zip HHI SC 29928 Phone 0 Email
Name Roy & SANDRA PENWELL Community (if applicable) BLUE HERON POINT	Address 22 BLUE HERON PT Rd. City/Zip HHI Phone 937 545 5377 Email WNDSWPT1@EARTHLINK.NET.

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Jenkins Island Access Management Project

SIGN-IN SHEET
Public Information Meeting
August 12, 2015

CONTACT INFORMATION	
Name Rick Caporale Community *(if applicable)* Bft. County Council	Address City/Zip Phone Email
Name dinah moore Community *(if applicable)* Blue Heron Pt	Address City/Zip Phone Email
Name Rich + Lil Regan Community *(if applicable)* 20 Blue Heron	Address 20 Blue Heron City/Zip Hilton Head SC 29926 Phone 843 681 5092 Email RILITI@AOL.Com
Name Jennie + Jim Drury Community *(if applicable)* Blue Heron Pt	Address 12 Blue Heron City/Zip HH SC 29928 Phone 681 2320 Email jenjim1@hargray.com

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SIGN-IN SHEET
Public Information Meeting
August 12, 2015

CONTACT INFORMATION	
Name Tami Jann behalf of Brian Hover Community *(if applicable)* Blue Heron Pt	Address 21 Blue Heron Pt City/Zip Hilton Head, SC 29926 Phone 843-681-6546 Email tamijo1104@gmail.com
Name Don + Andrea Farmer Community *(if applicable)* BLUE HERON PT.	Address 26 BLUE HERON PT City/Zip Hilton Head, SC 29926 Phone 843-681-3908 Email acdoc1@hargray.com
Name Antonio Shuler Community *(if applicable)* SC DOT	Address City/Zip Phone Email
Name Community *(if applicable)*	Address City/Zip Phone Email

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Jenkins Island Access Management Project

SIGN-IN SHEET
Public Information Meeting
August 12, 2015

CONTACT INFORMATION	
Name WENDELL MULLIGAN Community *(if applicable)* SCDOT	Address City/Zip Phone Email
Name Rob Moore Community *(if applicable)* 10 Blue Heron pt	Address 10 Blue Heron pt. City/Zip HHI 29926 Phone 843-384-5118 Email Robmoore@charternorealty.com
Name Community *(if applicable)*	Address City/Zip Phone Email
Name Community *(if applicable)*	Address City/Zip Phone Email

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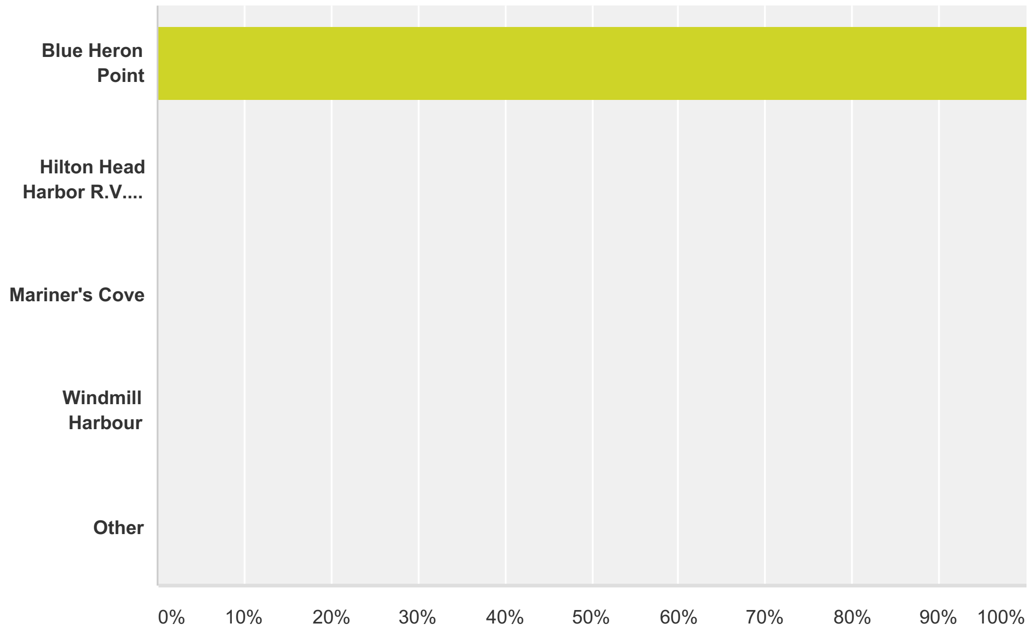
Q1 Please select the community where you currently reside.

Answered: 15 Skipped: 0

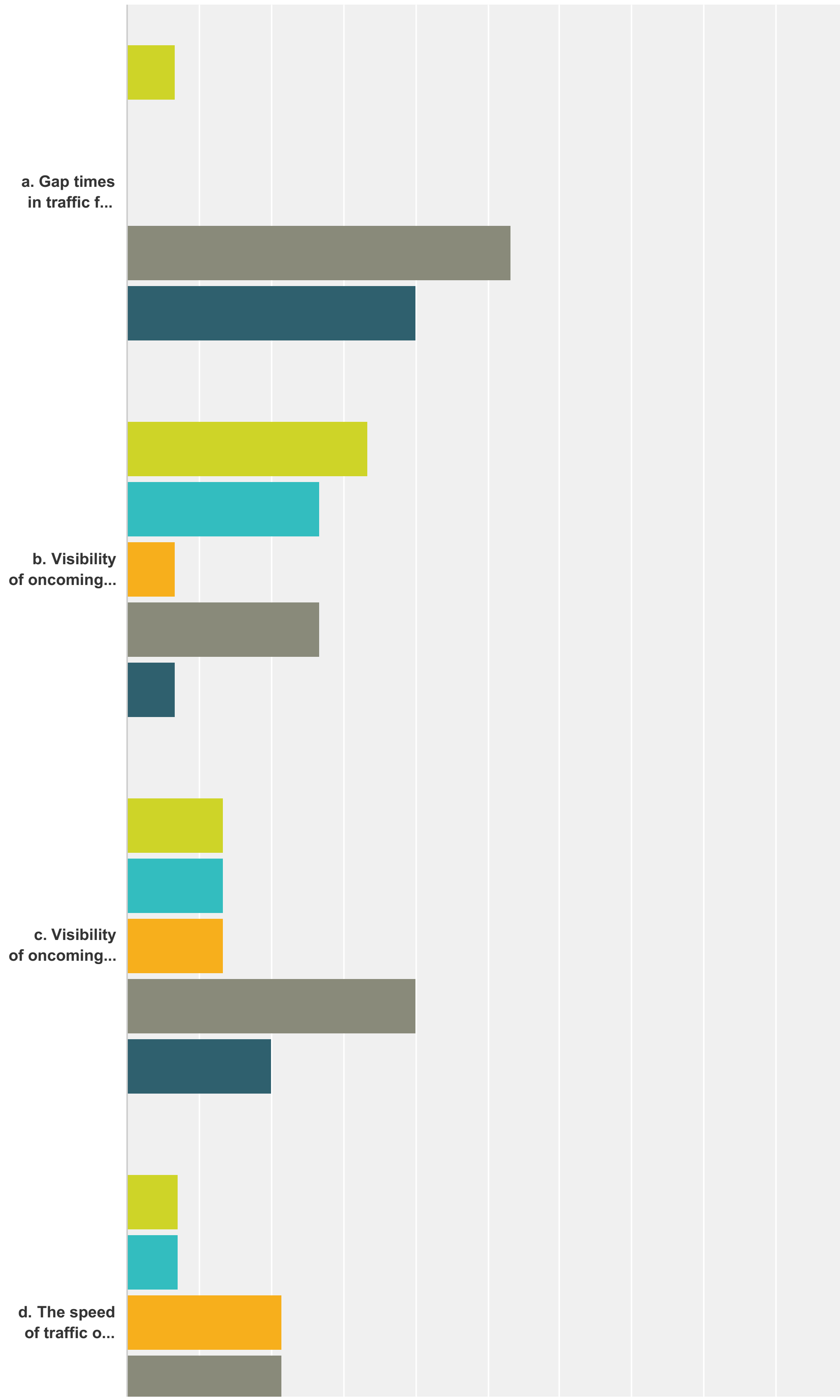


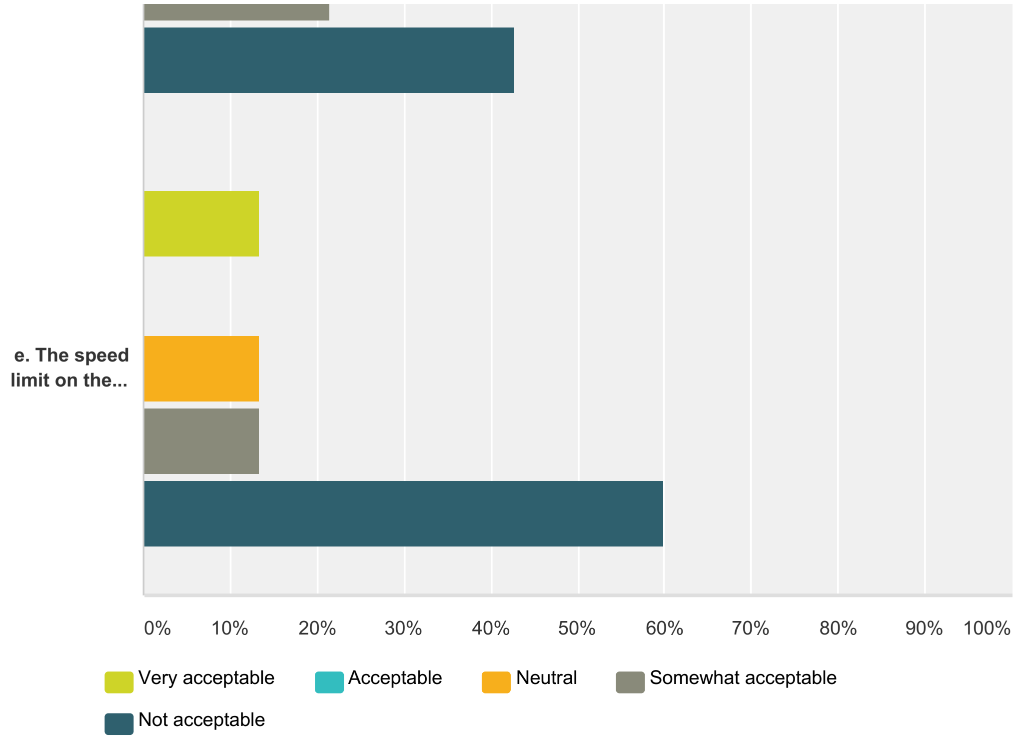
Answer Choices	Responses	
Blue Heron Point	**100.00%**	15
Hilton Head Harbor R.V. Resort	**0.00%**	0
Mariner's Cove	**0.00%**	0
Windmill Harbour	**0.00%**	0
Other	**0.00%**	0
Total		**15**

#	Other	Date
	There are no responses.	

Q2 How satisfied are you with the following conditions:

Answered: 15 Skipped: 0

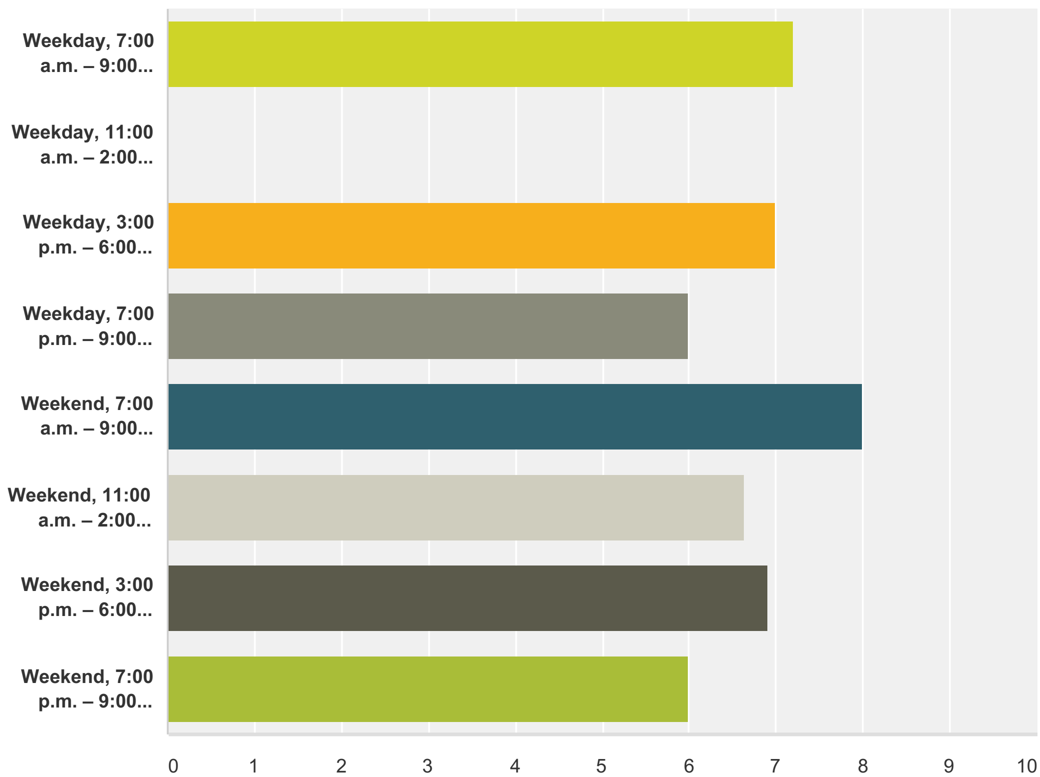




	Very acceptable	Acceptable	Neutral	Somewhat acceptable	Not acceptable	Total
a. Gap times in traffic flow (Gap times refer to the amount of time between cars traveling on US 278 for a vehicle to cross/turn into the flow of traffic safely)	**6.67%** 1	**0.00%** 0	**0.00%** 0	**53.33%** 8	**40.00%** 6	15
b. Visibility of oncoming traffic from left	**33.33%** 5	**26.67%** 4	**6.67%** 1	**26.67%** 4	**6.67%** 1	15
c. Visibility of oncoming traffic from right	**13.33%** 2	**13.33%** 2	**13.33%** 2	**40.00%** 6	**20.00%** 3	15
d. The speed of traffic on US 278	**7.14%** 1	**7.14%** 1	**21.43%** 3	**21.43%** 3	**42.86%** 6	14
e. The speed limit on the J. Wilton Graves Bridge over Mackay Creek	**13.33%** 2	**0.00%** 0	**13.33%** 2	**13.33%** 2	**60.00%** 9	15

Q3 What time of day do you experience the most problems when turning in and out your community? (Please rank your top 3 – “1” being the time of day you have the most difficulty)

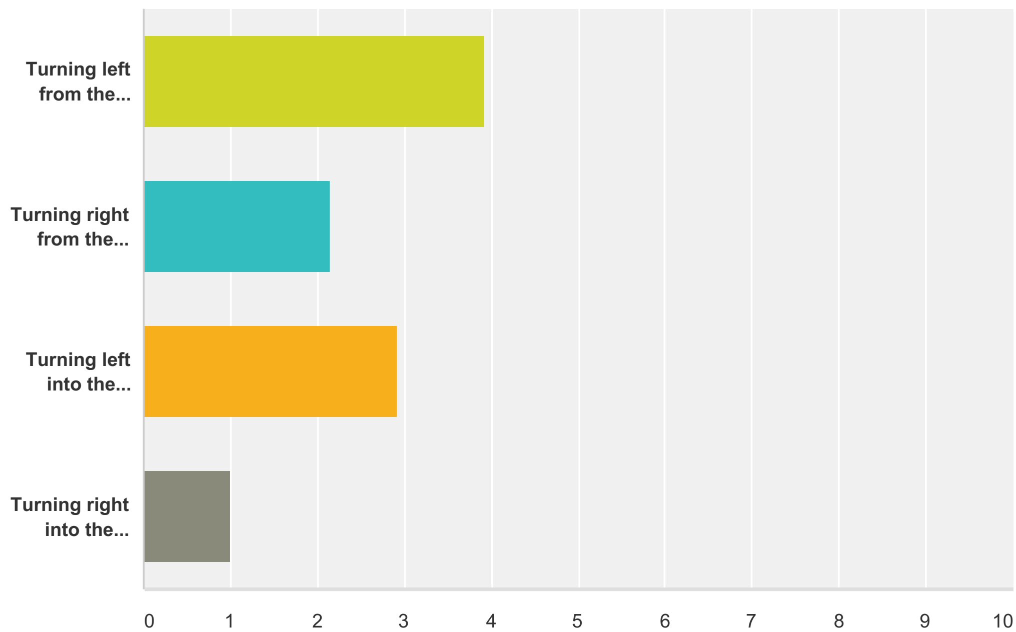
Answered: 14 Skipped: 1



	1	2	3	4	5	6	7	8	Total	Score
Weekday, 7:00 a.m. – 9:00 a.m.	**50.00%** 7	**21.43%** 3	**28.57%** 4	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	14	7.21
Weekday, 11:00 a.m. – 2:00 p.m.	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	0	0.00
Weekday, 3:00 p.m. – 6:00 p.m.	**12.50%** 1	**75.00%** 6	**12.50%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	8	7.00
Weekday, 7:00 p.m. – 9:00 p.m.	**0.00%** 0	**0.00%** 0	**100.00%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	1	6.00
Weekend, 7:00 a.m. – 9:00 a.m.	**100.00%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	1	8.00
Weekend, 11:00 a.m. – 2:00 p.m.	**12.50%** 1	**37.50%** 3	**50.00%** 4	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	8	6.63
Weekend, 3:00 p.m. – 6:00 p.m.	**40.00%** 4	**20.00%** 2	**30.00%** 3	**10.00%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	10	6.90
Weekend, 7:00 p.m. – 9:00 p.m.	**0.00%** 0	**0.00%** 0	**100.00%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	1	6.00

Q4 Which of the following movements on US 278 do you encounter the most difficulty? (Please rank your top 3 – “1” being the movement you have the most difficulty)

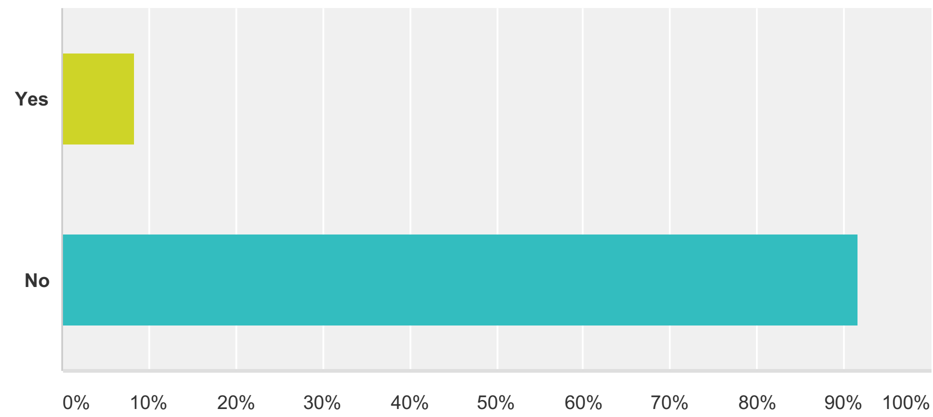
Answered: 14 Skipped: 1



	1	2	3	4	Total	Score
Turning left from the neighborhood	**92.86%** 13	**7.14%** 1	**0.00%** 0	**0.00%** 0	14	3.93
Turning right from the neighborhood	**0.00%** 0	**14.29%** 2	**85.71%** 12	**0.00%** 0	14	2.14
Turning left into the neighborhood	**7.14%** 1	**78.57%** 11	**14.29%** 2	**0.00%** 0	14	2.93
Turning right into the neighborhood	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 1	1	1.00

Q5 Are you in favor of closing median crossovers?

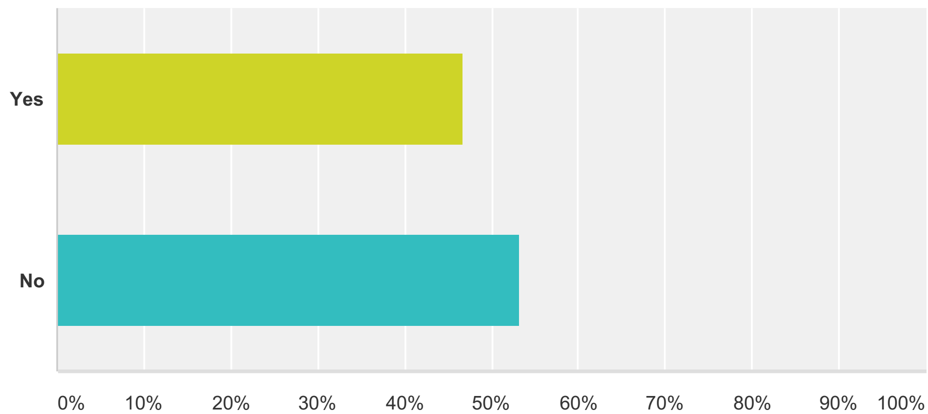
Answered: 12 Skipped: 3



Answer Choices	Responses	
Yes	**8.33%**	1
No	**91.67%**	11
Total		**12**

Q6 Would you like to have a dedicated pedestrian and bike pathway along US 278?

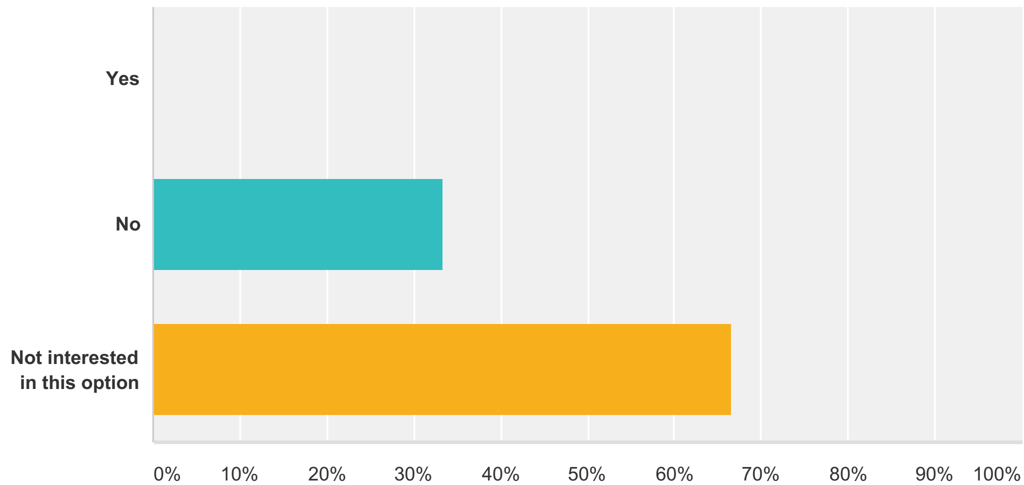
Answered: 15 Skipped: 0



Answer Choices	Responses	
Yes	**46.67%**	7
No	**53.33%**	8
Total		**15**

Q7 If you are a resident of Windmill Harbour – Do you support the Windmill Harbour Neighborhood Association providing property for use as an access easement?

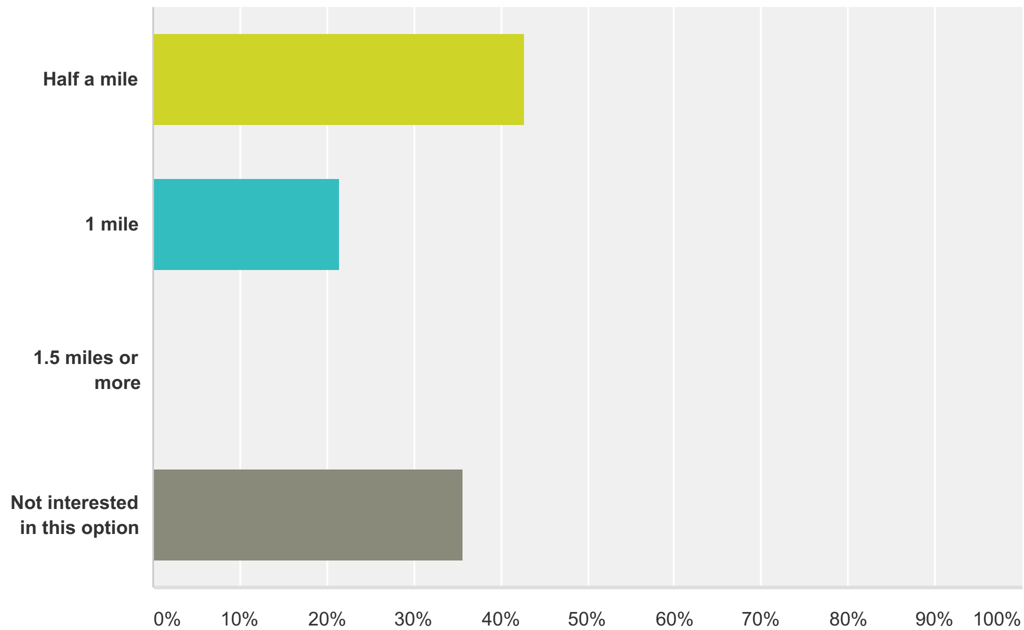
Answered: 3 Skipped: 12



Answer Choices	Responses	
Yes	**0.00%**	0
No	**33.33%**	1
Not interested in this option	**66.67%**	2
Total		**3**

Q8 How far are you willing to travel to make only right hand turns into or out of your community?

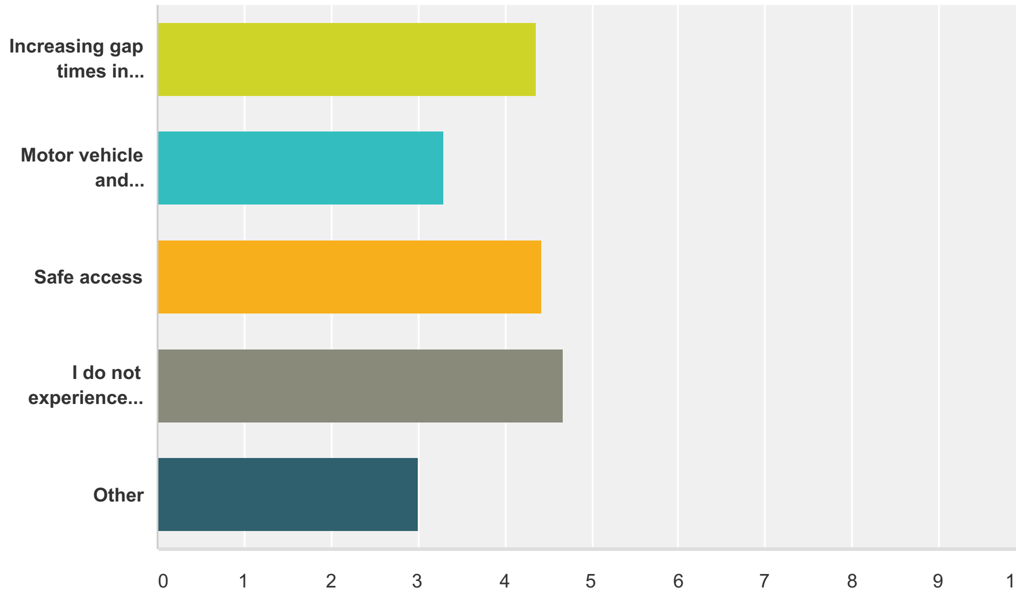
Answered: 14 Skipped: 1



Answer Choices	Responses	
Half a mile	**42.86%**	6
1 mile	**21.43%**	3
1.5 miles or more	**0.00%**	0
Not interested in this option	**35.71%**	5
Total		**14**

Q9 Which of the following traffic issues on Jenkins Island is most important to you? (Please rank your top 3 – “1” being the most important)

Answered: 14 Skipped: 1



	1	2	3	4	5	Total	Score
Increasing gap times in traffic on US 278 to accommodate turns through the crossovers and add provision for pedestrian and bike	**45.45%** 5	**45.45%** 5	**9.09%** 1	**0.00%** 0	**0.00%** 0	11	4.36
Motor vehicle and bike/pedestrian movement	**0.00%** 0	**28.57%** 2	**71.43%** 5	**0.00%** 0	**0.00%** 0	7	3.29
Safe access	**58.33%** 7	**25.00%** 3	**16.67%** 2	**0.00%** 0	**0.00%** 0	12	4.42
I do not experience problems with traffic on Jenkins Island.	**66.67%** 2	**33.33%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	3	4.67
Other	**0.00%** 0	**0.00%** 0	**100.00%** 1	**0.00%** 0	**0.00%** 0	1	3.00

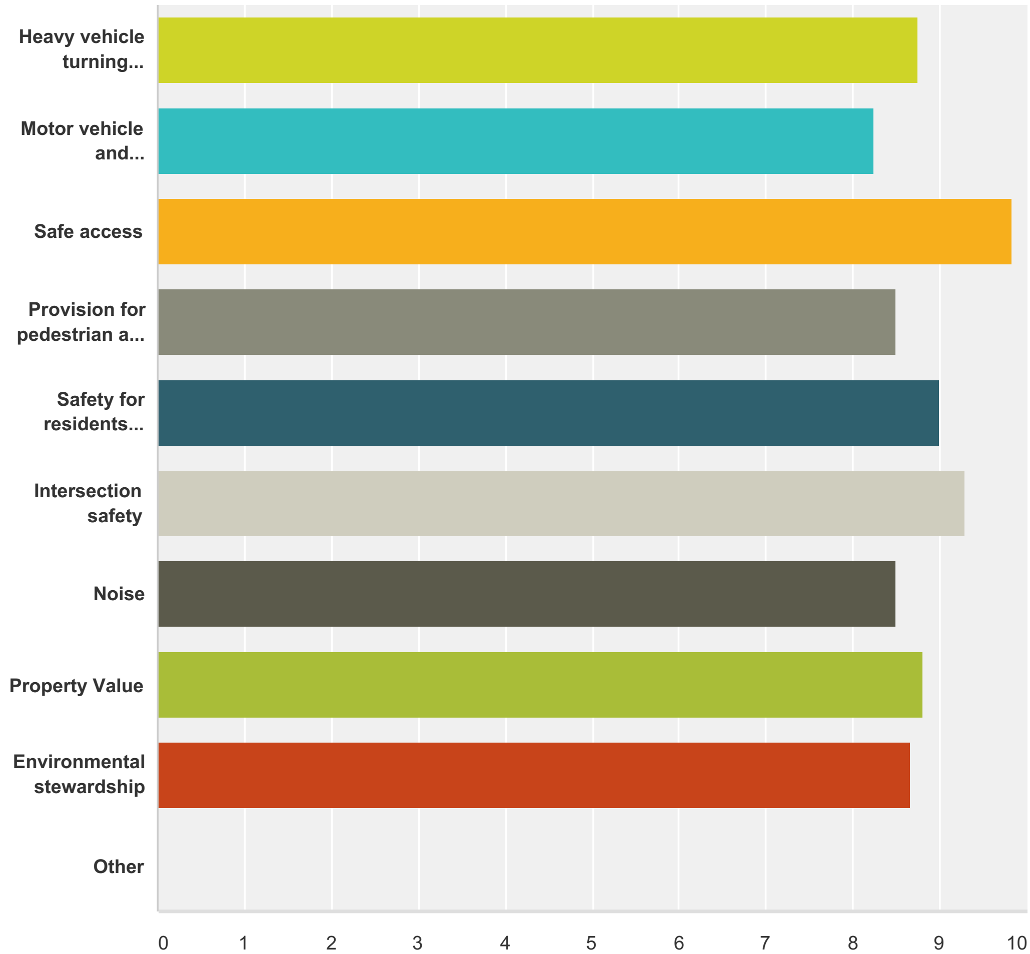
Q10 If you chose "other" above, please provide a description of the traffic issue.

Answered: 1 Skipped: 14

#	Responses	Date
1	BETTER SPEED CONTROL	8/4/2015 11:00 AM

Q11 When evaluating a solution, which of the following issues are the most important to you? (Please rank your top 3 – “1” being the most important)

Answered: 14 Skipped: 1



	1	2	3	4	5	6	7	8	9	10	Total	Score
Heavy vehicle turning movements and accommodations	**25.00%** 1	**25.00%** 1	**50.00%** 2	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	4	8.75
Motor vehicle and bike/pedestrian movement	**0.00%** 0	**25.00%** 1	**75.00%** 3	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	4	8.25
Safe access	**83.33%** 5	**16.67%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	6	9.83
Provision for pedestrian and bike	**0.00%** 0	**50.00%** 1	**50.00%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	2	8.50
Safety for residents within your neighborhood	**33.33%** 2	**33.33%** 2	**33.33%** 2	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	6	9.00
Intersection safety	**40.00%** 4	**50.00%** 5	**10.00%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	10	9.30

Noise	**0.00%** 0	**50.00%** 1	**50.00%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	2	8.50
Property Value	**20.00%** 1	**40.00%** 2	**40.00%** 2	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	5	8.80
Environmental stewardship	**33.33%** 1	**0.00%** 0	**66.67%** 2	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	3	8.67
Other	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	0	0.00

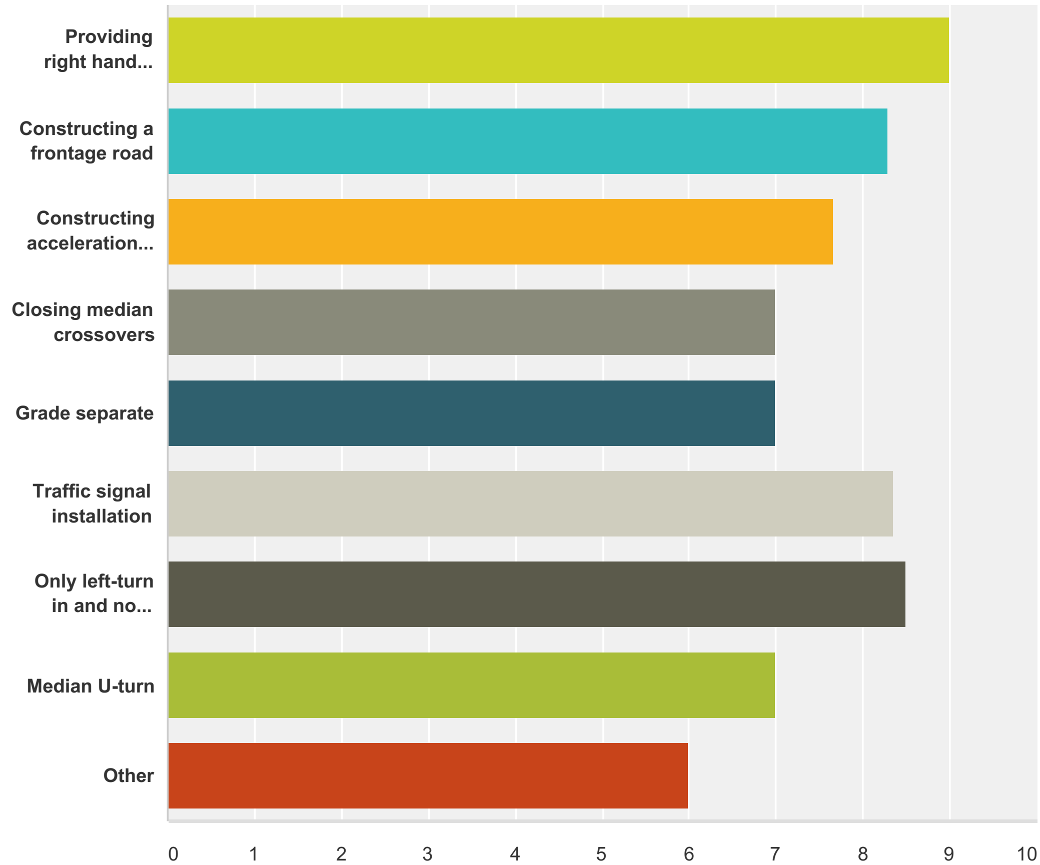
Q12 If you chose "other" above, please provide a description of the issue as it relates to the solution.

Answered: 0 Skipped: 15

#	Responses	Date
	There are no responses.	

Q13 Of the following solutions, which addresses your traffic concerns?(Please rank your top 3 – "1" being the solution that best addresses your traffic concerns)

Answered: 12 Skipped: 3



	1	2	3	4	5	6	7	8	9	Total	Score
Providing right hand turns for entrance and exit to/from communities	**100.00%** 3	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	3	9.00
Constructing a frontage road	**42.86%** 3	**42.86%** 3	**14.29%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	7	8.29
Constructing acceleration/deceleration lanes	**0.00%** 0	**66.67%** 2	**33.33%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	3	7.67
Closing median crossovers	**0.00%** 0	**0.00%** 0	**100.00%** 2	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	2	7.00
Grade separate	**0.00%** 0	**0.00%** 0	**100.00%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	1	7.00
Traffic signal installation	**45.45%** 5	**45.45%** 5	**9.09%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	11	8.36
Only left-turn in and no left-turn out from communities	**50.00%** 1	**50.00%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	2	8.50

Median U-turn	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	3	7.00
Other	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	1	6.00

Q14 If you chose "other" above, please provide a description of the suggested solution.

Answered: 1 Skipped: 14

#	Responses	Date
1	Reduce bridge speed to 45, like before & after. Ranks 1 - 3are a package	8/2/2015 8:59 PM

Q15 Please provide any additional comments.

Answered: 7 Skipped: 8

#	Responses	Date
1	Traffic numbers have been flat for years along 278. Its safe to say we are not looking at increase numbers in 5-10 years. Accident and crash data appear to reflect safety is not a driving issue. Improving acceleration, line of site and de acceleration lanes or adding where none exists would certainly enhance existing safety. The rural nature of Pinckney, Hog and Jenkins islands as the gateway to HHI is what makes HHI special. Its what gives the millions of visitors annually the knowledge they have arrived at a unique destination and part of why they return. Respect of the salt marsh, and wildlife is why we are not Myrtle beach. No disrespect intended. Stacking in and out of WH is NEVER excessive, and non existent along the other two access points for BHP and HH Harbor. A solution looking for a problem has been forwarded by WH for years.	8/13/2015 12:40 AM
2	I am nervous just about everyday turning out of our community. I am especially nervous for my wife turning into oncoming traffic with my three children.	8/3/2015 1:12 PM
3	Not in favor of redirecting extensive traffic to north side of 278. Concerns about damage to marsh, noise and reduced property values on Blue heron, more severe with closeness to traffic	8/2/2015 9:08 PM
4	Left turn in and out the main issue	7/31/2015 1:54 PM
5	Heavy Sat/Sun traffic makes getting into and out of our street impossible , we are trapped in our street and lose one full day of every weekend ?? This is killing our property values!and life values, we need gaps in the traffic not fancy traffic patterns.Gaps will allow normalcy to traffic flow without new construction	7/30/2015 9:46 PM
6	There should be one light for both. During the hot season it would be nice if the sheriffs dept. takes action of all lights from Bluffton to Spanish Wells Rd. It all comes down to signs, Do not block intersections. cell number 843-816-0091	7/29/2015 1:50 PM
7	Recommend extend "Old Bridge Road" past Windmill Harbor to stop light at Jenkins Island. Very much against traffice going to main land via under bridge and across wet lands to right turn onto 278. Dangerous!	7/29/2015 10:10 AM

Q16 Please provide your contact information.

Answered: 12 Skipped: 3

Answer Choices	Responses	
Name	**100.00%**	12
Company	**0.00%**	0
Property Address	**100.00%**	12
Mailing Address (if different than above)	**0.00%**	0
City/Town	**91.67%**	11
State/Province	**100.00%**	12
ZIP/Postal Code	**100.00%**	12
Country	**0.00%**	0
Email Address	**100.00%**	12
Phone Number	**0.00%**	0

#	Name	Date
1	Rob Moore	8/13/2015 12:40 AM
2	KEN TURNER	8/4/2015 11:04 AM
3	Tim Lucas	8/3/2015 1:12 PM
4	Lori Lucas	8/3/2015 1:04 PM
5	Jim & Jennie Drury	8/2/2015 9:08 PM
6	Sandy Penwell	7/31/2015 4:28 PM
7	Peter Bishop	7/31/2015 1:54 PM
8	Tom morse	7/30/2015 9:46 PM
9	Thomas P. Dury	7/29/2015 1:50 PM
10	Martin Pauls	7/29/2015 11:35 AM
11	dinah morse	7/29/2015 11:15 AM
12	Joe Patton	7/29/2015 10:10 AM
#	**Company**	**Date**
	There are no responses.	
#	**Property Address**	**Date**
1	10 Blue Heron Ponte	8/13/2015 12:40 AM
2	17 BLUE HERON POINT	8/4/2015 11:04 AM
3	28 Blue Heron Pt.	8/3/2015 1:12 PM
4	28 Blue Heron Point	8/3/2015 1:04 PM
5	12 Blue Heron Pt.	8/2/2015 9:08 PM
6	22 Blue Heron Point	7/31/2015 4:28 PM
7	34 Blue Heron Point	7/31/2015 1:54 PM

8	19 Blue Heron pt.	7/30/2015 9:46 PM
9	24 Blue Heron Pt. Rd	7/29/2015 1:50 PM
10	18 Blue Heron Pt.	7/29/2015 11:35 AM
11	19 blue heron pt	7/29/2015 11:15 AM
12	36 Blue Heron Point	7/29/2015 10:10 AM
#	**Mailing Address (if different than above)**	**Date**
	There are no responses.	
#	**City/Town**	**Date**
1	HHI	8/13/2015 12:40 AM
2	HILTON HEAD IS.	8/4/2015 11:04 AM
3	Hilton Head Island	8/3/2015 1:12 PM
4	Hilton Head	8/3/2015 1:04 PM
5	Hilton Head	8/2/2015 9:08 PM
6	Hilton Head	7/31/2015 1:54 PM
7	HHI	7/30/2015 9:46 PM
8	HHI	7/29/2015 1:50 PM
9	Hilton Head Island	7/29/2015 11:35 AM
10	hilton head	7/29/2015 11:15 AM
11	Hilton Head	7/29/2015 10:10 AM
#	**State/Province**	**Date**
1	SC	8/13/2015 12:40 AM
2	South Carolina	8/4/2015 11:04 AM
3	SC	8/3/2015 1:12 PM
4	SC	8/3/2015 1:04 PM
5	SC	8/2/2015 9:08 PM
6	S. C.	7/31/2015 4:28 PM
7	S C	7/31/2015 1:54 PM
8	SC	7/30/2015 9:46 PM
9	SC	7/29/2015 1:50 PM
10	South Carolina	7/29/2015 11:35 AM
11	sc	7/29/2015 11:15 AM
12	SC	7/29/2015 10:10 AM
#	**ZIP/Postal Code**	**Date**
1	29926	8/13/2015 12:40 AM
2	29926	8/4/2015 11:04 AM
3	29926	8/3/2015 1:12 PM
4	29926	8/3/2015 1:04 PM
5	29926	8/2/2015 9:08 PM
6	29926	7/31/2015 4:28 PM
7	29926	7/31/2015 1:54 PM
8	29926	7/30/2015 9:46 PM

9	29926	7/29/2015 1:50 PM
10	29926	7/29/2015 11:35 AM
11	29926	7/29/2015 11:15 AM
12	29926-1209	7/29/2015 10:10 AM
#	**Country**	**Date**
	There are no responses.	
#	**Email Address**	**Date**
1	robmoore@charteronerealty.com	8/13/2015 12:40 AM
2	KKJT3@HARGRAY.COM	8/4/2015 11:04 AM
3	tim.p.lucas@gmail.com	8/3/2015 1:12 PM
4	loriklucas@gmail.com	8/3/2015 1:04 PM
5	jenjim1@hargray.com	8/2/2015 9:08 PM
6	wndswpt1@earthlink.net	7/31/2015 4:28 PM
7	prbishop8500@gmail.com	7/31/2015 1:54 PM
8	dmorse19 @gmail.com	7/30/2015 9:46 PM
9	tdchief88@gmail.com	7/29/2015 1:50 PM
10	mjjk1@roadrunner.com	7/29/2015 11:35 AM
11	dmorse19@gmail.com	7/29/2015 11:15 AM
12	JDPatton@aol.com	7/29/2015 10:10 AM
#	**Phone Number**	**Date**
	There are no responses.	

H4

Appendix H4 Mariner's Cove

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Jenkins Island Access Management Project

SIGN-IN SHEET
Public Information Meeting
August 12, 2015

CONTACT INFORMATION

Name / Community	Address / City/Zip / Phone / Email
Name: DOUGLAS N. SKELLY CPM Community (*if applicable*): MARINERS COVE CLUB	Address: PO BOX 7665 City/Zip: HILTON HEAD IS, SC 29926 Phone: 843-816-4611 Email: DNSKELLY@AOL.COM
Name: Cynthia Bensch Community (*if applicable*): C C	Address: City/Zip: Phone: Email:
Name: DONNA WINTER Bruce Winter Community (*if applicable*): MARINERS COVE CLUB	Address: 306 Mariners Cove Club City/Zip: 2 Wm. Hilton Pkwy Phone: HHI, SC 29926 843.298.0676 Email: donna@donnawinter.com
Name: Susan + Rickey Hedes Community (*if applicable*):	Address: 304 Mariners Cove City/Zip: Hilton Head, SC 29926 Phone: 843-689-9604 Email: susan@southernserviceshhi.com

For Office Use Only: #________ of #__________
Entered into DB on _______________ by _______________

Jenkins Island Access Management Project

SIGN-IN SHEET
Public Information Meeting
August 12, 2015

CONTACT INFORMATION	
Name Rob and Kim Moore Community *(if applicable)* Blue Heron Point	Address 10 Blue Heron City/Zip HHI, SC 29926 Phone 843-671-3007 Email moore1503@roadrunner
Name MAUREEN SMITH Community *(if applicable)* MARINERS CVE	Address 205 Mariners Cove City/Zip HH SC 29926 Phone 843 816 4653 Email travelSmith @ hargray. com
Name Sandra McMichael Community *(if applicable)* Mariners Cove	Address 503 Mariners Cove City/Zip HHI SC 29926 Phone 843. 681. 3044 Email smcmichael@savannahcardiology.com
Name Community *(if applicable)*	Address City/Zip Phone Email

For Office Use Only: #________ of #__________
Entered into DB on _________________ by _________________

Jenkins Island Access Management Project

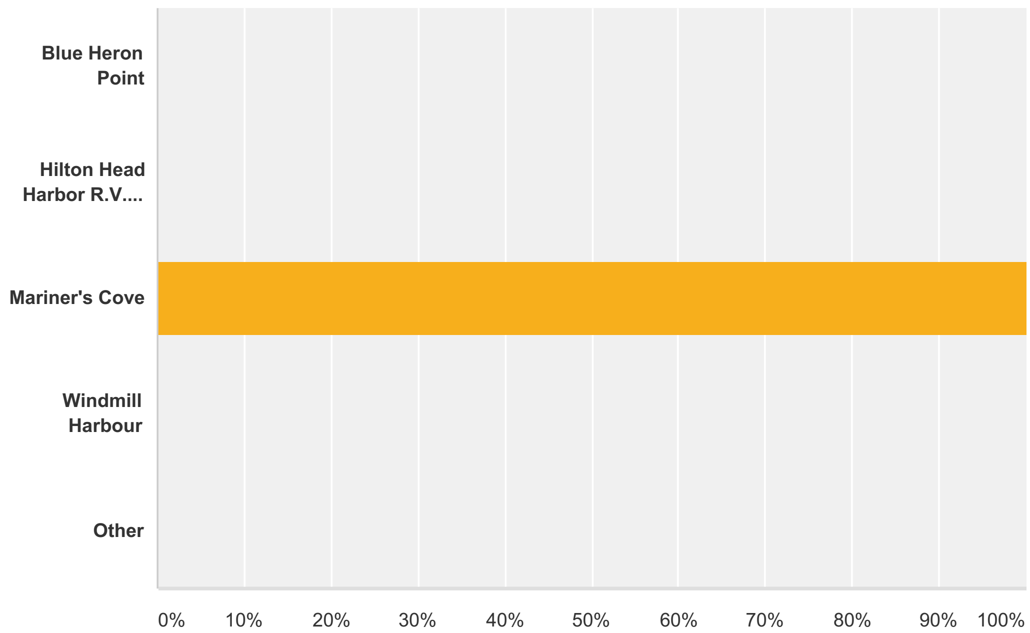
SIGN-IN SHEET
Public Information Meeting
August 12, 2015

CONTACT INFORMATION	
Name Rick Caporale Community *(if applicable)* Bft. County Council	Address City/Zip Phone Email
Name Judith Tom Hillis Community *(if applicable)* Mariner's Cove	Address 2 William Hilton Pkwy, Apt 104 City/Zip Hilton Head Is, SC 29926 Phone 681-5483 Email jwithhillis@ HARGRAY.com
Name Community *(if applicable)*	Address City/Zip Phone Email
Name Community *(if applicable)*	Address City/Zip Phone Email

For Office Use Only: #________ of #__________
Entered into DB on ________________ by ________________

Q1 Please select the community where you currently reside.

Answered: 14 Skipped: 0

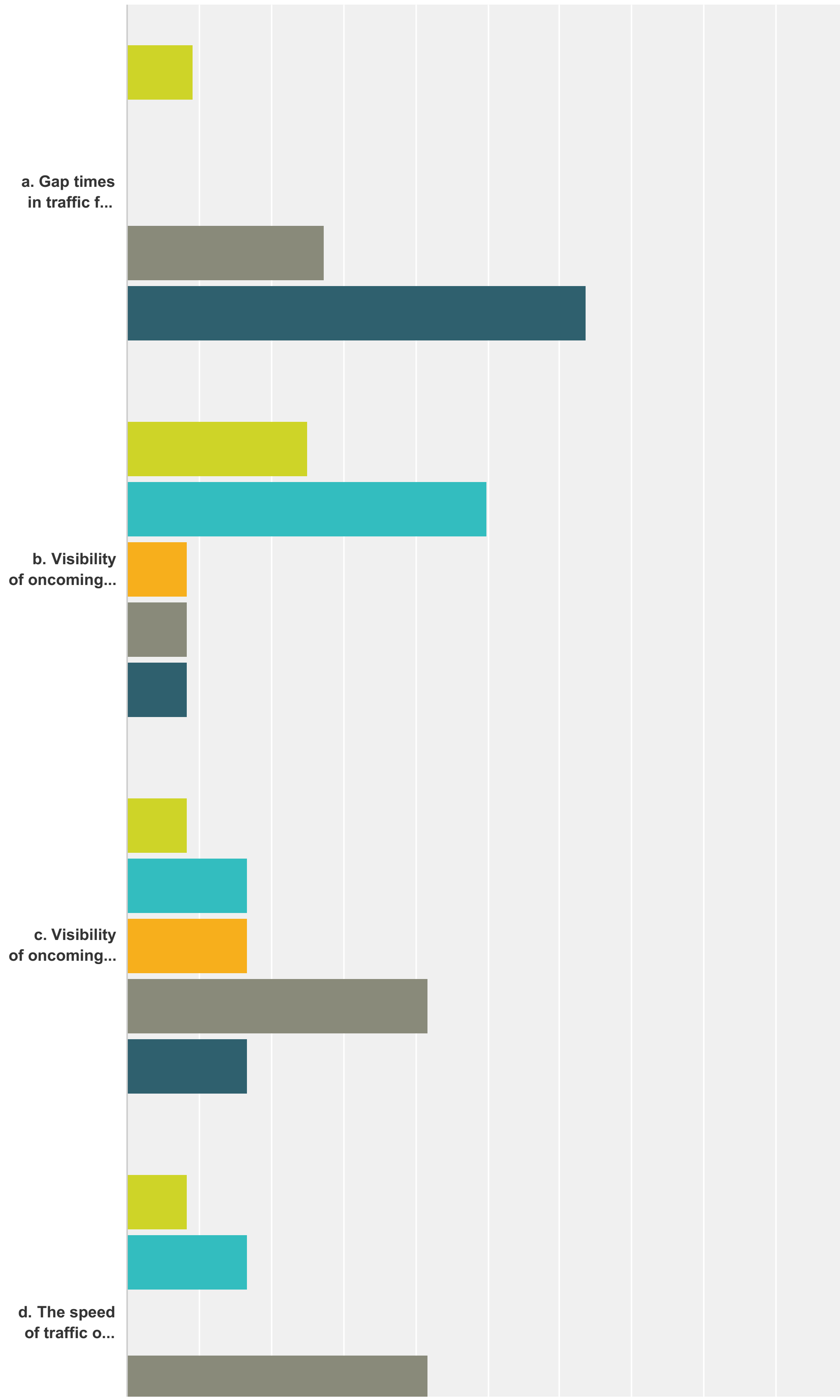


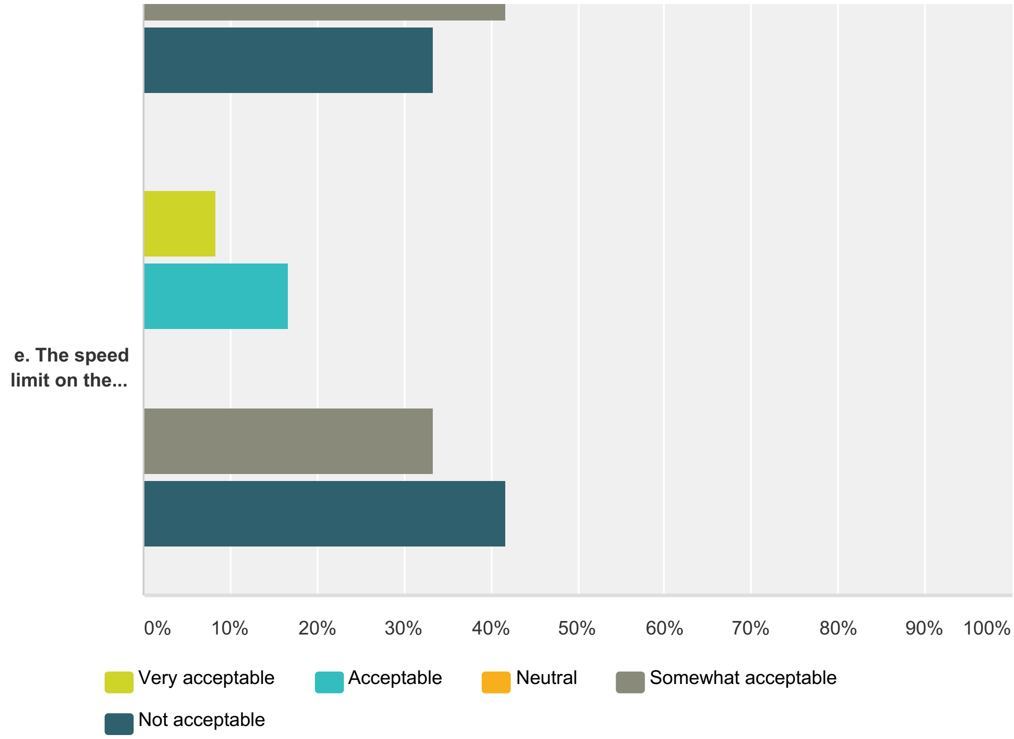
Answer Choices	Responses	
Blue Heron Point	**0.00%**	0
Hilton Head Harbor R.V. Resort	**0.00%**	0
Mariner's Cove	**100.00%**	14
Windmill Harbour	**0.00%**	0
Other	**0.00%**	0
Total		**14**

#	Other	Date
	There are no responses.	

Q2 How satisfied are you with the following conditions:

Answered: 12 Skipped: 2

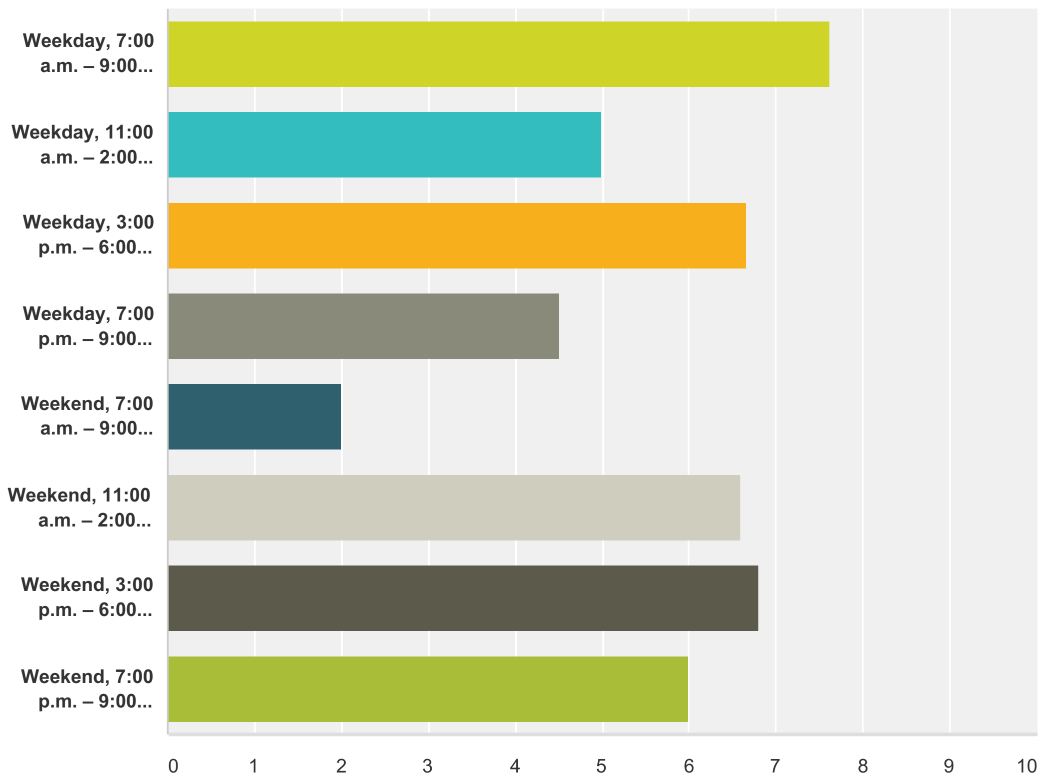




	Very acceptable	Acceptable	Neutral	Somewhat acceptable	Not acceptable	Total
a. Gap times in traffic flow (Gap times refer to the amount of time between cars traveling on US 278 for a vehicle to cross/turn into the flow of traffic safely)	**9.09%** 1	**0.00%** 0	**0.00%** 0	**27.27%** 3	**63.64%** 7	11
b. Visibility of oncoming traffic from left	**25.00%** 3	**50.00%** 6	**8.33%** 1	**8.33%** 1	**8.33%** 1	12
c. Visibility of oncoming traffic from right	**8.33%** 1	**16.67%** 2	**16.67%** 2	**41.67%** 5	**16.67%** 2	12
d. The speed of traffic on US 278	**8.33%** 1	**16.67%** 2	**0.00%** 0	**41.67%** 5	**33.33%** 4	12
e. The speed limit on the J. Wilton Graves Bridge over Mackay Creek	**8.33%** 1	**16.67%** 2	**0.00%** 0	**33.33%** 4	**41.67%** 5	12

Q3 What time of day do you experience the most problems when turning in and out your community? (Please rank your top 3 – “1” being the time of day you have the most difficulty)

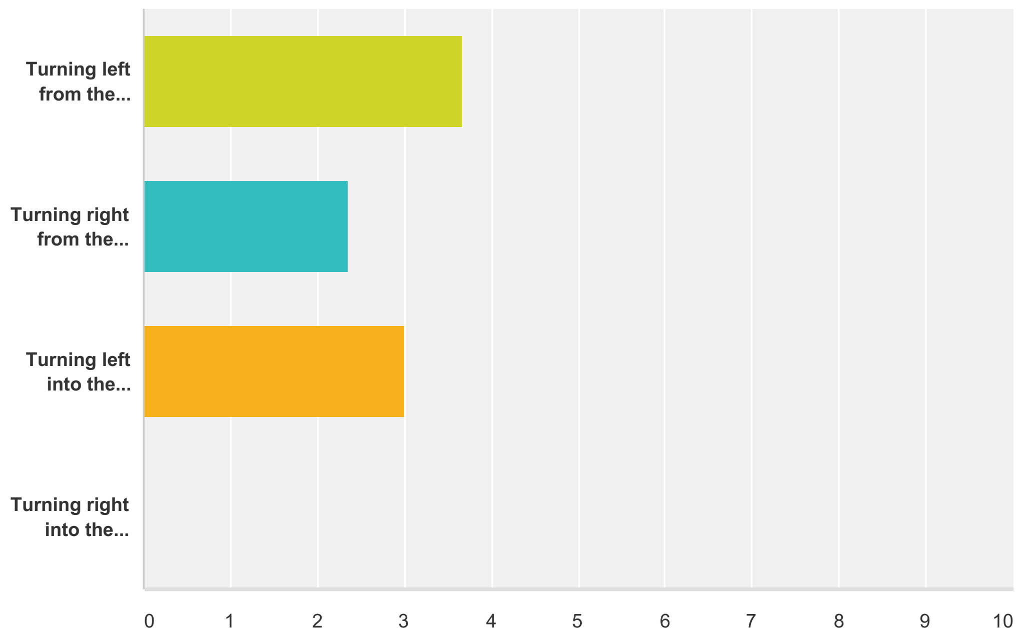
Answered: 11 Skipped: 3



	1	2	3	4	5	6	7	8	Total	Score
Weekday, 7:00 a.m. – 9:00 a.m.	75.00% 6	12.50% 1	12.50% 1	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	8	7.63
Weekday, 11:00 a.m. – 2:00 p.m.	0.00% 0	0.00% 0	0.00% 0	100.00% 1	0.00% 0	0.00% 0	0.00% 0	0.00% 0	1	5.00
Weekday, 3:00 p.m. – 6:00 p.m.	22.22% 2	44.44% 4	22.22% 2	0.00% 0	11.11% 1	0.00% 0	0.00% 0	0.00% 0	9	6.67
Weekday, 7:00 p.m. – 9:00 p.m.	0.00% 0	0.00% 0	50.00% 1	0.00% 0	0.00% 0	50.00% 1	0.00% 0	0.00% 0	2	4.50
Weekend, 7:00 a.m. – 9:00 a.m.	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	100.00% 1	0.00% 0	1	2.00
Weekend, 11:00 a.m. – 2:00 p.m.	20.00% 1	40.00% 2	20.00% 1	20.00% 1	0.00% 0	0.00% 0	0.00% 0	0.00% 0	5	6.60
Weekend, 3:00 p.m. – 6:00 p.m.	20.00% 2	40.00% 4	40.00% 4	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	10	6.80
Weekend, 7:00 p.m. – 9:00 p.m.	0.00% 0	0.00% 0	100.00% 2	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	2	6.00

Q4 Which of the following movements on US 278 do you encounter the most difficulty? (Please rank your top 3 – “1” being the movement you have the most difficulty)

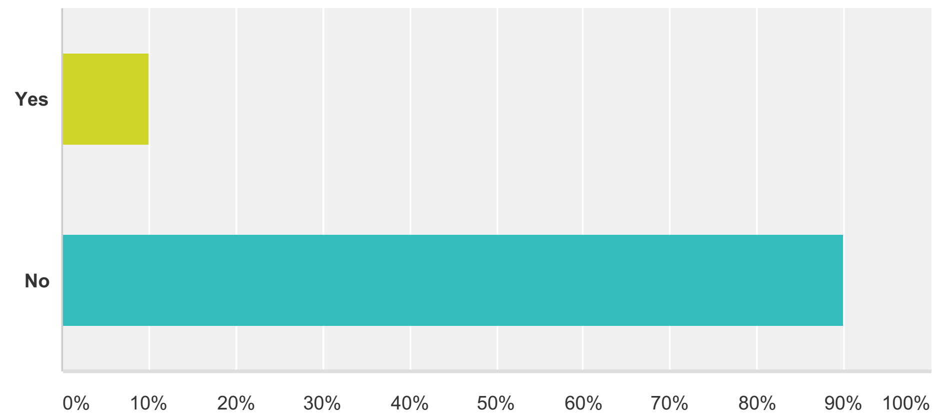
Answered: 12 Skipped: 2



	1	2	3	4	Total	Score
Turning left from the neighborhood	**66.67%** 8	**33.33%** 4	**0.00%** 0	**0.00%** 0	12	3.67
Turning right from the neighborhood	**9.09%** 1	**18.18%** 2	**72.73%** 8	**0.00%** 0	11	2.36
Turning left into the neighborhood	**25.00%** 3	**50.00%** 6	**25.00%** 3	**0.00%** 0	12	3.00
Turning right into the neighborhood	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	0	0.00

Q5 Are you in favor of closing median crossovers?

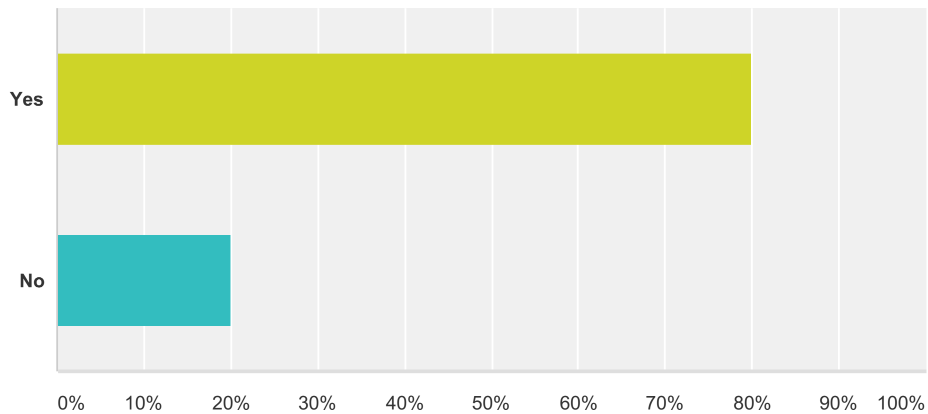
Answered: 10 Skipped: 4



Answer Choices	Responses	
Yes	**10.00%**	1
No	**90.00%**	9
Total		**10**

Q6 Would you like to have a dedicated pedestrian and bike pathway along US 278?

Answered: 10 Skipped: 4



Answer Choices	Responses	
Yes	**80.00%**	8
No	**20.00%**	2
Total		**10**

Q7 If you are a resident of Windmill Harbour – Do you support the Windmill Harbour Neighborhood Association providing property for use as an access easement?

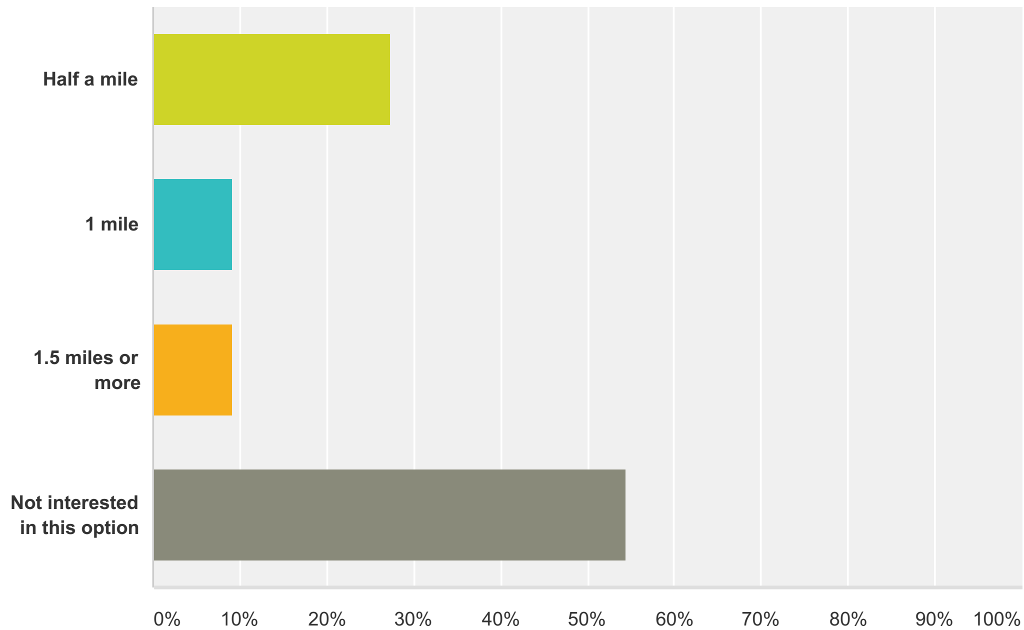
Answered: 0 Skipped: 14

! No matching responses.

Answer Choices	Responses	
Yes	**0.00%**	0
No	**0.00%**	0
Not interested in this option	**0.00%**	0
Total		**0**

Q8 How far are you willing to travel to make only right hand turns into or out of your community?

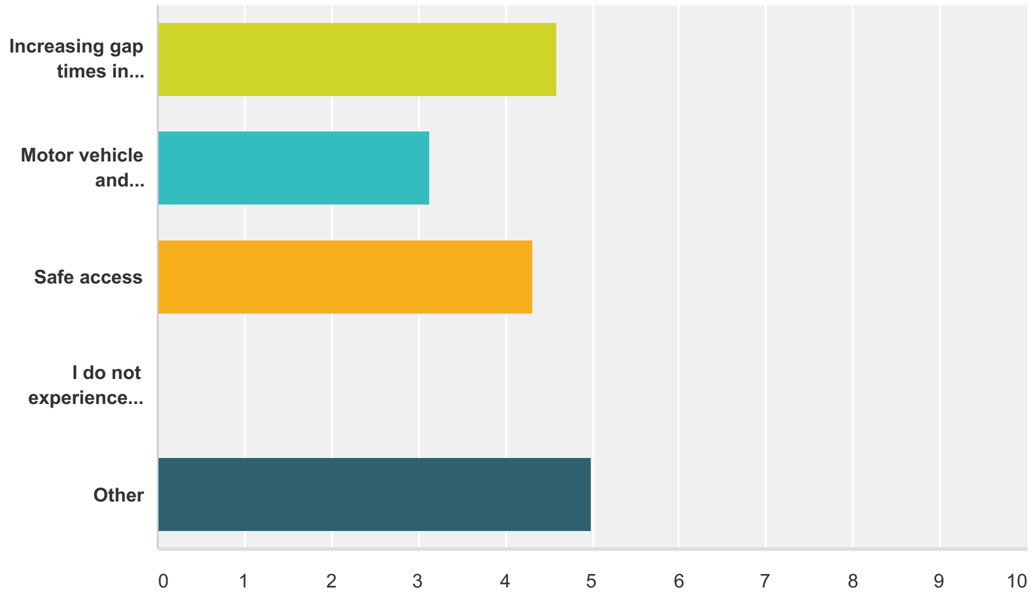
Answered: 11 Skipped: 3



Answer Choices	Responses	
Half a mile	**27.27%**	3
1 mile	**9.09%**	1
1.5 miles or more	**9.09%**	1
Not interested in this option	**54.55%**	6
Total		**11**

Q9 Which of the following traffic issues on Jenkins Island is most important to you? (Please rank your top 3 – “1” being the most important)

Answered: 11 Skipped: 3



	1	2	3	4	5	Total	Score
Increasing gap times in traffic on US 278 to accommodate turns through the crossovers and add provision for pedestrian and bike	**70.00%** 7	**20.00%** 2	**10.00%** 1	**0.00%** 0	**0.00%** 0	10	4.60
Motor vehicle and bike/pedestrian movement	**0.00%** 0	**12.50%** 1	**87.50%** 7	**0.00%** 0	**0.00%** 0	8	3.13
Safe access	**33.33%** 3	**66.67%** 6	**0.00%** 0	**0.00%** 0	**0.00%** 0	9	4.33
I do not experience problems with traffic on Jenkins Island.	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	0	0.00
Other	**100.00%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	1	5.00

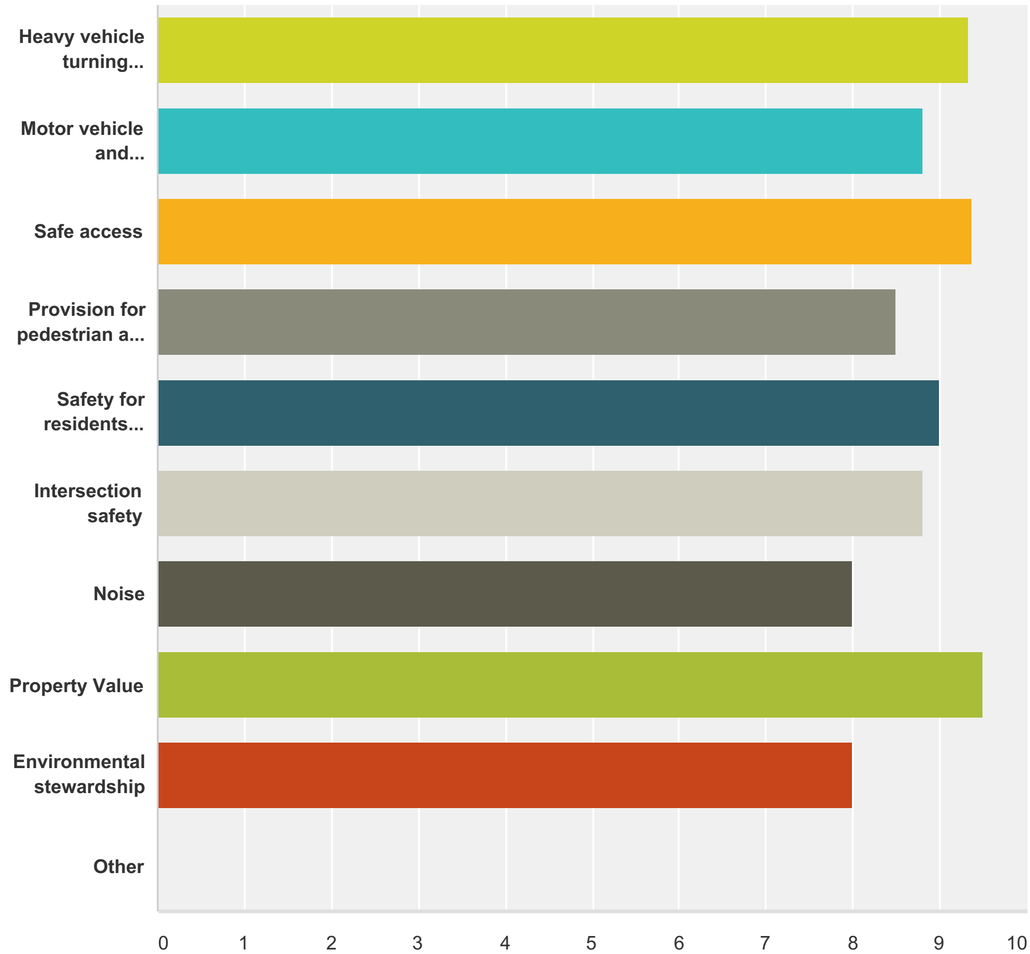
Q10 If you chose "other" above, please provide a description of the traffic issue.

Answered: 2 Skipped: 12

#	Responses	Date
1	Perhaps a flashing warning light about cars approaching the curve traveling off the island	7/30/2015 12:16 PM
2	traffic is acceptable, no more money wasted.	7/28/2015 4:03 PM

Q11 When evaluating a solution, which of the following issues are the most important to you? (Please rank your top 3 – “1” being the most important)

Answered: 11 Skipped: 3



	1	2	3	4	5	6	7	8	9	10	Total	Score
Heavy vehicle turning movements and accommodations	33.33% 1	66.67% 2	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	3	9.33
Motor vehicle and bike/pedestrian movement	20.00% 1	40.00% 2	40.00% 2	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	5	8.80
Safe access	62.50% 5	12.50% 1	25.00% 2	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	8	9.38
Provision for pedestrian and bike	0.00% 0	50.00% 1	50.00% 1	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	2	8.50
Safety for residents within your neighborhood	33.33% 1	33.33% 1	33.33% 1	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	3	9.00
Intersection safety	0.00% 0	80.00% 4	20.00% 1	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	5	8.80

Noise	**0.00%** 0	**0.00%** 0	**100.00%** 2	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	2	8.00
Property Value	**75.00%** 3	**0.00%** 0	**25.00%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	4	9.50
Environmental stewardship	**0.00%** 0	**0.00%** 0	**100.00%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	1	8.00
Other	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	0	0.00

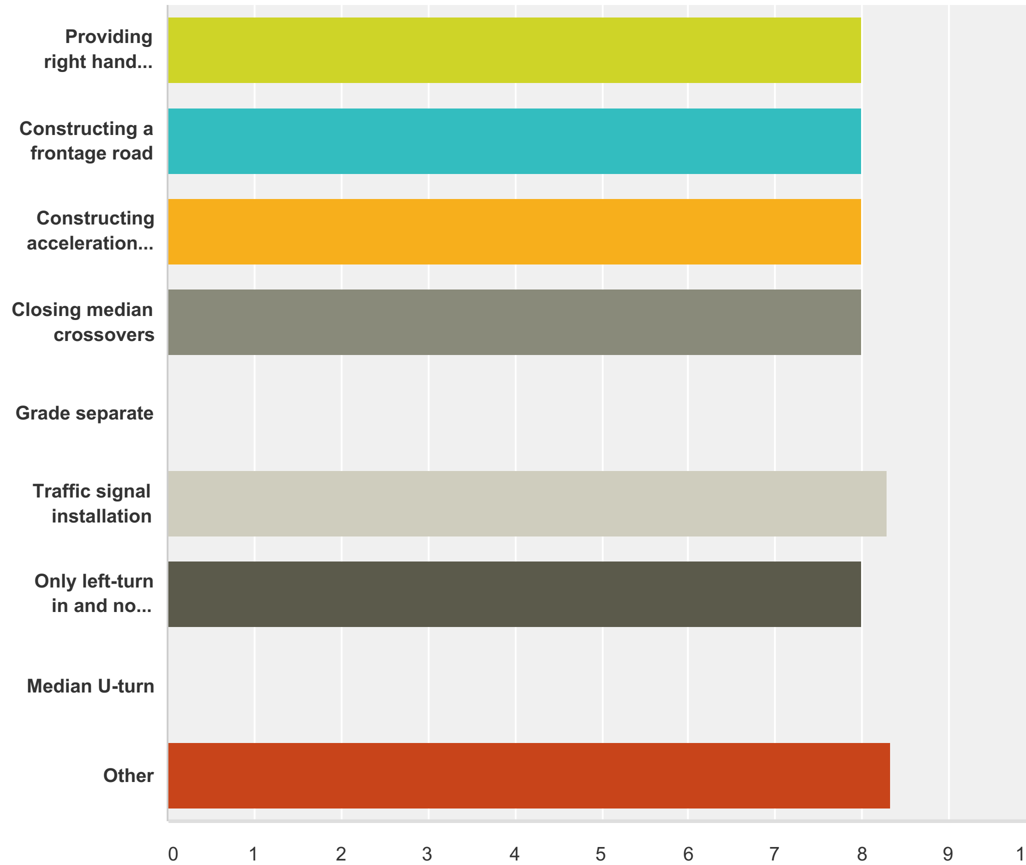
Q12 If you chose "other" above, please provide a description of the issue as it relates to the solution.

Answered: 1 Skipped: 13

#	Responses	Date
1	does "heavy vehicle" mean trucks? not clear	7/30/2015 12:18 PM

Q13 Of the following solutions, which addresses your traffic concerns?(Please rank your top 3 – "1" being the solution that best addresses your traffic concerns)

Answered: 9 Skipped: 5



	1	2	3	4	5	6	7	8	9	Total	Score
Providing right hand turns for entrance and exit to/from communities	**50.00%** 2	**0.00%** 0	**50.00%** 2	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	4	8.00
Constructing a frontage road	**0.00%** 0	**100.00%** 2	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	2	8.00
Constructing acceleration/deceleration lanes	**33.33%** 1	**33.33%** 1	**33.33%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	3	8.00
Closing median crossovers	**0.00%** 0	**100.00%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	1	8.00
Grade separate	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	0	0.00
Traffic signal installation	**57.14%** 4	**14.29%** 1	**28.57%** 2	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	7	8.29
Only left-turn in and no left-turn out from communities	**0.00%** 0	**100.00%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	1	8.00

Median U-turn	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	0	0.00
Other	**66.67%** 2	**0.00%** 0	**33.33%** 1	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	**0.00%** 0	3	8.33

Q14 If you chose "other" above, please provide a description of the suggested solution.

Answered: 3 Skipped: 11

#	Responses	Date
1	INSTALL A TRAFFIC LIGHT AT THE END OF THE CROSS-ISLAND 9WHERE IT CURRENTLY ENDS) TO KEEP GAPS IN TRAFFIC DUE TO THE NEW FLY-OVER.	8/12/2015 2:56 PM
2	increase gap time for lights both 278 and bluffton parkway allowing residents time for movement	7/31/2015 12:30 PM
3	leave as is	7/28/2015 4:05 PM

Q15 Please provide any additional comments.

Answered: 5 Skipped: 9

#	Responses	Date
1	If the speed was reduced on cars coming across the brdige that would help a lot. There is no reason to have it at 50mph 35mph would be more like it as people tend to accelrate going down hill anyway	8/12/2015 4:20 PM
2	People coming over the bridge on to island often switch lanes once on island and cause dangerous situations for drivers pulling out of Mariner's Cove either going right or going across the median and turning left. It has been very frustrating . Most of the times both lanes have to stop to let me cross over when the traffic slows to a crawl.	8/12/2015 2:05 PM
3	keep Median crossover for 2 William Hilton Parkway, Increase gap times, traffic light alternation to allow residents time for movement, bike path for 278	7/31/2015 12:34 PM
4	The traffic situation is the one drawback to where I live (Mariner's Cove). I am a cautious driver and frequently go down 278 to make a u-turn rather than try to cross the median to go to Bluffton. It's so bad I stay home on Saturday because I can't safely turn left into MC because of oncoming tourist traffic. Also visibility of oncoming cars coming around curve is a problem. I expect flyover is going to make it worse.	7/30/2015 12:26 PM
5	A traffic light at the base of the Bridge would solve the problems for our community and Windmill Harbor	7/28/2015 4:39 PM

Q16 Please provide your contact information.

Answered: 9 Skipped: 5

Answer Choices	Responses	
Name	100.00%	9
Company	0.00%	0
Property Address	100.00%	9
Mailing Address (if different than above)	44.44%	4
City/Town	100.00%	9
State/Province	100.00%	9
ZIP/Postal Code	100.00%	9
Country	0.00%	0
Email Address	100.00%	9
Phone Number	0.00%	0

#	Name	Date
1	Janet W. Miller	8/12/2015 4:20 PM
2	MAUREEN P SMITH	8/12/2015 2:57 PM
3	Natasha Seguin	8/12/2015 2:18 PM
4	alyce sewell	8/12/2015 2:05 PM
5	Margo Merchant	8/5/2015 3:02 PM
6	Michael Abbate	7/31/2015 12:34 PM
7	Judith Hillis	7/30/2015 12:26 PM
8	James and Sharon Rusin	7/28/2015 8:52 PM
9	Lourdes Ludlow	7/28/2015 4:39 PM
#	**Company**	**Date**
	There are no responses.	
#	**Property Address**	**Date**
1	102 Mariner's Cove	8/12/2015 4:20 PM
2	205 MARINERS COVE	8/12/2015 2:57 PM
3	2 William Hilton Parkway Unit 204	8/12/2015 2:18 PM
4	2 william hilton parkway #apt 305	8/12/2015 2:05 PM
5	2 William Hilton Pkwy	8/5/2015 3:02 PM
6	402 Mariners Cove Club	7/31/2015 12:34 PM
7	2 William Hilton Parkway, Apt. 104	7/30/2015 12:26 PM
8	301 Mariners Cove	7/28/2015 8:52 PM
9	505 Mariners Cove Club	7/28/2015 4:39 PM
#	**Mailing Address (if different than above)**	**Date**

1	5123 45th ST NW	8/12/2015 4:20 PM
2	2 WILLIMA HILTON PKWY #205	8/12/2015 2:57 PM
3	PO Box 22268	8/12/2015 2:18 PM
4	206 Mariners Cove Club	8/5/2015 3:02 PM
#	**City/Town**	**Date**
1	Washington	8/12/2015 4:20 PM
2	HILTON HEAD ISLAND	8/12/2015 2:57 PM
3	Hilton Head Island	8/12/2015 2:18 PM
4	hilton head	8/12/2015 2:05 PM
5	Hilton Head Island	8/5/2015 3:02 PM
6	Hilton Head Island	7/31/2015 12:34 PM
7	Hilton Head Is.	7/30/2015 12:26 PM
8	Hilton Head Island	7/28/2015 8:52 PM
9	HHI	7/28/2015 4:39 PM
#	**State/Province**	**Date**
1	DC	8/12/2015 4:20 PM
2	sc	8/12/2015 2:57 PM
3	SC	8/12/2015 2:18 PM
4	south carolina	8/12/2015 2:05 PM
5	SC	8/5/2015 3:02 PM
6	SC	7/31/2015 12:34 PM
7	sc	7/30/2015 12:26 PM
8	SC	7/28/2015 8:52 PM
9	SC	7/28/2015 4:39 PM
#	**ZIP/Postal Code**	**Date**
1	20016	8/12/2015 4:20 PM
2	29926	8/12/2015 2:57 PM
3	29925	8/12/2015 2:18 PM
4	29926	8/12/2015 2:05 PM
5	29926	8/5/2015 3:02 PM
6	29926	7/31/2015 12:34 PM
7	29926	7/30/2015 12:26 PM
8	29926	7/28/2015 8:52 PM
9	29926	7/28/2015 4:39 PM
#	**Country**	**Date**
	There are no responses.	
#	**Email Address**	**Date**
1	millerkontos@yahoo.com	8/12/2015 4:20 PM
2	travelsmith@hargray.com	8/12/2015 2:57 PM
3	natasha@arbornature.com	8/12/2015 2:18 PM
4	biskers2@gmail.com	8/12/2015 2:05 PM

5	margo.merchant@gsa.gov	8/5/2015 3:02 PM
6	mike.abbate@hotmail.com	7/31/2015 12:34 PM
7	judithhillis@hargray.com	7/30/2015 12:26 PM
8	SharonRusin@yahoo.com	7/28/2015 8:52 PM
9	bola@roadrunner.com	7/28/2015 4:39 PM
#	**Phone Number**	**Date**
	There are no responses.	

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I

Appendix I - Cost Estimates

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COST ESTIMATION SPREADSHEET

11/20/15

PROJECT
Jenkins Island Access Management - Concept Alternate #1

ROADWAY

Description	AMOUNT	UNIT	Cost per Unit $ / UNIT	Cost
HMA SURFACE COURSE	9480	TON	$ 62.00	$ 587,760.00
HMA INTERMEDIATE COURSE	5850	TON	$ 65.00	$ 380,250.00
HMA BASE COURSE	13170	TON	$ 68.00	$ 895,560.00
LIQUID ASPHALT BINDER PG64-22	1360	TON	$ 675.00	$ 918,000.00
2' CURB & GUTTER	1850	LF	$ 20.00	$ 37,000.00
ASPHALT PAVEMENT REMOVAL	3420	SY	$ 15.00	$ 51,300.00
CONCRETE ISLANDS	200	SY	$ 90.00	$ 18,000.00
			Sub-Total:	$ 2,887,870.00
ASSUME SUBTOTAL ACCOUNTS FOR 45% OF ROADWAY COST			**ROADWAY-Total:**	$ 6,417,488.89

BRIDGES & STRUCTURES

Description	AMOUNT	UNIT	Cost per Unit $ / UNIT	Cost
RETAINING WALLS	550.00	LF	$ 550.00	$ 302,500.00
				$ -
			BRIDGE/STRUC.-Total:	$ 302,500.00

CONSTRUCTION COST (ROADWAY + BRIDGE) $ 6,800,000.00

MISCELLANEOUS

CEI COST (15% OF CONSTRUCTION COST)	$ 1,000,000.00
ENGINEERING COST (10% OF CONSTRUCTION COST)	$ 700,000.00
RIGHT-OF-WAY COST	$ 1,159,335.00
UTILITY RELOCATION COST (15% OF CONSTRUCTION COST)	$ 1,000,000.00

TOTAL SUBTOTAL	$ 10,659,335.00
20% CONTINGENCIES	$ 2,100,000.00

TOTAL ESTIMATED CONSTRUCTION COST (2015) $ 12,800,000.00

TOTAL ESTIMATED CONSTRUCTION COST (2017) $ 13,900,000.00

NOTE:
1.) Assumes overlay of existing US 278 within project limits
2.) Assumes 4 foot paved shoulders along US 278 (within project limits)
3.) Paving courses assumed from SCDOT Proj ID 0041808 (2014)
4.) 2017 estimate assumes a 4% inflation per year
5.) Estimate does not include costs for wetland permitting, mitigation, etc.

11/20/15

PROJECT

Jenkins Island Access Management - Concept Alternate #1

R/W Acquisition Costs

	Price/SF	Total (SF)		
Right-of-Way	$ 12.00	75289	$	903,468.00
Damages/Contigencies (25% of Subtotal)			$	225,867.00
	Price/Parcel	Parcel #		
Acquisition	$ 5,000.00	6	$	30,000.00
Total			$	1,159,335.00

NOTE:

1.) Total r/w cost assumes no cost for State, P.O.A or Town-owned property acquisition (dedication assumed)

2.) Acquisition cost includes all individual parcels that would require acquisition

COST ESTIMATION SPREADSHEET

11/20/15

PROJECT
Jenkins Island Access Management - Concept Alternate #2A

ROADWAY

Description	AMOUNT	UNIT	Cost per Unit $ / UNIT	Cost
HMA SURFACE COURSE	5770	TON	$ 62.00	$ 357,740.00
HMA INTERMEDIATE COURSE	1790	TON	$ 65.00	$ 116,350.00
HMA BASE COURSE	7230	TON	$ 68.00	$ 491,640.00
LIQUID ASPHALT BINDER PG64-22	720	TON	$ 675.00	$ 486,000.00
2' CURB & GUTTER	820	LF	$ 20.00	$ 16,400.00
ASPHALT PAVEMENT REMOVAL	1852	SY	$ 15.00	$ 27,780.00
CONCRETE ISLANDS	90	SY	$ 90.00	$ 8,100.00
TRAFFIC SIGNALS	2	EA	$ 150,000.00	$ 300,000.00
			Sub-Total:	$ 1,804,010.00
ASSUME SUBTOTAL ACCOUNTS FOR 45% OF ROADWAY COST			**ROADWAY-Total:**	$ 4,008,911.11

BRIDGES & STRUCTURES

Description	AMOUNT	UNIT	Cost per Unit $ / UNIT	Cost
	0.00			$ -
				$ -
			BRIDGE/STRUC.-Total:	$ -

CONSTRUCTION COST (ROADWAY + BRIDGE)	**$ 4,100,000.00**

MISCELLANEOUS

CEI COST (15% OF CONSTRUCTION COST)	$ 600,000.00
ENGINEERING COST (10% OF CONSTRUCTION COST)	$ 400,000.00
RIGHT-OF-WAY COST	$ -
UTILITY RELOCATION COST (15% OF CONSTRUCTION COST)	$ 600,000.00
TOTAL SUBTOTAL	$ 5,700,000.00
20% CONTINGENCIES	$ 1,100,000.00

TOTAL ESTIMATED CONSTRUCTION COST (2015) $ 6,800,000.00

TOTAL ESTIMATED CONSTRUCTION COST (2017) $ 7,400,000.00

NOTE:
1.) Assumes overlay of existing US 278 within project limits
2.) Assumes 4 foot paved shoulders along US 278 (within project limits)
3.) Paving courses assumed from SCDOT Proj ID 0041808 (2014)
4.) 2017 estimate assumes a 4% inflation per year
5.) Estimate does not include cost for wetland permitting, mitigation, etc.

11/20/15

PROJECT

Jenkins Island Access Management - Concept Alternate #2A

R/W Acquisition Costs

	Price/SF	Total (SF)	
Right-of-Way	$ 12.00	0	$ -
Damages/Contigencies (25% of Subtotal)			$ -
	Price/Parcel	Parcel #	
Acquisition	$ 5,000.00	0	$ -
Total			$ -

NOTE:

1.) Total r/w cost assumes no cost for State, P.O.A, or Town-owned property acquisition (dedication assumed)

2.) Acquisition cost includes all individual parcels that would require acquisition