Road Safety Review

SC 700 (Maybank Highway)

Charleston County, SC

South Carolina
Department of Transportation

CHARLESTON
COUNTY
SOUTH CAROLINA

May 6, 2019

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1.0 Introduction

1.1 Objective

The objective of this road safety review is to identify existing potential safety hazards specific to pedestrian and bicyclist activity that exist throughout the corridor and to provide recommendations for improvements. The improvements recommended include short-term improvements, such as pavement markings and maintenance activities, and long-term improvements, such as median construction and access management.

1.2 Background

The section of SC 700 (Maybank Highway) selected for the road safety review was based on the crash frequency and severity involving pedestrians and bicyclists on the corridor in recent years. The section reviewed begins at Woodland Shores Road / Wappoo Drive and continues east to Wappoo Creek Drive. The segment is approximately 0.65-mile in length. The figures below provide an overview of the corridor location.

Figure 1 – Location Map

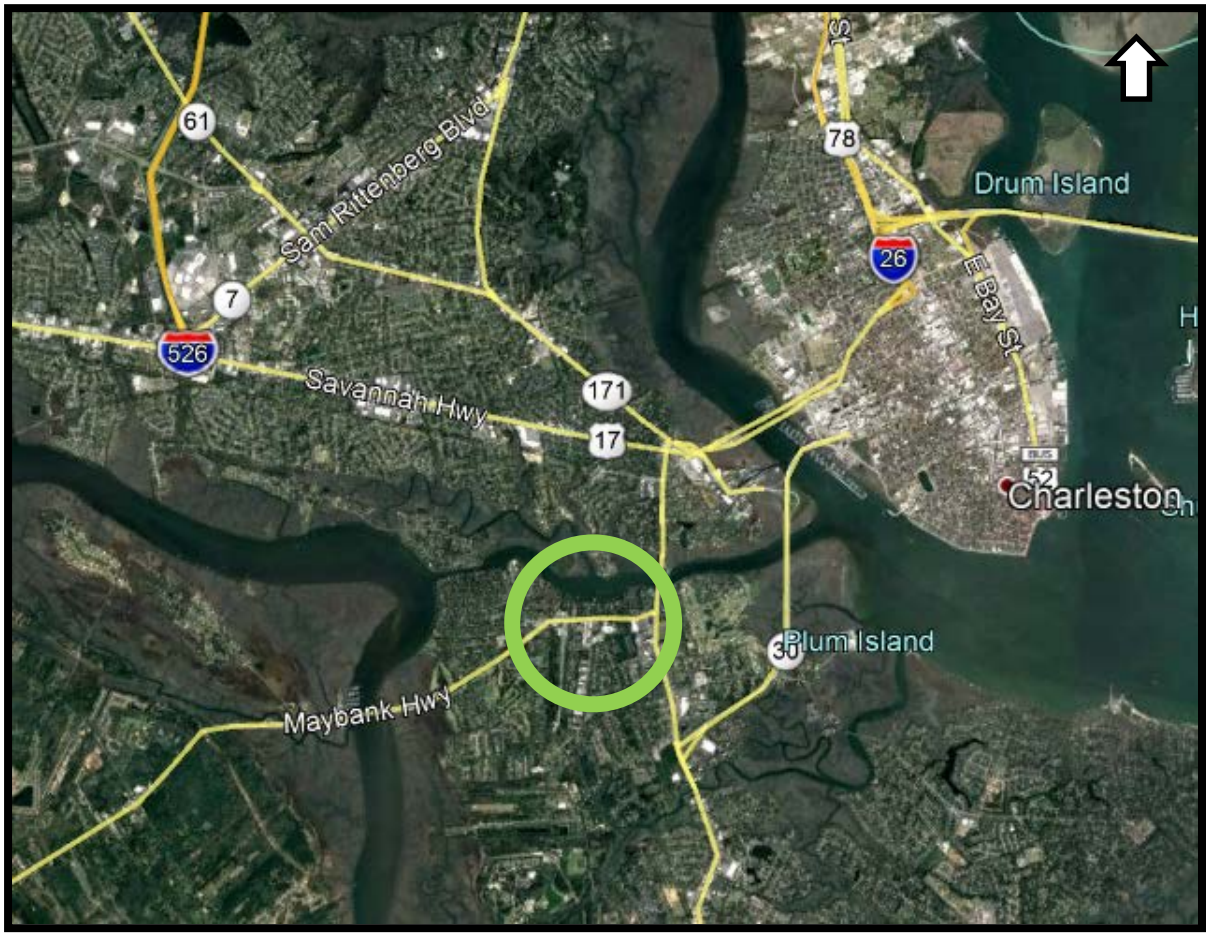


Figure 2 – Corridor Limits

The segment under review is mixed use, with both commercial and residential land uses. Development is well established, though the area has recently experienced and continues to experience revitalization with an increase in density and interaction between the commercial and residential properties. The roadway cross section is a five-lane section. Due to the mixed-use nature of the area, traffic volumes are heavy throughout the day; however, commuter patterns exist on the corridor that increases congestion during peak times. Commuters primarily travel east on Maybank Highway toward the City of Charleston in the morning, and then travel the reverse pattern during the evening peak. The speed limit on this section of Maybank Highway is 40 mph.

The road safety review included participants representing multiple government agencies and community partners. A list of the attendees for the field review conducted on February 26, 2019 is provided below. All participants attended the pre-meeting in the field, while some were unable to attend the entire corridor walk-through.

- Eric Adams, Charleston County
- Jenny Costa Honeycutt, Charleston County Council
- Keith Benjamin, City of Charleston
- Matt Wojslawowicz, City of Charleston Police Department
- Carol Jackson, City of Charleston Council
- Josh Johnson, SCDOT District Six
- Katie Zimmerman, Charleston Moves
- Savannah Brennan, Charleston Moves
- Troy Miller, Riverland Terrace Neighborhood Association

2.0 Corridor Data Review

2.1 Traffic Volume Data

The nearest SCDOT count station on Maybank Highway is located at the east end of the review segment, near Wappoo Creek Drive. The AADT data at this count station is provided in the below table. A review of the AADT data indicates traffic volumes increased approximately 12 percent between 2013 and 2017, or three percent per year. The count station suggests declining volumes through 2016 with a sharp increase in 2017, but this is likely a correction in the data after several years of estimated count data. It is expected that the corridor has experienced constant growth over the last several years.

Table 1 – AADT Count Data (Station 271)

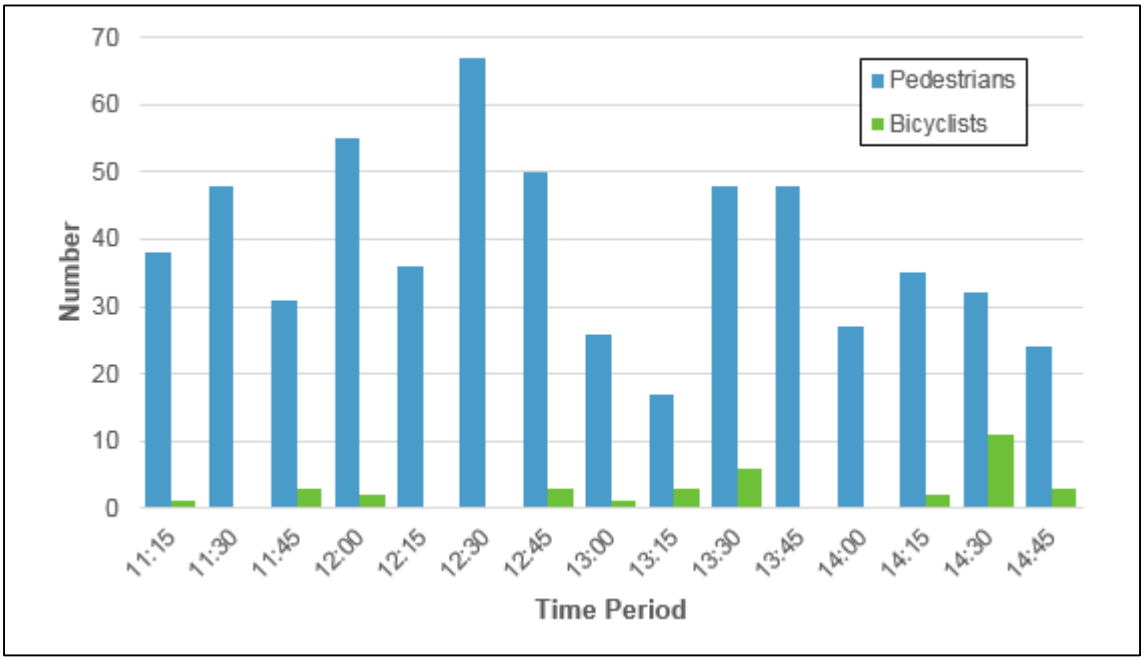
2013	*2014*	*2015*	*2016*	*2017*
26,300	25,900	23,800	23,600	29,500

2.2 Pedestrian and Bicyclist Data

A field observation was conducted on Sunday, February 24, 2019 to note specific pedestrian activity in the area. It was observed that patrons were frequenting multiple establishments, sometimes crossing the road multiple times in doing so. Some of this activity is related to parking availability, while some is based on the convenience of crossing the roadway on foot rather than relocating a vehicle.

Additionally, Charleston Moves conducted bicycle and pedestrian counts on Sunday, March 24 between 11:00 a.m. and 3:00 p.m. while the local farmers' market was in operation as well as Wednesday, March 27 between 6:30 p.m. and 10:30 p.m. The data was collected at the intersection with Woodland Shores Road, on Maybank Highway between South Gevert Drive and Stefan Drive (0.1-mile segment), and at the intersection with Wappoo Creek Drive. Of these three areas, the segment of Maybank Highway between South Gevert Drive and Stefan Drive experienced the highest pedestrian and bicyclist demand, with the most activity occurring during the Sunday count. A graph showing the frequency of pedestrian and bicyclist crossings broken into 15-minute intervals is provided in Figure 3. As can be seen from the figure, several time periods experienced greater than 40 pedestrian crossings. While these crossings were scattered over a 0.1-mile segment, it may be possible to condense a large portion of these crossings to a single location with enhanced safety measures. Possible improvements are discussed in a later section of this report. The complete set of pedestrian and bicyclist data provided by Charleston Moves is included in the Appendix.

Figure 3 – Sunday, March 24 Activity, S. Gevert Dr. to Stefan Dr.



2.3 Crash Data

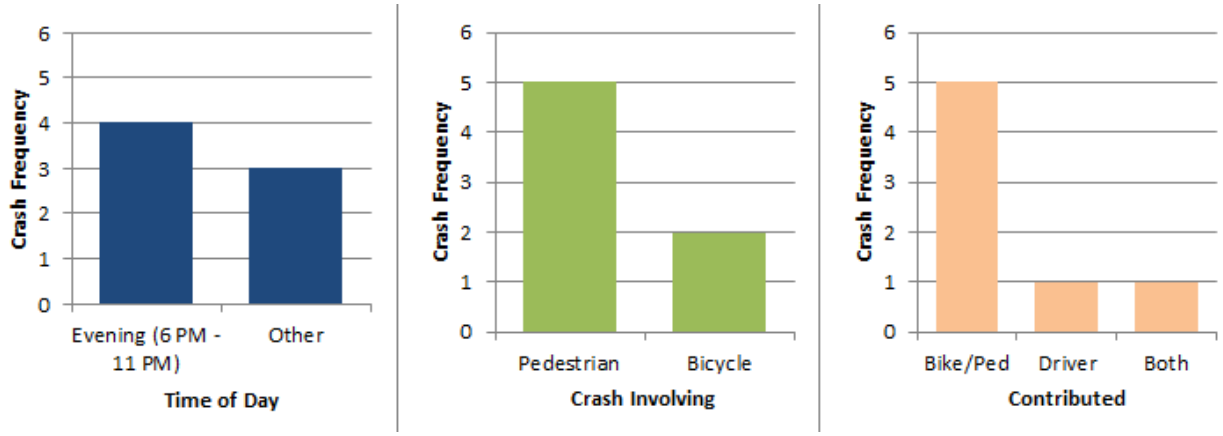
Pedestrian and bicyclist crash data was collected by SCDOT for the time period between January 1, 2014 and June 30, 2018. In addition, a crash report occurring on January 29, 2019 was provided by the local police department. The crash data is summarized in the table and figure below. Note that crashes not involving pedestrians or cyclists were excluded for this particular review.

Table 2 – Crash Summary Table

Date	*Time*	*Severity*	*Bike/Ped*	*Contributed*	*Cause*
3/11/2014	6:25	1	Ped	Driver	FYRW
5/5/2014	8:18	0	Bike	Bike	Improper lane use
12/13/2014	21:20	1	Bike	Both	Inattention
1/26/2016	18:53	1	Bike	Bike	FYRW
11/5/2016	11:55	2	Ped	Ped	Improper crossing
12/26/2016	21:23	4	Ped	Ped	Improper crossing
1/29/2019*	20:34	4	Ped	Ped	Not provided

*Unofficial crash report provided by local police department and not Department of Public Safety

Figure 4 – Crash Statistics Summary



As seen in the above crash summary table and graph, a total of seven reported crashes occurred during the review time period. More crashes occurred during the evening hours (6 – 11 PM) than during the rest of the day. Five crashes were reported to involve pedestrians, while two involved bicyclists. Five of the crash reports listed the pedestrian or bicyclist as contributing to the crash, one listed the driver, and one listed both the bicyclist and the driver. Of the seven reported crashes, two of the pedestrian crashes resulted in a fatality. The remainder of the crashes involved minor injuries or property damage only. The figure below provides locations that the crashes occurred and their severity.

Figure 5 – Crash Type and Severity

2.4 Recent and Planned Improvements

Maybank Highway is planned to have a microsurfacing pavement preservation treatment applied in the summer or fall of 2019. This treatment may allow pavement marking treatments identified in this report to be applied as part of that project.

Upon completion of the initial field review for this study, Dominion Energy, formerly South Carolina Electric & Gas (SCE&G), was contacted regarding upgrading street lighting in the area. Dominion Energy has replaced three fixtures with brighter fixtures and installed an additional fixture on the wooden power pole approximately 300 feet east of the intersection with Woodland Shores Road.

3.0 Findings and Recommendations

3.1 Positive Findings

The following were identified as positive measures and features that are already in place within the study area that enhance pedestrian and bicycle safety:

- Sidewalks exist along both sides of Maybank Highway for the entire length of the corridor. The section of sidewalk in front of "The Standard" development west of Fleming Road has been widened to eight feet.
- Some crosswalks with countdown pedestrian signals are in place at the signalized intersections with Woodland Shores Road / Wappoo Drive and Wappoo Creek Drive.
- The residents and business community have shown interest in improvements to the corridor that may include access management for the benefit of safety.
- Overhead lighting is present in some areas of the corridor.

3.2 Potential Corridor Improvements

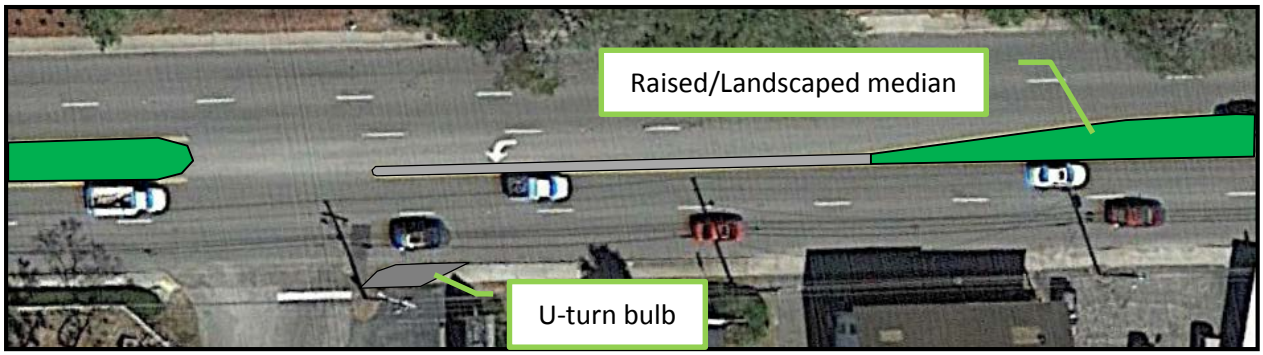
Some improvements apply to multiple locations on the corridor. For clarity on specific recommendations related to intersections, intersection recommendations will be addressed in the next section of this report. Additionally, there are some recommendations that will provide benefit to the corridor as a whole. Short-term improvements include the following:

- Reclaim the full sidewalk width in locations where grass and dirt have encroached into the sidewalk and narrowed the walking area.
- Repair sections of sidewalk that have become severely cracked and unlevel.

The cross-section of the corridor was discussed to determine if a change in lane widths would allow for the accommodation of designated bike lanes along Maybank Highway. However, it was determined that the existing roadway width (curb to curb) is not sufficient to provide

designated bike lanes through restriping alone. The current roadway cross section includes 15-ft outside lanes, 11-ft inside lanes, and a 12-ft two-way left-turn lane (TWLTL), for a total of 64 feet between curbs. The minimum lane width that can be considered for the corridor is 11-ft through lanes, a 12-ft TWLTL, and 5-ft bike lanes, for a total of 66 feet. Therefore, the existing roadway width cannot accommodate the minimum lane widths to install bike lanes. One alternative to achieving the necessary width to include bike lanes on the corridor is to eliminate the TWLTL by installing a raised median narrower than 12 feet with exclusive turn lanes and median breaks at key intersections. At these intersections, the roadway would require widening to provide the width for a 3-ft minimum median adjacent to the turn lane and 11-ft minimum left-turn/U-turn lane. Additionally, small U-turn bulbs may need to be provided to accommodate the design vehicle due to the raised median preventing left turns at other locations. A concept sketch of this treatment is shown in Figure 5 below. Note that the revised lane widths and bike lanes are not shown in this figure.

Figure 6 – Median and Left-turn/U-turn Treatment



Another alternative to provide improved bicycle facilities is the construction of a multi-use path. This may be achieved with or without the construction of a raised median on Maybank Highway. To achieve a multi-use path of a minimum ten feet in width (12 feet preferred), the existing sidewalk could be widened, depending upon the ability to purchase Right-of-Way where needed and any utility impacts. Alternatively, the curb line(s) may be shifted toward the center of the roadway, narrowing the outside lanes in order to create greater width within the Right-of-Way that may be used for a wider sidewalk or multi-use path on one or both sides of the roadway. Reducing the outside lanes to 12 feet, the inside lanes to 11 feet, and retaining the 12-feet TWLTL would result in six feet of additional space on one side of Maybank Highway, but would result in changing the crown of the roadway. Shifting the curb line(s) and roadway crown would have significant drainage impacts; therefore, an alternatives analysis would be required to determine the preferred option while considering available budget.

Regardless of the determination to revise the cross section of the roadway to provide bike lanes or a multi-use path, a raised median could benefit the corridor in multiple ways. While vehicular crash data was not evaluated as part of this review, over 30 full-access driveways and intersections exist in this 0.65-mile segment. A raised median, which could also include landscaping for beautification, would provide access management along the corridor to limit the number of vehicular conflict points.

In addition to access management for the corridor, raised medians can provide a refuge for pedestrian crossings to occur in two stages. This allows the pedestrian to choose an adequate gap in traffic in one direction, wait in a refuge area within a raised median, and then cross the remaining lanes when an adequate gap is provided in that direction. This also limits the pedestrian's exposure time to traffic. A pedestrian crossing two 11-ft lanes (total of 22 feet) at 3.5 feet per second will take just over six seconds to cross. With a raised median refuge, two separate six-second gaps in traffic can be selected. A pedestrian attempting to cross the entire 62-ft five-lane section at the same speed will take nearly 18 seconds to cross while being exposed to traffic the entire time. Additionally, because pedestrians will rarely find a gap in traffic that size, they may attempt a two-stage crossing by waiting in the painted median. This presents a safety concern due to the lack of physical barrier to deter adjacent traffic from entering the median as well as issues created with traffic from two directions using the median as a center turn lane.

When considering the installation of raised medians, they must be installed such that they do not present a hazard to the driver or a false sense of security to a pedestrian waiting within the refuge. Therefore, the medians should terminate at intersections and it is preferred that they be several hundred feet long, at minimum. Shorter raised medians installed within TWLTLs will affect driver expectancy, and vehicles will tend to clip the median noses, causing a hazard to the driver. Additionally, short medians with a pedestrian refuge would not provide a sufficient distance between the pedestrian and the oncoming vehicle in the event that a vehicle strikes the median nose, therefore providing the pedestrian a greater sense of safety from oncoming traffic than actually exists. Finally, when determining the proper location for a median that will provide a pedestrian refuge, pedestrian demand should be considered. A median refuge and pedestrian crosswalk will be less utilized if it is not located within an area where the pedestrian demand is present. Two examples of possible median locations for the purpose of providing a pedestrian refuge and crosswalk are shown below.

Figure 7 – Median with Pedestrian Refuge (Option A)

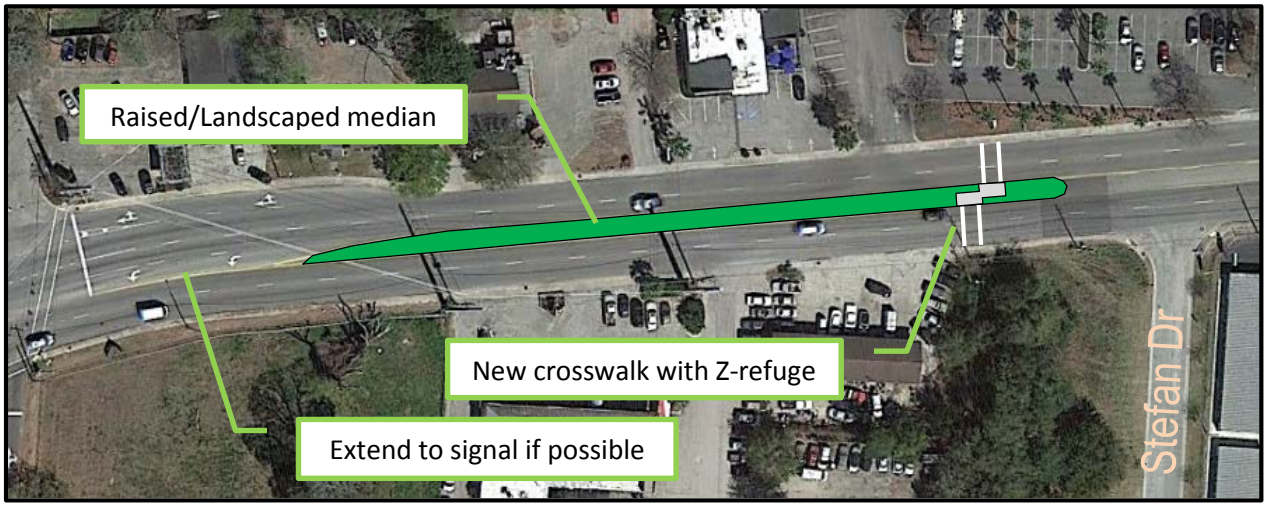
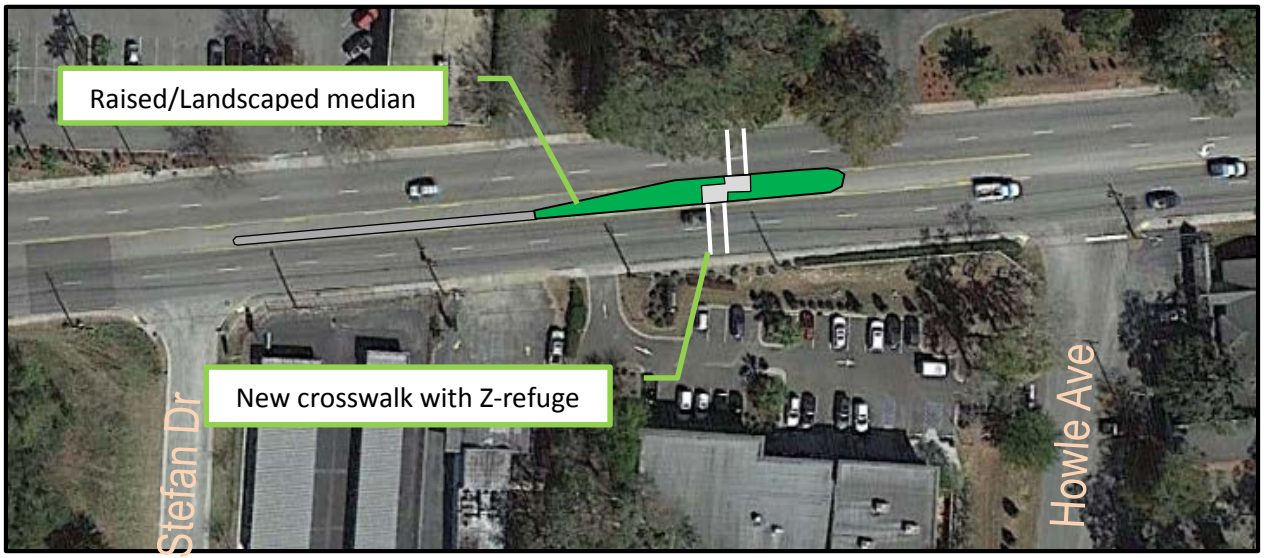


Figure 8 – Median with Pedestrian Refuge (Option B)



The two options shown in the above figures are examples of median locations with a pedestrian refuge where pedestrian demand is known to exist based on field observations and the crash reports discussed earlier. Some of the advantages and disadvantages to each location are listed in the table below.

Table 3 – Median Options Summary

	Advantages	*Disadvantages*
Option A	• Provides more direct access between densest portion of commercial development	• If median not extended to signal, undesirable U-turns may be made • Location is only 550 feet from existing traffic signal to west, therefore providing less distribution of crossing locations
Option B	• Location is 1,000 feet from existing traffic signal to west, therefore more evenly distributing crossing locations	• Location is further from densest portion of commercial development • Residential property to north may have difficulty using paved median to east

The above options are meant to be representative of possible median locations, as there may be additional options to be considered. Corridor master planning, property redevelopment, and pedestrian demand are some factors to consider when selecting a median location. In addition, when designing a median and crosswalk location, fencing may be desired within the median to encourage crossing at the marked crosswalk. Maintenance of the fencing and sight distance from adjacent driveways are factors to consider when determining the need for fencing. At a minimum, the crosswalk should include pedestrian warning signs; however, enhanced devices such as Rectangular Rapid Flashing Beacons (RRFBs) may be considered with the installation of the crosswalk. These devices require an engineering report and interim approval from the Federal

Highway Administration (FHWA) for installation. Retroreflective strips may also be considered for the sign posts or additional delineators or Retroreflective Raised Pavement Markers (RRPMs) installed on the median.

Overhead lighting exists on the corridor in some locations; however, it was noted during the field review that some fixtures may have fallen and not been replaced due to the sporadic placement of fixtures in areas. The City of Charleston contacted Dominion Energy to request replacement of older lighting with new LED fixtures and to consider increasing the amount of lighting. Three fixtures have been replaced with brighter fixtures and an additional fixture has been installed on the wooden power pole approximately 300 feet east of the intersection with Woodland Shores Road. There is currently no timeline or commitment for adding or upgrading any further overhead lighting fixtures on the corridor. The installation or improvement of overhead lighting may increase pedestrian and bicyclist safety under dark conditions.

As part of this review, a speed study was conducted on this segment of Maybank Highway to determine the appropriate speed limit. The speed study indicated that the existing 40 mph speed limit is appropriate for the roadway; however, the study found that 80 percent of drivers were exceeding the posted speed limit. When feasible, enforcement of the existing speed limit may increase compliance and lower the prevailing travel speed on the roadway. The speed study report is provided in the Appendix. As recommendations from this report are implemented, it is recommended that updated speed studies be conducted when appropriate to determine the effect on travel speed and whether a change to the posted speed limit is justified.

3.3 Potential Intersection Improvements

Several specific potential intersection improvements were noted at intersections along the corridor. The potential improvements are listed below. Some improvements can be implemented in the near future, while others must be considered as development continues or funding becomes available.

Maybank Highway & Woodland Shores Road

- Upgrade pedestrian crosswalks to high-visibility ladder-style or stamped asphalt. SCDOT will install a ladder-style crosswalk across Maybank Highway in the upcoming microsurfacing project and the City of Charleston will maintain the crosswalk markings after completion.
- Consider a leading pedestrian interval (also known as advance pedestrian signal) if determined feasible and desirable by the City of Charleston. Consider overhead R11-15 “Yield to Pedestrians” signs where turning vehicles are observed conflicting with pedestrians or R10-11a “No turn on red” signs if those conflicts are observed with vehicles turning right on red.
- When southeast quadrant develops, evaluate realignment of crosswalk across Maybank Highway to be closer to 90 degrees, aligning with future development sidewalk.

- Consider eliminating one approach to the traffic signal by installing a cul-de-sac on the north leg of Woodland Shores Road or on Wappoo Drive. This would require a traffic study and public involvement, but would reduce intersection complexity and delay for pedestrians.
- Install signalized crosswalks across the north and west legs of the intersection. This would require closure or reduction of the gravel parking for the business on the northwest corner of the intersection. A high-level concept of this improvement is shown here (right).

Maybank Highway & Stefan Drive

- Install a crosswalk across Stefan Drive. Relocate the stop bar to four feet behind the new crosswalk. Stefan Drive is not SCDOT-maintained.

Maybank Highway & Howle Avenue

- Install a crosswalk across Howle Avenue. Relocate the stop bar to four feet behind the new crosswalk.

Maybank Highway & Fleming Road

- Consider a new traffic signal, when warranted. Fleming Road is a candidate for signalization based on the current spacing from nearby traffic signals; however, prior studies have indicated a signal is not warranted. An agreement exists between the City of Charleston and "The Standard" development to have the intersection studied in the near future to determine if a traffic signal is warranted. If justified and approved by SCDOT, the developer would be responsible for signal installation. This agreement is valid for five years from the date of the approved Planned Use Development (PUD) agreement, which was approved on December 20, 2016 by Charleston City Council.
- Widen Fleming Road to provide left- and right-turn lanes, especially if a traffic signal is justified in the future.
- Regardless of signalization, install a crosswalk across Fleming Road. Relocate the stop bar to four feet behind the new crosswalk.

Maybank Highway & Wappoo Creek Drive

- One of the existing pedestrian signal heads displays the "walk" signal with a countdown displayed. Revise pedestrian signal to display "walk" signal followed by "flashing don't walk" with countdown displayed only during the "flashing don't walk" interval.
- Install the missing detectable warning surface on the southwest corner of the intersection. This corner was under construction by the shopping center redevelopment during the field review.

- Relocate stop bar on shopping center approach to four feet minimum behind sidewalk/crosswalk. This will need to be coordinated with the property owner.
- Consider a leading pedestrian interval (also known as advance pedestrian signal) if determined feasible and desirable by the City of Charleston. Consider overhead R11-15 "Yield to Pedestrians" signs where turning vehicles are observed conflicting with pedestrians or R10-11a "No turn on red" signs if those conflicts are observed with vehicles turning right on red.
- Consider high visibility crosswalks. These will not be installed in the microsurfacing project, but may be considered by the City of Charleston at a later date.
- Install a new crosswalk across the west intersection leg. This will require modification or closure of the truck access to the rear of the shopping center.

4.0 Summary and Responsible Parties

4.1 Safety Review Summary

The 0.65-mile segment of SC 700 (Maybank Highway) between Woodland Shores Road / Wappoo Drive and Wappoo Creek Drive was selected for a road safety review based on the crash frequency and severity involving pedestrians and bicyclists on the corridor in recent years. The nearby SCDOT traffic count station indicates that this section of Maybank Highway carries nearly 30,000 vehicles per day. A review of the AADT data indicates growth of approximately three percent per year occurred between 2013 and 2017, for a total of 12 percent growth over five years. A review of the pedestrian and bicyclist crash history revealed that crashes have occurred during various times of the day, but over half of the crashes took place between 6:00 p.m. and 11:00 p.m. There was one fatality recorded within the study segment from 2014 through 2018, with one additional fatality occurring in January 2019.

Some positive findings were noted during the on-site field visit; however, numerous recommendations were developed that may improve the pedestrian and bicyclist crash rate on this segment of roadway. Some recommendations include low-cost improvements such as general maintenance items and pavement marking improvements. There are also long term improvements that should be considered, such as the installation of a raised median for the purposes of access management and providing a pedestrian refuge at a designated crossing point.

4.2 Responsible Parties

To summarize and clarify the responsible parties for the proposed improvements, recommendations are summarized in the table below. The timeframe for the proposed improvements is also estimated. For the purposes of this report, short term improvements are expected to be completed within one year and long term improvements are expected to take at least one year to complete. Identification of a funding source will be necessary for long term improvements, as no specific funding source is currently identified. Long term improvements may also be revised over time based on development trends and funding opportunities.

Table 4 – Recommendations and Responsible Parties

Recommendation	*Responsible Party*	*Estimated Timeframe*
Reclaim existing sidewalk width by removing vegetation and sand buildup	SCDOT	Short term
Repair severely cracked portions of the existing sidewalk	SCDOT	Short term
Install (SCDOT) and maintain (City of Charleston) ladder-style crosswalk at Woodland Shores Road intersection	SCDOT, City of Charleston	Short term
Install crosswalks where missing across side street approaches	SCDOT	Short term
Adjust pedestrian signal operation at existing signals as necessary	City of Charleston	Short term
Install traffic signal at Fleming Road, when warranted	To Be Determined	Long term
Provide geometric improvements at Fleming Road to support efficient signal operations	To Be Determined	Long term
Provide exclusive bike lanes or a multi-use path along Maybank Highway	To Be Determined	Long term
Install raised median for access management with pedestrian refuge and crosswalk at strategic location	To Be Determined	Long term
Install/upgrade overhead lighting fixtures	To Be Determined	Long term
Install additional crosswalks at existing signalized intersections	To Be Determined	Long term
Conduct updated speed studies at the completion of long term geometric changes	SCDOT	Long term
Enforce existing 40 mph speed limit when possible	City of Charleston	Ongoing

4.3 Funding Opportunities

There are no funding sources currently identified for the long term improvements previously discussed; however, there are several known opportunities to pursue funding. Charleston County reserves a portion of the Transportation Sales Tax (TST) funds for annual allocation projects. These projects are requested by other local entities such as the City of Charleston or SCDOT and evaluated by Charleston County using objective criteria. Selection of a project depends upon current funding levels and the ranking of the project relative to other ongoing projects and new project requests. Charleston County also manages funding through the County Transportation Committee (CTC). This funding source follows a similar selection process to the TST funding. Projects using TST funds are eligible for purchasing Right-of-Way, while CTC projects are not.

Two other funding sources include the City of Charleston or Berkeley-Charleston-Dorchester Council of Governments (BCDCOG). Funding would need to be requested and identified for a project, and may require reassigning funds from another source.

SCDOT has very limited funding options for long term improvements discussed in this report. Currently, SCDOT does not fund capacity or operations improvement projects. This corridor is not currently eligible for funding through the Highway Safety Improvement Program (HSIP). One potential source of funding for signal-related improvements is the SCDOT signal maintenance fund. This annual funding can be used to upgrade traffic signals, but not to eliminate or condense driveways.

Appendix

Charleston Moves Maybank Bike/Ped Counts

Segment of Maybank Highway from North Gevert Drive to approximately Stefan Drive

3/24/2019 (3 hrs. 30 mins.)	11:17 am	11:32 am	11:47 am	12:02 pm	12:17 pm	12:32 pm	12:47 pm	1 pm	1:15pm	1:30 pm	1:45 pm	2 pm	2:15 pm	2:30pm	2:45 pm	Total
Female Bicyclist	0	0	2	1	0	0	1	1	2	2	0	0	1	2	2	14
Male Bicyclist	1	0	1	1	0	0	2	0	1	4	0	0	1	9	1	21
Female Pedestrian	23	23	15	28	23	36	29	13	8	29	26	17	17	16	13	316
Male Pedestrian	15	25	16	27	13	31	21	13	9	19	22	10	18	16	11	266
Dogs/Babies	3	0	3	2	0	2	5	0	3	6	10	1	5	4	0	44
TOTAL																661

3/27/2019 (4 hrs.)	6:30 pm	6:45 pm	7 pm	7:15 pm	7:30 pm	7:45 pm	**8 pm**	8:15 pm	8:40 pm	8:55 pm	9:10 pm	9:25 pm	9:40 pm	9:55 pm	10:10 pm	10:30 pm	Total
Female Bicyclist	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Male Bicyclist	0	0	0	0	0	1	0	0	0	0	0	1	3	0	0	0	5
Female Pedestrian	3	1	4	4	0	3	4	14	25	0	0	9	6	0	0	0	73
Male Pedestrian	1	2	9	4	12	14	16	19	29	0	0	12	7	9	2	0	136
Dogs/Babies	0	1	0	0	1	1	0	0	0	0	0	0	0	0	1	0	4
TOTAL																	222

Intersection of Woodland Shores Drive and Maybank Highway

3/24/2019 (1 hr. 45 mins.)	11:17 - 11:32 am	11:32 - 11:47 am	11:47 am - 12:02 pm	12:02 - 12:17 pm	12:17 - 12:32 pm	12:32 - 12:47 pm	12:47 - 1 pm	1:50 - 2:50 pm	Total
Female Bicyclist	0	0	1	0	1	1	2	*	5
Male Bicyclist	0	2	0	1	3	1	1	*	8
Female Pedestrian	33	31	27	31	44	35	27	*	228
Male Pedestrian	37	16	28	16	37	22	27	*	183
Dogs/Babies carried	4	7	1	6	2	10	6	*	36
TOTAL									460

3/27/2019 (2 hrs.)	6:30 - 6:45 pm	6:45 - 7 pm	7 - 7:15 pm	7:15 - 7:30 pm	7:30 - 7:45 pm	7:45 - 8 pm	8 - 8:15 pm	8:15 - 8:30 pm	8:45 - 10:30 pm	Total
Female Bicyclist	1	1	0	0	0	0	0	0	*	2
Male Bicyclist	0	0	0	0	1	0	0	0	*	1
Female Pedestrian	2	6	2	0	1	2	6	1	*	20
Male Pedestrian	0	0	1	1	5	0	5	1	*	13
Other	1 golf cart	0	0	0	1 dog	0	0	0	*	2
TOTAL										38

Intersection of Wappoo Creek Drive and Maybank Highway

3/24/2019 (1 hr. 45 mins.)	11:17 - 11:32 am	11:32 - 11:47 am	11:47 am - 12:02 pm	12:02 - 12:17 pm	12:17 - 12:32 pm	12:32 - 12:47 pm	12:47 - 1 pm	**Total**
Female Bicyclist	0	1	0	0	0	2	1	4
Male Bicyclist	1	1	1	0	1	1	2	7
Female Pedestrian	2	0	0	1	1	4	4	12
Male Pedestrian	0	0	1	2	3	2	3	11
Other	0	0	0	0	0	moped on sidewalk	0	1
TOTAL								35

3/27/2019 (1 hr. 10 mins.)	7:05 - 8:15 pm
Female Bicyclist	1
Male Bicyclist	3
Female Pedestrian	4
Male Pedestrian	5
Other	0
TOTAL	13

*No official count, but movement tracked.

SC 700 (Maybank Highway) – Speed Limit Review

A speed study was conducted on Maybank Highway for the 40 mph section from Folly Road to Riverland Drive, to determine the appropriate speed limit for this section of road. This study consisted of a review of land use and development, a collision history analysis, and a vehicle radar sample to collect speed data. These elements were reviewed and used in combination to provide a comprehensive overview to determine the appropriate speed limit, with guidance from the Federal Highway Administration (FHWA) analysis program, USLIMITS2.

The study section is 1.5 miles in length and begins at Folly Road and terminates at Riverland Drive. Maybank Highway is a minor arterial road and consists of residential homes, businesses, and commercial shopping complexes. Due to road characteristics, the study section was divided into two zones. A speed study was conducted for each section with 100 vehicles sampled for each zone.

Zone 1 is 0.8 miles in length and extends from Folly Road to Woodland Shores Road. The posted speed limit in Zone 1 is 40 mph. This section of Maybank Highway has a 5-foot sidewalk on each side of the roadway. The total width of the roadway is 64-feet, with a 15-foot outside lane and 11-foot inside lane in each direction and a 12-foot two-way left-turn lane (TWLTL). Zone 1 has forty-two access points, of which thirty-four are driveways and eight are side streets. There are three traffic signals located in this study section. The 85th percentile speed, a statistical measure employed by engineers to determine what most prudent drivers find to be an appropriate and comfortable speed, was calculated to be 48 mph. Our study found that 80 percent of vehicles sampled exceeded the posted speed limit.

Zone 2 is 0.7 miles in length and extends from Woodland Shores Road to Riverland Drive. The posted speed limit in Zone 2 is 40 mph. Zone 2 has a 5-foot sidewalk on each side of the roadway. The sidewalk terminates at Golfview Drive. The total lane width and cross-section in Zone 2 is the same as Zone 1 until Golfview Drive, when it transitions to 12-foot outside lanes and 11-foot inside lanes in each direction with no median. Zone 2 has thirty access points, of which six are side streets and twenty-four are driveways. There are two traffic signals located in this study section. The 85th percentile speed was calculated to be 49 mph. Our study found that 85 percent of vehicles sampled exceeded the posted speed limit.

An analysis of the collision history was performed using information from the Department of Public Safety database. The review period was from January 2015 to June 2018. During this time period, there were 106 collisions for Zone 1 and 114 collisions for Zone 2. The top two collision types for the study sections were rear end and angle collisions. In Zone 1, there were thirty-two rear end collisions and forty-one angle collisions. In Zone 2, there were forty-four rear end collisions and thirty-one angle collisions.

Recommendations:

Based on the results of our study, roadside development, and guidance from USLIMITS2, it is not recommended to change the speed limit along Maybank Highway. The speed limit is appropriate for existing development and roadway characteristics.

S. Smalls
Reviewed By: AP 4/12/19
Checked By: [illegible] 4/11/2019