



Town of Hilton Head Island
**TOWN COUNCIL TOWN COUNCIL
WORKSHOP MEETING**
Tuesday, April 5, 2022
1:00 - 2:45 p.m.
AGENDA

The Town Council workshop will be held in-person at Town Hall in the Benjamin M. Racusin Council Chambers. The meeting can be viewed on the [Town's Public Meetings Facebook Page](#), the [Beaufort County Channel](#) and Spectrum Channel 1304.

1. **Call to Order**
2. **FOIA Compliance** Public notification of this meeting has been published, posted, and distributed in compliance with the South Carolina Freedom of Information Act and the requirements of the Town of Hilton Head Island.
3. **Workshop Discussion**
 - a. Discussion of the Beaufort County Council Adopted Resolution Regarding the Responses from Beaufort County to the Town Council Approved Recommendations on the William Hilton Parkway Gateway Corridor Project
4. **Adjournment**

Please note, a quorum of the Beaufort County Council may result if six (6) or more of their members are in attendance at this meeting



BEAUFORT COUNTY COUNCIL AGENDA ITEM SUMMARY

ITEM TITLE:
Recommend Approval of a resolution of Beaufort County Responses to Town of Hilton Head comments on the US 278 corridor traffic improvement project
MEETING NAME AND DATE:
March 28, 2022 County Council
PRESENTER INFORMATION:
Jared Fralix, Assistant County Administrator 5 minutes
ITEM BACKGROUND:
The US 278 Corridor Traffic Improvement Project is a Beaufort County project and is part of the 2018 Sales Tax program. The Town of Hilton Head submitted 26 public comments as prepared by MKSK seeking a response from SCDOT and Beaufort County.
PROJECT / ITEM NARRATIVE:
The project team provided responses to the Town of Hilton Head's comments on February 8, 2022. This resolution is for Beaufort County Council to endorse the responses already provided.
FISCAL IMPACT:
N/A
STAFF RECOMMENDATIONS TO COUNCIL:
N/A
OPTIONS FOR COUNCIL MOTION:
Motion to approve/deny resolution of Beaufort County Responses to Town of Hilton Head comments on the US 278 corridor traffic improvement project.

RESOLUTION 2022/ _____

**BEAUFORT COUNTY RESPONSES TO TOWN OF HILTON HEAD COMMENTS ON
THE US 278 CORRIDOR TRAFFIC IMPROVEMENTS PROJECT**

WHEREAS, the US 278 Corridor Traffic Improvements, further known as the “Project”, is a Beaufort County Project and is part of the 2018 Sales Tax program; and

WHEREAS, the Project is currently in the preliminary design stage and is working through the Environmental Assessment process; and

WHEREAS, separate from the design consultant for the Project, the Town of Hilton Head hired a land planning consultant, MKSK, to assist Town Council with evaluating the current design and to provide recommendations to enhance the Project; and

WHEREAS, as part of the Environmental Assessment process a preferred alternative for the Project was identified and presented at a public hearing held on July 22, 2021; and

WHEREAS, the Town of Hilton Head submitted 26 comments as prepared by MKSK seeking a response from SCDOT and Beaufort County; and

WHEREAS, SCDOT and Beaufort County provided direct responses to the Town’s comments on February 8, 2022. Many of the comments were incorporated into the refined preferred alternative as presented in the follow-up public information meeting held on March 3, 2022.

NOW THEREFORE, BE IT RESOLVED, that the Beaufort County Council hereby supports the responses provided by the Project team to Town of Hilton Head on the public comments previously submitted as prepared by MKSK so long as, within thirty (30) days of the date of this Resolution, the Town of Hilton Head provides the County Administrator with written commitment to the following:

- All enhancements desired to be added to the Project by the Town that are not currently incorporated into the refined preferred alternative (i.e. – specific signage, landscaping, public art, accent lighting, etc.) shall be paid for by the Town of Hilton Head. All Town sponsored enhancements shall be coordinated with the Project team to ensure they are in compliance with the Project impacts, permits and do not adversely affect the Project schedule; and
- Any and all right-of-way acquisitions and permissions required throughout the Project which are located on Town-owned properties shall be provided to the Project at no cost; and
- The Town provides its municipal consent for the Project.

This Resolution shall be effective April 11, 2022.

Dated this 4th of April, 2022.

COUNTY COUNCIL OF BEAUFORT COUNTY

Joseph F. Passiment

Attest:

Sarah W. Brock, Clerk to Council

Responses to MKSK Recommendations

The preliminary responses are based on the meeting held between the Beaufort County (County Administrator Eric Greenway & Assistant County Administrator Jared Fralix), SCDOT (Secretary Christy Hall, Deputy Secretary Leland Colvin, & Program Manager Craig Winn), and the Town of Hilton Head Island (Town Manager Marc Orlando, Mayor John McCann, and Senior Advisor to the Town Manager Shawn Colin) on October 14, 2021, at the Beaufort County Administration Building. Additional responses are based on further environmental NEPA evaluations, traffic evaluations & engineering design performed since the October 14, 2021 meeting.

Corridor Wide

1. Reduce lane widths to 11' to calm traffic & reduce property impacts

Preliminary Response: Agreement on 12' lanes on the bridge and Jenkins Island but a 12' outside lane and a pair of 11' inside lanes as well as accessory lanes will be pursued through the Stoney Community from the Causeway to Spanish Wells Road.

Additional Response: During the design process a design exception and appropriate approvals for the two 11' inside lanes within the Stoney Community will need to be pursued.

2. Eliminate raised curbs in medians wherever possible, encourage existing vegetation and natural drainage in these areas

Preliminary Response: Agreement on elimination of raised curbs on the interior portion of Jenkins Island where appropriate with the understanding this will increase the clear zone needed in the median. Raised curb and gutter will be installed on the exterior edge of the roadway to reduce ROW requirements and handle the drainage needs.

Additional Response: Additional investigation and review of safety and drainage needs within the area will be required as project development continues. In project areas with a proposed 15' raised median, curbing will be provided on both the inside and outside of the roadway.

3. Vary median widths and meander roadway alignments where possible for traffic calming and aesthetics

Preliminary Response: Agreement on varying median through Jenkins Island, holding eastbound lanes in the existing alignment and moving westbound travel lanes North on Jenkins Island between Crosstree Drive and the causeway. The costs are to be estimated and if project overrun will need to be funded locally (not SCDOT or SIB funding).

Additional Response: The meandering of the roadway is estimated to increase project cost by approximately \$1.5M and was designed to avoid all critical area and freshwater wetlands. Additionally, the meandering of the roadway would not be permitted to result in wetland impacts greater than the Recommended Preferred Alternative 4A, as presented at the Public Hearing. Appendix 1 shows the proposed layout of the meandering on Jenkins Island that avoids critical area

wetlands and freshwater wetlands. The additional cost does not include any costs for the additional Town-owned ROW required to meander the roadway and the ROW is assumed to be donated. The County does not have extra funds for an additional cost, and additional local funds would need to be identified early in the design process by the Town.

4. Take advantage of Town-owned property for sake of Parkway improvements

Preliminary Response: Agreement on this item and was part of the SIB application.

Additional Response: Project is taking advantage of Town-owned property through Jenkins Island with westbound lanes alignment. Other uses of Town-owned property will be considered during design if needed to facilitate project needs.

5. Utilize ITS smart signal technology throughout

Preliminary Response: Agreement on this item. It is already part of the current project scope.

Additional Response: Please be advised that signals will continue to be maintained locally, by either the County or Town, as currently prescribed in each of our Signal Maintenance Agreements (SMA) with SCDOT

6. Reduce curb cuts and provide for alternative/safer property access throughout

Preliminary Response: Agreement on this item. Change in access drives within Stoney as proposed by MKSK is separate from the project.

Additional Response: Reduction in curb cuts is a priority for safety and access management. Before reducing curb cuts, it will need to be verified that the improvements do not cause additional impacts within the TCP and are agreeable by all property owners.

7. Provide trails on both sides of Parkway where possible with sufficient separation from the road and instead of sidewalks

Preliminary Response: No trail to be installed on the southern side of William Hilton Parkway. The existing sidewalk on the southern side is to be removed except to connect Windmill Harbour to the shared use path underpass west of the Windmill Harbour entrance.

Additional Response: No additional comments.

8. Create a comprehensive system of safe, comfortable, and attractive shared use paths for cyclists and pedestrians

Preliminary Response: Agreement on a trail on the northern side of US 278 only, with separation from the roadway. The trail will not be located in the marsh area and must tighten up alignment through the causeway section connecting Hilton Head and Jenkins Island. The trail is okay to move north for more separation from Parkway through Jenkins Island.

Additional Response: The meandering of the trail through Jenkins Island must avoid the wetlands and environmental features. The corridor will also be evaluated for other opportunities to utilize town-

owned land to meander the shared use path away from the roadway and to protect tree canopies when practical. Additional expenses to meander the trail will need to be covered by local funds (Not SCDOT or SIB funding)

9. Open/encourage views to the water wherever possible, as part of the Island's "signature"

Preliminary Response: Agreement that this is a local element with selective treatment rather than any clearing and grubbing along the water edge.

Additional Response: This will not be included as part of the project as it has the potential to increase environmental impacts outside of the proposed construction limits.

10. Ensure integration of unique, Hilton Head-specific signage, landscape schemes, public art program, architectural vocabulary, iconic features, and accent lighting that distinguish this parkway from all others

Preliminary Response: Agreement that this element should be Town driven through its CIP Program.

Additional Response: The EA document includes signage within the Stoney Community as part of the environmental commitments. This is to include two signs, banner signage on SUP lighting, and landscaping. The final details of each of these features will be coordinated with the Stoney Community and local governments. (Eligible for project funding within the Stoney Community)

11. Reduce design & posted speeds throughout the corridor.

Preliminary Response: The entire project will include a 45mph design speed and consideration given for 40mph posted speed for the William Hilton Parkway from the causeway connecting Hilton Head to Jenkins Island to Sea Pines Circle (which includes the Stoney segment)

Additional Response: The posted speed will need to be discussed with the SCDOT District Traffic Engineer and a formal request will need to be submitted by the Town requesting a Speed Study through the District office for the areas of concern between Stoney and Sea Pines Circle. The project team will assist in any communication and coordination with the SCDOT District office.

12. Evaluate the island-wide transportation system.

Preliminary Response: Agreement this is an effort that will be handled locally

Additional Response: No additional comments.

Zone specific recommendations

13. Encourage/support Moss Creek area improvements (commercial redevelopment, access/roadway improvements, trail connections)

Preliminary Response: Agreement for long-term but not included in this project scope and is not eligible for State Infrastructure Bank Funding.

Additional Response: County to support private commercial redevelopment in Moss Creek area. Any driveways and curb-cuts within project limits will be improved as part of the project. The trail along US 278 will connect to the trails along Bluffton Parkway via pedestrian improvements along Buckingham Plantation Drive.

14. Establish "Gateway Experience" threshold at the west end of Mackay Creek bridges (landscape, island "icon", art, lighting)

Preliminary Response: Okay through coordination of County & Town

Additional Response: Not eligible for SCDOT or SIB Funding

15. Reduce bridge mass with two separate bridges and a Shared-Use path on side of the eastbound bridge

Preliminary Response: SCDOT is neutral on this item. The county administrator does not think benefits will justify additional costs. SCDOT states it's likely a 10-15% increase in the cost of the bridge component resulting in a \$30M to \$40M dollar increase. These additional costs are to be funded with local funds, not SCDOT or SIB. This item is to be evaluated by KCI (County) and HDR (Town) to determine the differential in costs between 1, six-lane bridge versus 2, 3 lane bridges. Additional impacts to the environment and Pinckney Island to be considered.

Additional Response: The construction of two separate bridge structures will increase the actual bridge width and increase the impacts to Pinckney Island due to the need for a separation distance between the two structures. The dual bridge option increases the estimated project cost by \$27.3 million. Additionally, two separate bridge structures will significantly increase the construction time potentially extending the completion date and jeopardizing SIB funding. The County does not support this request.

16. Reduce bridge lane width to 11', verify the need for two breakdown lanes per bridge

Preliminary Response: The bridge will have 12' lanes and no reduction of shoulder/breakdown widths. Each direction to include 2-10' shoulders as agreed to by all parties.

Additional Response: The 12' lanes and 10' shoulders are FHWA controlling criteria and provide a safety benefit to the project. These criteria are based on the roadway classification. Additionally, the shoulders provide improved access for Emergency Response on the bridges and to Jenkins Island.

17. Provide 14' minimum width non-motorized lane on the bridge with multiple viewing areas and protection/screening of vehicles

Preliminary Response: Agreement on the 12' shared-use pathway along the southern side of the bridge with 2 bulb-outs, one over each creek. Each bulb is out to be approximately 50' long. The bulb out elements are to be funded with local money as they are considered non-essential for SIB funding

Additional Response: The final configuration of the bulb-outs will be determined during the bridge design phase but are currently estimated to be 20'x50' with an additional cost of \$125k to \$150k per bulb out. However, the cost estimate does not include the additional cost for protection/screening. The County supports the concept of the viewing areas/screening if additional local funds can be identified early in the design process by the Town but the County does not have the extra funds to support the addition.

18. Attention to bridge design/details as viewed from afar and on-deck (parapet, railings, structural forms)

Preliminary Response: Agreement on this item with continued coordination through project design. Attention to be focused on the above deck treatment of the bridge.

Additional Response: This has potential schedule implications but a decision would need to be made early in the design development to ensure timely completion of the bridge design. The County does not have extra funds but supports additional aesthetic details but is good with the concept if additional local funds or grants can be identified and made available.

19. Consolidate Jenkins Island access to one location at C. Heinrichs Circle/Windmill Harbor Entrance

Preliminary Response: Agreement to consolidate all turning movements on Jenkins Island to this single intersection has already been implemented as part of the refinements after the public hearing.

Additional Response: No additional response.

20. Provide traditional turn lanes and intuitive intersection configurations throughout Stoney

21. Eliminate confusing SCDOT U-turns

22. Eliminate left turns and traffic introduction onto Old Wild Horse Road

Preliminary Response: This response applies to 20-22. There is an internal agreement to provide lefts at the Stoney intersections and not to proceed with the U-turn at the Old Wild horse Road intersection. SCDOT, Beaufort County, and the Town of Hilton Head agree to evaluate options to understand the performance and impacts resulting from the preferred alternative and the local alternatives. A balance of performance, impact of land disruption, and local desires and input will drive the final request to FHWA.

Additional Response: Additional survey work and engineering design was required to address this request. A traffic technical memo was created for the section of US 278 between Squire Pope Road and Spanish Wells Road to evaluate additional intersection configurations (Appendix 2). Two additional intersections were evaluated that eliminated the signal and U-turns at Old Wild Horse Road and reintroduced the left turns at Squire Pope Road & Spanish Wells Road. Both options introduced dual left-hand turn lanes from eastbound US 278 onto northbound Squire Pope Road, dual lefts from

Spanish Wells Road northbound onto US 278 westbound, and the combination of the Squire Pope Road southbound through movement and left-turn movement to protect the tree canopy on Squire Pope Road. Option 1 includes dual rights from SB Squire Pope Road onto WB US 278 operating under a stop condition while Option 2 includes one free flow right from SB Squire Pope Road to WB US 278 with an acceleration lane on 278. While the traffic performance of each of the options causes decreased level of service at the intersections, additional travel time and delays in the peak direction, and additional delays on the side streets, the performance does meet the minimum standard of a level of service D. There is minimal discernment obtained between the performance of Option 1 and Option 2. The next step was to compare the options to original TCP impacted areas of 4.77 acres as shown in Appendix 3. Each of the alternatives, including the preferred alternative through refinements, shows a reduction in the TCP impacts. Once all factors are considered including TCP impacts, local governmental input, and public comments from the Public Hearing Option 1 balances the need for traffic performance for the mainline and side roads, and the TCP impacts throughout Stoney. Option 1 reduces the frontage impacts along US 278 within Stoney from the causeway to Squire Pope Road. The selection of Option 1 will require the trail to meander within the Town of Hilton Tract on the northeast corner of Squire Pope Road and US 278 to protect the tree canopy along Squire Pope Road as requested by the State Historical Preservation Office (SHPO).

- 23. *Create a new park south of Parkway in Stoney to authentically showcase Gullah Geechee culture/heritage***
- 24. *Consider a new Visitor Center as part of this park that intentionally showcases this heritage while introducing visitors to the Island's offerings***

Preliminary Response: This applies to 23 and 24. This must take place (at least initially) on Town/County-owned property within Stoney. NO additional property impacts take or displacements should be represented as part of this element. TCP elements identified in the EA should be integrated and enhanced at this location.

Additional Response: The new park and pavilion are part of the environmental commitments for the project. The location of the improvements and details will need to be coordinated with the Stoney Community and the local entities. Should the Town desire to design and construct a visitor center, it could be constructed separately but concurrent with the project. The improvements outlined in the EA document as commitments for the Stoney Community are funded however any additional design elements or expansion would need to be funded locally and not utilize SCDOT or SIB funding.

- 25. *Create a Stoney-authored vision plan for the next generation of that neighborhood***

Preliminary Response: Agreement that this should be a locally handled effort.

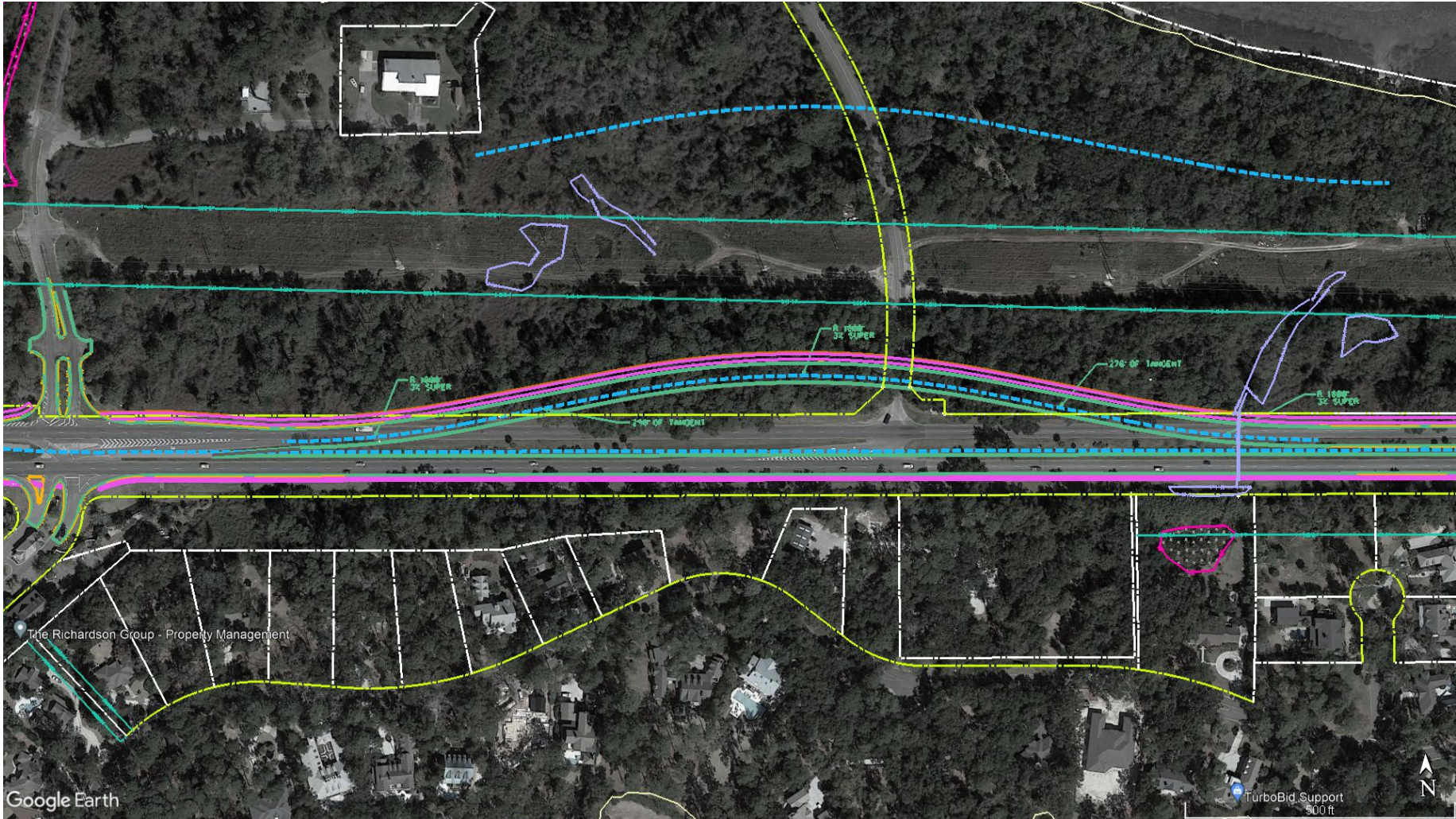
Additional Response: As part of the environmental commitments, the County will develop and host an online, interactive map of the history of the Stoney community to share important historical information about the community.

- 26. *Create and professional staff a Development Corporation as a vehicle for Stoney Advancement.***

Preliminary Response: Agreement that this should be a locally handled effort.

Additional Response: The County supports the advancement of citizens within the Stoney Community and other Gullah communities throughout the county and is open to further discussions to determine the most appropriate vehicle to support this mission.

Appendix 1: Jenkins Island Meandering



Appendix 2: Squire Pope to Spanish Wells Tech Memo

Technical Memorandum

*To: Craig Winn, PE
Project Manager
South Carolina Department of Transportation*

From: CDM Smith

Date: January 26, 2022

Subject: US 278 – Alternative Intersection Analysis Between Squire Pope Road and Spanish Wells Road

Introduction

The Town of Hilton Head’s land planning consultant, MKSK, and HDR have requested additional intersection analysis along US 278. The additional analysis includes reinstating the left turn lanes at Squire Pope Road and Spanish Wells Road. This technical memorandum details the future year 2045 operational analysis for the two new alternative scenarios and how they compare to the preferred alternative presented at the US 278 Public Hearing on July 22, 2021.

Preferred Alternative 4A

The preferred alternative presented at the Public Hearing proposed to remove the eastbound left turn lane from US 278 onto Squire Pope Road, remove the eastbound and westbound left turn lanes onto Wild Horse Road and Spanish Wells Road, and to add a signal at Old Wild Horse Road to facilitate u-turn movements. This configuration of two- and three-phased signalized intersections will work together as a system to help improve the overall intersection operations along this segment of US 278. The lane geometries and levels of service (LOS) are provided in **Figure 1**.

The operational analyses of the preferred alternative are summarized **Table 1**. In the AM peak hour, the intersections operate with an overall LOS B or better. In the PM peak hour, Squire Pope Road will operate at LOS A while Old Wild Horse Road and Spanish Wells Road will operate at LOS C. The SimTraffic results, provided in **Table 2**, show an arterial speed of 24 mph in the eastbound direction and 32 mph in the westbound direction during the AM peak hour, with a total travel time of 60.7 seconds in the eastbound direction and 44.9 seconds in the westbound direction. In the PM peak hour, the arterial speed is 24 mph in the eastbound direction and 25 mph in the westbound direction with a total travel time of 59.9 seconds in the eastbound direction and 57.5 seconds in the westbound direction. The Synchro and SimTraffic reports for the preferred alternative are provided in **Appendix A**.

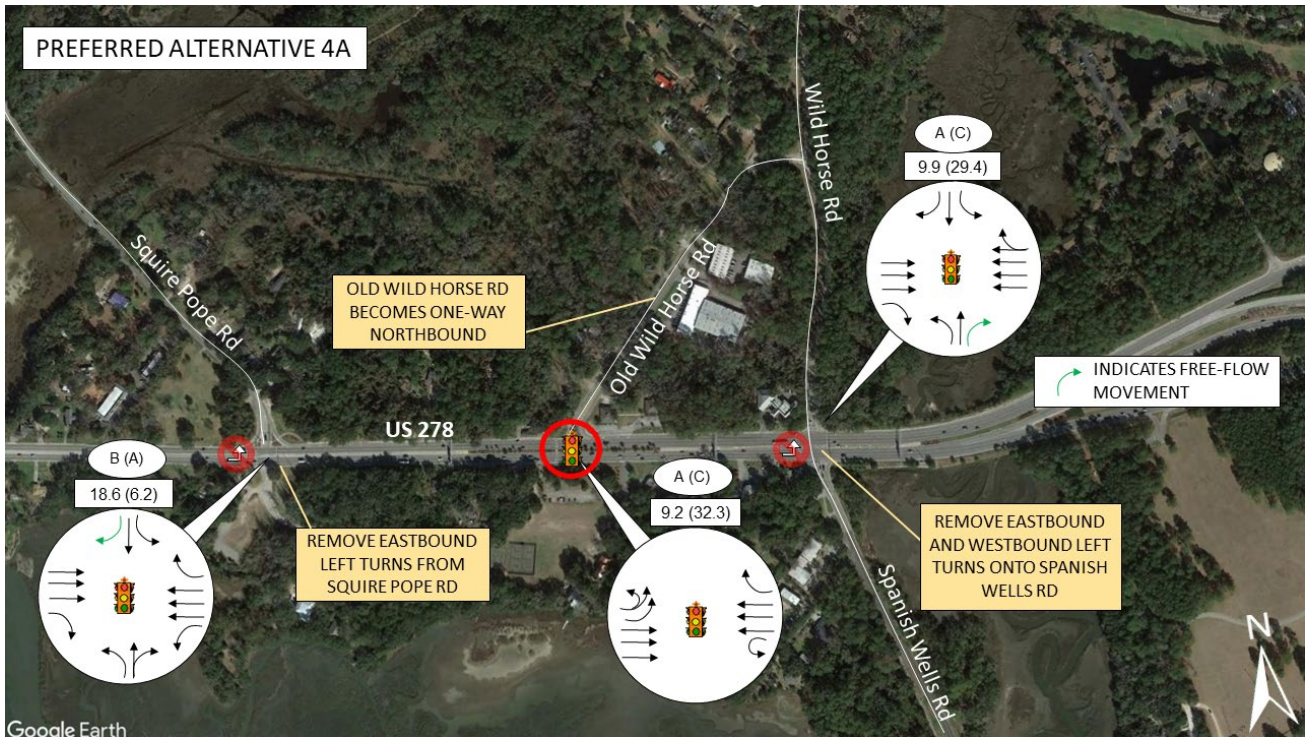


Figure 1 - Lane Geometries and LOS – Preferred Alternative 4A

Table 1 – Preferred Alternative Level of Service Summary

Intersection	AM			PM		
	Movement	LOS	Delay	Movement	LOS	Delay
Squire Pope Rd	Overall	B	18.6	Overall	A	6.2
Old Wild Horse Road	Overall	A	9.2	Overall	C	32.3
Wild Horse Rd/Spanish Wells Rd	Overall	A	9.9	Overall	C	29.4

Table 2 – Preferred Alternative SimTraffic Summary

Preferred Alternative							
Eastbound	AM	Travel Time (s)	60.7	Westbound	AM	Travel Time (s)	44.9
		Arterial Speed (mph)	24			Arterial Speed (mph)	32
		Delay (s)	27.6			Delay (s)	11.4
	PM	Travel Time (s)	59.9		PM	Travel Time (s)	57.5
		Arterial Speed (mph)	24			Arterial Speed (mph)	25
		Delay (s)	26.4			Delay (s)	24.0

Additional Analysis

Although the operational analysis of the preferred alternative shows exceptional levels of service at all three intersections and an improvement in travel times along this portion of US 278, there is citizen concern regarding removing the left turns from US 278 and adding a signal at the Old Wild Horse Road intersection. The Town of Hilton Head requested two additional scenarios be considered which reinstate the left turn movements:

- Option 1: Dual eastbound left turn lanes from US 278 onto Squire Pope Road, dual southbound right turn lanes from Squire Pope Road onto US 278, single eastbound left turn lane from US 278 onto Wild Horse Road, single westbound left turn lane from US 278 onto Spanish Wells Road, and removal of the signal at Old Wild Horse Road.
- Option 2: Dual eastbound left turn lanes from US 278 onto Squire Pope Road, single free-flow southbound right turn lane from Squire Pope Road onto US 278, single eastbound left turn lane from US 278 onto Wild Horse Road, single westbound left turn lane from US 278 onto Spanish Wells Road, and removal of the signal at Old Wild Horse Road.

As part of the screening analysis of these two options, additional scenarios combining various lane configurations were considered in an effort to provide the best possible operational performance:

- Scenario a: Separate southbound left and through lanes at Squire Pope Road; dual northbound left turn lanes from Spanish Wells Road onto US 278
- Scenario b: Separate southbound left and through lanes at Squire Pope Road; single northbound left turn lane from Spanish Wells Road onto US 278
- Scenario c: Combined southbound left/through lane at Squire Pope Road; dual northbound left turn lanes from Spanish Wells Road onto US 278
- Scenario d: Combined southbound left/through lane at Squire Pope Road; single northbound left turn lane from Spanish Wells Road onto US 278

At Spanish Wells Road, because the left turn movements from US 278 are added back to the signal phasing, the single northbound left turn lane will no longer be able to accommodate the left turning volume. This is because the green time that was allocated to the northbound left is now distributed to the protected left turn phases on US 278. Therefore, dual northbound left turn lanes are needed at the Spanish Wells Road intersection and the only viable scenarios were a and c, described above.

The comparison between scenario a and scenario c showed a miniscule difference in operations at the Squire Pope Road intersection and were the same for the Spanish Wells Road intersection. Scenario c was advanced further because by combining the southbound left and through movements into one lane, there is a savings in right-of-way impacts. **Appendix B** provides the Synchro reports and detailed summary table for the scenarios.

Option 1 – Dual southbound right turn lanes

Figure 2 shows the lane geometries and LOS results for Option 1. **Table 3** summarizes the operational analysis of the intersections. In the AM peak hour, Squire Pope Road and Spanish Wells Road operate at LOS C. In the PM peak hour, both intersections operate at LOS D.

The SimTraffic results, provided in **Table 4**, show an arterial speed of 20 mph in the eastbound direction and 34 mph in the westbound direction during the AM peak hour, with a total travel time of 70.6 seconds in the eastbound direction and 42 seconds in the westbound direction. In the PM peak hour, the arterial speed is 23 mph in the eastbound and westbound directions with a total travel time of 63 seconds in the eastbound direction and 63.8 seconds in the westbound direction. The Synchro and SimTraffic reports are provided in **Appendix B** and **Appendix C**, respectively.

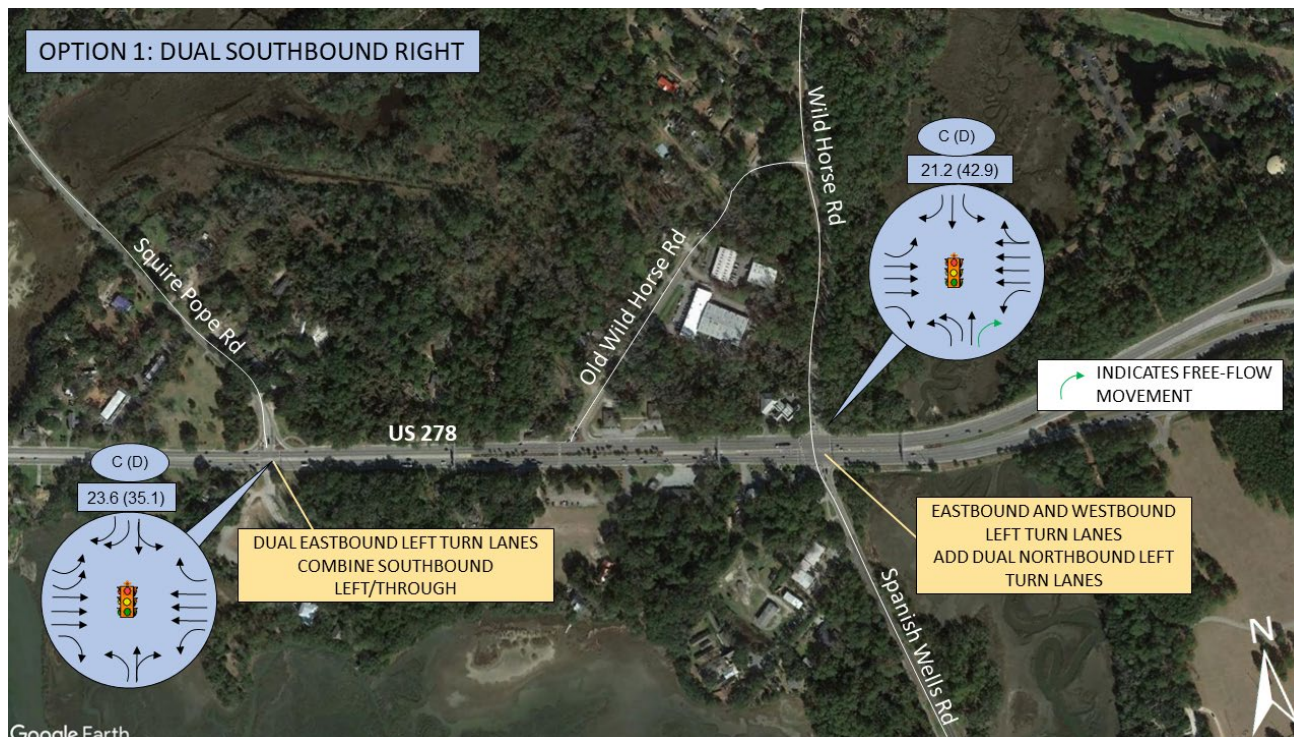


Figure 2 - Lane Geometries and LOS – Option 1

Table 3 – Option 1 Alternative Level of Service Summary

Intersection	AM			PM		
	Movement	LOS	Delay	Movement	LOS	Delay
Squire Pope Rd	Overall	C	23.6	Overall	D	35.1
Old Wild Horse Road	Overall	N/A	N/A	Overall	N/A	N/A
Wild Horse Rd/Spanish Wells Rd	Overall	C	21.2	Overall	D	42.9

Table 4 – Option 1 Alternative SimTraffic Summary

Option 1							
Eastbound	AM	Travel Time (s)	70.6	Westbound	AM	Travel Time (s)	42.0
		Arterial Speed (mph)	20			Arterial Speed (mph)	34
		Delay (s)	37.5			Delay (s)	8.9
	PM	Travel Time (s)	63.0		PM	Travel Time (s)	63.8
		Arterial Speed (mph)	23			Arterial Speed (mph)	23
		Delay (s)	29.9			Delay (s)	30.6

Option 2 – Single free-flow southbound right turn lane

Figure 3 shows the lane geometries and LOS results for Option 2. Table 5 summarizes the operational analysis of the intersections. In the AM peak hour, the intersections operate at LOS C or better. In the PM peak hour, both intersections operate at LOS D.

The SimTraffic results, provided in Table 6, show an arterial speed of 22 mph in the eastbound direction and 33 mph in the westbound direction during the AM peak hour, with a total travel time of 66.3 seconds in the eastbound direction and 43.6 seconds in the westbound direction. In the PM peak hour, the arterial speed is 23 mph in the eastbound direction and 22 mph in the westbound direction with a total travel time of 64 seconds in the eastbound direction and 66.9 seconds in the westbound direction. The Synchro and SimTraffic reports are provided in Appendix B and Appendix C, respectively.



Figure 3 - Lane Geometries and LOS – Option 2

Table 5 – Option 2 Alternative Level of Service Summary

Intersection	AM			PM		
	Movement	LOS	Delay	Movement	LOS	Delay
Squire Pope Rd	Overall	B	19.8	Overall	D	37.1
Old Wild Horse Road	Overall	N/A	N/A	Overall	N/A	N/A
Wild Horse Rd/Spanish Wells Rd	Overall	C	21.2	Overall	D	42.9

Table 6 – Option 2 Alternative SimTraffic Summary

Option 2							
Eastbound	AM	Travel Time (s)	66.3	Westbound	AM	Travel Time (s)	43.6
		Arterial Speed (mph)	22			Arterial Speed (mph)	33
		Delay (s)	33.4			Delay (s)	10.6
	PM	Travel Time (s)	64.0		PM	Travel Time (s)	66.9
		Arterial Speed (mph)	23			Arterial Speed (mph)	22
		Delay (s)	31.0			Delay (s)	33.8

Summary of Level of Service Results

The following summarizes how the two proposed options compare to the preferred alternative. **Figure 4** shows the overall intersection operations for all the alternatives. The preferred alternative provides the best level of service operations for Squire Pope Road and Spanish Wells Road. At Squire Pope Road in the AM peak hour, Option 2 exhibits a comparable level of service, but in the PM peak hour, the level of service is markedly worse. At the Spanish Wells Road intersection, the preferred alternative operates much better than the two proposed alternatives in both the AM and PM peak hours.



Figure 4 - Intersection LOS Comparison

Tables 7 and 8 provide a detailed comparison of each alternative by lane movement for the AM and PM peak hours, respectively. When the eastbound left turn movement is added back to the Squire Pope Road intersection, the westbound approach suffers the most in terms of delay. This is because the eastbound left turn movement requires a protected phase within the signal cycle and must take that green time away from other movements at the intersection, such as the westbound movements. The same is true for the incorporation of eastbound and westbound left turn lanes at Spanish Wells Road. At

this intersection, all of the movements show a degradation in level of service when compared to the preferred alternative, especially the westbound and northbound approaches in the AM peak hour. The PM peak hour shows a less drastic effect from adding the left turn lanes.

Table 7 – AM Level of Service Summary – All Alternatives

	Preferred Alternative				Option 1				Option 2											
	Movement	v/c	LOS	Delay	Movement	v/c	LOS	Delay	Movement	v/c	LOS	Delay								
Squire Pope Rd	EB	3T	1.00	C	25.0	EB	2L	0.82	C	23.4	EB	2L	0.81	C	22.8					
		1R	0.01				3T	0.95				3T	0.95			1R	0.01			
		1L	0.27				1R	0.01				1L	0.17			1R	0.01			
	WB	3T	0.42	A	0.7	WB	1L	0.17	A	8.5	WB	1L	0.17	A	8.6					
		1R					3T	0.49				3T	0.49			1R				
		1L	0.10				1L	0.32				1L	0.09			1L	0.09			
	NB	1T/R	0.24	F	82.8	NB	1T/R	0.23	F	99.6	NB	1T/R	0.23	F	95.4					
		1L	0.56				1L/T	0.69				1L/T	0.69							
		1T	0.11				1R					1R								
	SB	1R		F	89.2	SB	2R	0.74	F	93.7	SB	1R		F	116.7					
Overall			B				18.6	Overall					C			23.6	Overall		B	19.8
Spanish Wells Rd	EB	3T	0.92	A	1.2	EB	1L	0.29	A	7.1	EB	1L	0.29	A	7.1					
		1R	0.24				3T	0.95				3T	0.95			1R	0.21			
		1L	0.99				1R	0.21				1L	0.99			1R	0.21			
	WB	3T	0.36	A	4.0	WB	3T	0.42	C	23.1	WB	3T	0.42	C	23.1					
		1T/R	0.36				1T/R	0.42				1T/R	0.42							
		1L	0.99				2L	1.03				2L	1.03							
	NB	1T	0.31	F	118.1	NB	1T	0.73	F	153.2	NB	1T	0.73	F	153.2					
		1R					1R					1R								
		1L	0.62				1L	0.65				1L	0.65							
	SB	1T	0.63	F	88.8	SB	1T	0.73	F	109.1	SB	1T	0.73	F	109.1					
1R		0.49	1R				0.29	1R				0.29								
Overall			A				9.9	Overall					C			21.2	Overall		C	21.1
Old Wild Horse Rd	EB	1U/L	0.74	A	9.1															
		1L	0.74																	
		3T	0.92																	
	WB	1U	0.72	A	9.4															
		3T	0.50																	
Overall		A	9.2																	

Table 8 – PM Level of Service Summary – All Alternatives

	Preferred Alternative				Option 1					Option 2					
	Movement	v/c	LOS	Delay	Movement	v/c	LOS	Delay	Movement	v/c	LOS	Delay			
Squire Pope Rd	EB	3T	0.76	A	8.4	EB	2L	1.02	B	17.9	EB	2L	1.03	B	19.4
		1R	0.05				3T	0.71				1R	0.05		
		1L	0.19				1L	0.18				1L	0.18		
	WB	3T	0.97	A	1.2	WB	3T	1.08	D	40.9	WB	3T	1.10	D	48.6
		1R					1R					1R			
		1L	0.08				1L	0.29				1L	0.06		
	NB	1T/R	0.49	F	89.9	NB	1T/R	0.49	F	87.4	NB	1T/R	0.41	F	82.3
		1L	0.74				1L/T	0.85				1L/T	0.69		
	SB	1T	0.08	F	116.3	SB			F	102.3	SB			F	103.9
		1R					2R	0.85				1R			
Overall			A				6.2	Overall					D		
Spanish Wells Rd	EB	3T	0.74	A	0.8	EB	1L	0.98	A	8.8	EB	1L	0.98	A	8.8
		1R	0.34				3T	0.84				1R	0.28		
		1L	0.91				1L	0.91				1L	0.91		
	WB	3T	0.95	D	36.5	WB	3T	1.00	D	54.9	WB	3T	1.00	D	54.9
		1T/R	0.98				1T/R	1.02				1T/R	1.02		
		1L	1.01				2L	1.00				2L	1.00		
	NB	1T	0.36	F	116.3	NB	1T	0.52	F	125.1	NB	1T	0.52	F	125.1
		1R					1R					1R			
		1L	0.36				1L	0.40				1L	0.40		
	SB	1T	0.93	F	125.6	SB	1T	0.98	F	126.7	SB	1T	0.98	F	126.7
1R		0.76	1R				0.57	1R				0.57			
Overall			C				29.4	Overall					D		
Old Wild Horse Rd	EB	1U/L	1.03	C	21.4										
		1L	1.03												
		3T	0.73												
	WB	1U	0.63	D	40.0										
		3T	1.05												
1R	0.01														
Overall		C	32.3												

Summary of Travel Time Analysis

The SimTraffic analysis, summarized in **Table 9**, provides travel time estimations for each of the alternatives. During the AM peak hour in the eastbound direction, the preferred alternative results in the shortest average travel time (and thus highest travel speed) between the Squire Pope Road intersection and the Spanish Wells Road intersection. In the westbound direction in the AM peak hour, Option 1 shows a slightly shorter travel time (2.9 seconds faster) than the preferred alternative. Option 2 results in a travel time savings of 1.3 seconds over the preferred alternative. In the PM peak hour, the preferred alternative shows a slightly shorter travel time in the eastbound direction than the other alternatives. However, in the westbound direction, the travel time savings is 6.3 seconds and 9.4 seconds over Option 1 and Option 2, respectively.

Table 9 - SimTraffic Summary – All Alternatives

		SimTraffic Results					
		EB Travel Time (s)	EB Speed (mph)	EB Delay (s)	WB Travel Time (s)	WB Speed (mph)	WB Delay (s)
Preferred Alternative	AM	60.7	24	27.6	44.9	32	11.4
	PM	59.9	24	26.4	57.5	25	24.0
Option 1	AM	70.6	20	37.5	42.0	34	8.9
	PM	63.0	23	29.9	63.8	23	30.6
Option 2	AM	66.3	22	33.4	43.6	33	10.6
	PM	64.0	23	31.0	66.9	22	33.8

Another method of assessing the travel time through the corridor is by analyzing the time-space diagram. These diagrams indicate the progression of a vehicle as it travels between the signal at Squire Pope Road (top bar), through the Old Wild Horse Road intersection (middle bar) to the signal at Spanish Wells Road (bottom bar). The thick horizontal bars at each signal represent the red, yellow, and green times that a vehicle will experience along US 278.

To interpret the diagrams, pick a blue line and follow it from top to bottom for the eastbound direction (**Figures 5-7**). For the westbound direction, pick a red line and follow it from bottom to top (**Figures 8-10**). A straight blue or red line indicates that a vehicle will travel through the Old Wild Horse Road and Spanish Wells Road signals on green. A horizontal blue or red line indicates that a vehicle will get stopped. The longer the horizontal blue or red line, the longer the delay. Additionally, the height of the stacked horizontal blue or red lines represents vehicles queued at the intersection. The width of the straight blue or red lines (without horizontal breaks) indicates the length of time vehicles will progress through the segment without stopping.

Figure 5 shows the PM peak hour eastbound progression for the preferred alternative. The width of straight lines is approximately 70 seconds. Some vehicles will get stopped at the Old Wild Horse Road signal to allow for the protected u-turn movement phase, indicated by the hatched areas in the green horizontal line. However, because the signals are coordinated and consist of two- and three-phases, once the eastbound traffic gets a green, the queues dissipate at Spanish Wells Road and vehicles can travel unimpeded for 70 seconds.

Figure 6 shows the eastbound progression for Option 1. **Figure 7** shows the eastbound progression for Option 2. When compared to the preferred alternative, these alternatives show a much longer queue at Spanish Wells Road. Vehicles begin stacking when the eastbound direction receives a red light. When the light turns green, the front of the queue begins to dissipate, but the back of the queue does not flush out until halfway through the green phase. Although the signals at Squire Pope Road and Spanish Wells Road are also coordinated, they are both four-phase signals that require protected phasing for eastbound and westbound left turns from US 278 (as indicated by the hatched areas within the green horizontal line), which take away from the green time for through traffic along US 278.

In the eastbound direction during the PM peak hour, Options 1 and 2 have an unimpeded time of approximately 35 and 30 seconds, respectively. This indicates that although there is some delay encountered with the additional signal at Old Wild Horse Road, the overall progression of through traffic is better in the preferred alternative.

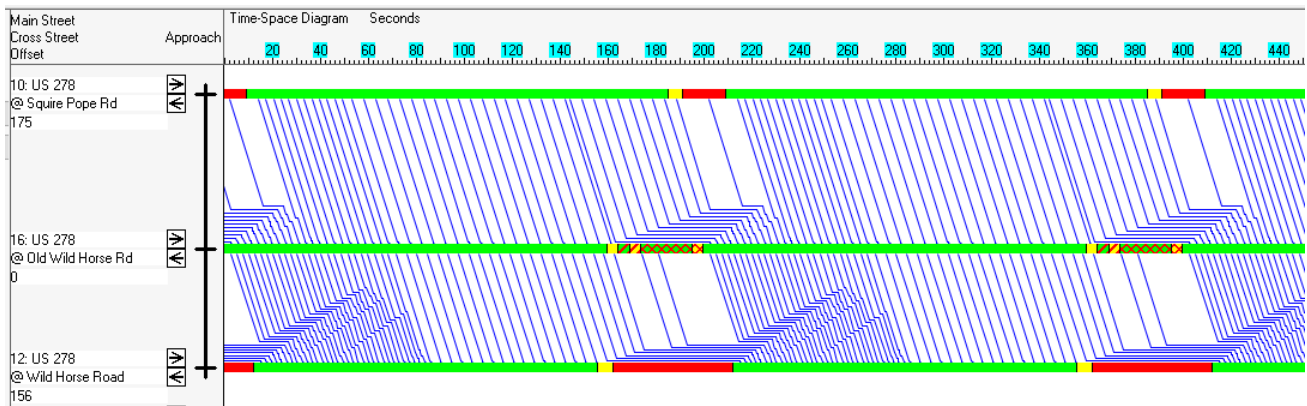


Figure 5 - PM Peak Hour Eastbound Progression - Preferred Alternative

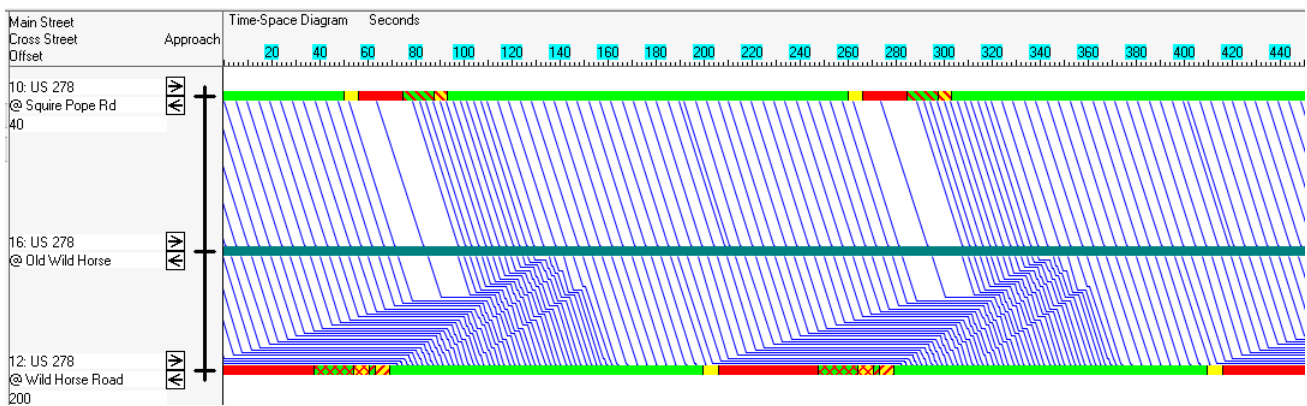


Figure 6 - PM Peak Hour Eastbound Progression - Option 1

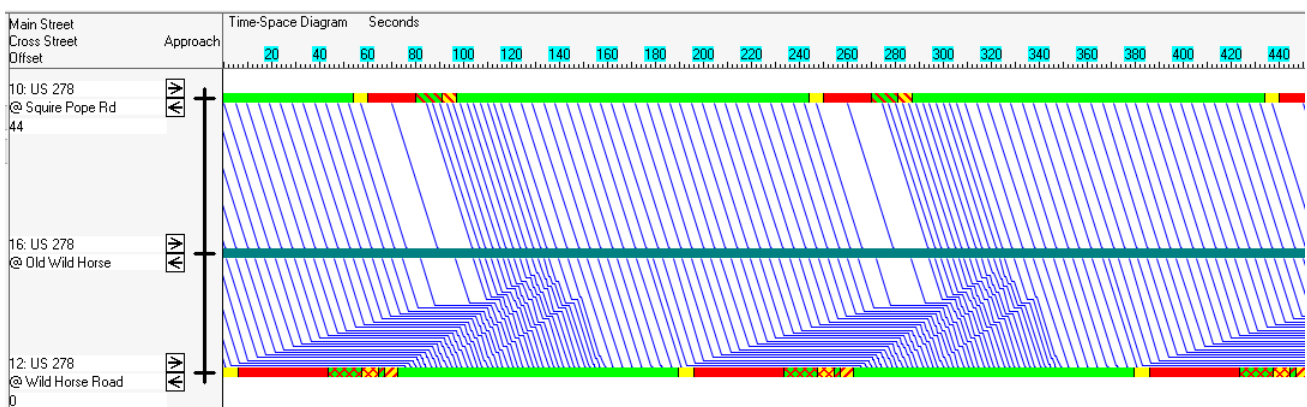


Figure 7 - PM Peak Hour Eastbound Progression - Option 2

Figures 8-10 show the time-space diagrams for the PM westbound direction. It is often difficult to achieve progression in both directions along a corridor within the same time period. During the PM peak hour, westbound is the peak direction and therefore the signal coordination is optimized in this direction. The progression in the westbound direction in the PM peak hour is essentially the same for all three alternatives.

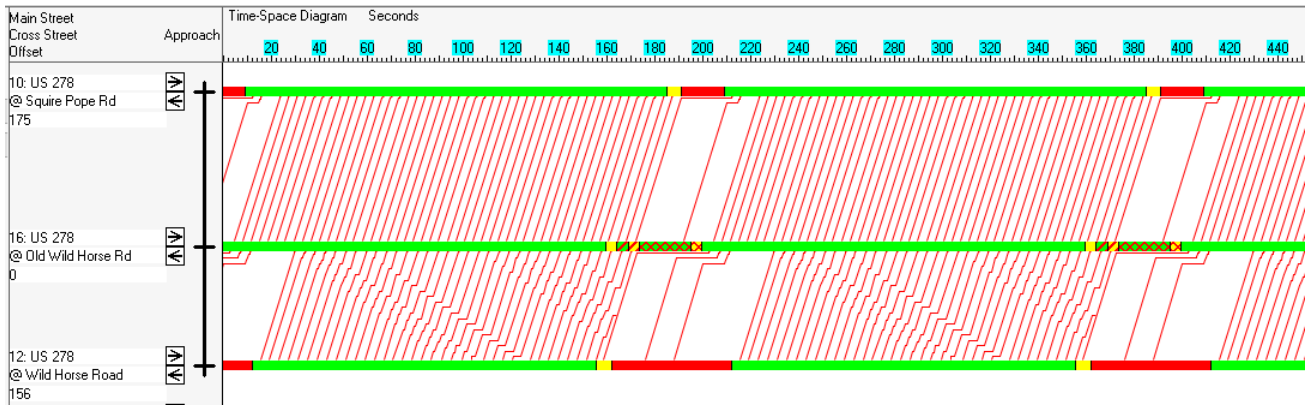


Figure 8 - PM Peak Hour Westbound Progression - Preferred Alternative

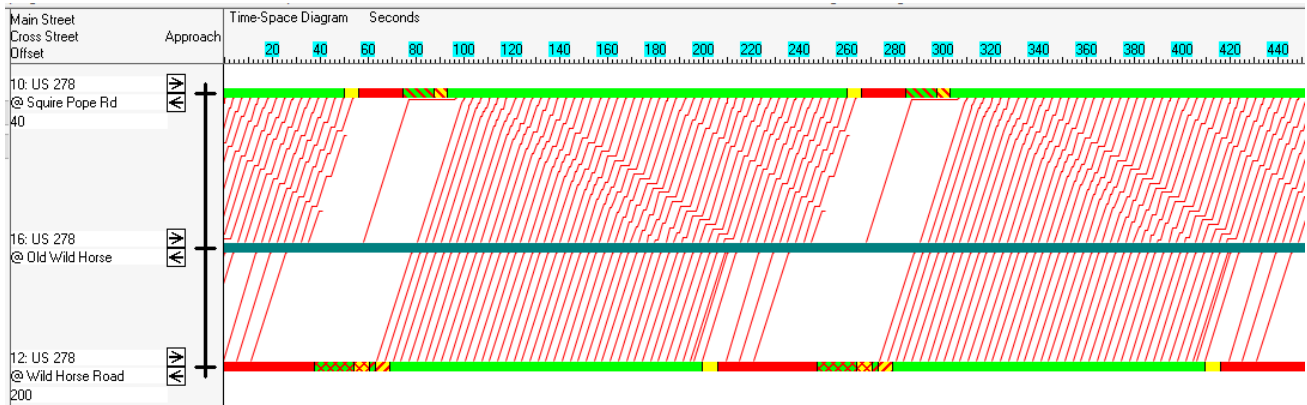


Figure 9 - PM Peak Hour Westbound Progression - Option 1

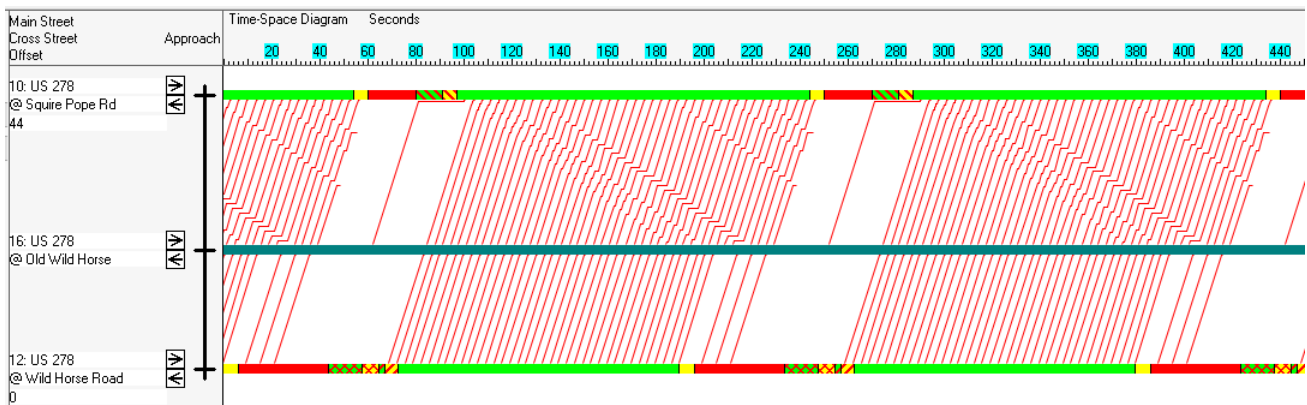


Figure 10 - PM Peak Hour Westbound Progression - Option 2

We understand that the preferred alternative will result in drivers traveling a slightly longer distance with the removal of the left turn lanes from US 278; however, the travel time increase is nominal. The delay associated with the eastbound left turn at Squire Pope Road in the PM peak hour is 150.4 seconds in Option 1 and 155.2 seconds in Option 2. In the preferred alternative, the delay associated with the eastbound u-turn in the PM peak hour is 131.5 seconds. Assuming a vehicle travels at 45 mph, it will take 18 additional seconds to travel the 1,200 feet from Squire Pope Road to Old Wild Horse Road plus 18 seconds to travel back to Squire Pope Road. The worst-case scenario is that a vehicle will be stopped at Old Wild Horse Road for the entire 131.5 seconds, resulting in a total travel time of approximately

168 seconds. When compared to the worst-case scenario of being stopped for the entire 150.4 or 155.2 seconds at the eastbound left onto Squire Pope Road, this is an additional 17 or 13 seconds of travel time for those who choose to utilize the u-turn movement. Another option is to turn left onto Old Wild Horse Road and use Wild Horse Road to get to their destination north of US 278. The Town of Hilton Head has been receptive to considering improvements at the Old Wild Horse Road at Wild Horse Road intersection and the Wild Horse Road at Gumtree Road intersection.

Final Recommended Alternative and Geometry

The recommended preferred alternative presented at the US 278 Public Hearing on July 22, 2021, provides the best signal operations for the intersections of Squire Pope Road and Spanish Wells Road. This alternative also provides the shortest travel time between the intersections during the AM and PM peak hours in the eastbound direction and during the PM peak hour in the westbound direction. However, it should be noted that this traffic analysis only compares the alternatives based on signal operations and travel time analyses. Although the preferred alternative performs the best, there is minimal discernment that is obtained between these three alternatives.

Upon considering other factors that include quantifying impacts to Traditional Cultural Property (TCP) and evaluating local government input and public comments received during the public hearing, it is apparent that Option 1 provides a better balance between the need for traffic performance within the corridor and sideroads, while minimizing the TCP impacts throughout the Stoney Community. Furthermore, Option 1 reduces TCP impacts to the three parcels located on the north side of US 278 between the causeway and Squire Pope Road as compared with the recommended preferred alternative and Option 2.

Appendix 3: TCP Maps

Legend

Proposed Right-Of-Way (ROW) Impacts

Stoney Traditional Cultural Property Parcels

Parcels Not Impacted by ROW

Publicly Owned Parcels Impacted by ROW

Privately Owned Parcels Impacted by ROW

ROW Impacts within the Stoney Community				
	RPA 4A (as shown in the EA)	RPA 4A (as updated along Wild Horse Road)	Intersection Option 1	Intersection Option 2
<small>[shown in acres]</small>				
Publicly Owned	3.67	2.67	2.74	2.58
Privately Owned	1.2	1.17	1.14	1.16
Total ROW	4.87	3.84	3.88	3.74
Total Stoney TCP Property	302.36	300.25	300.25	300.25

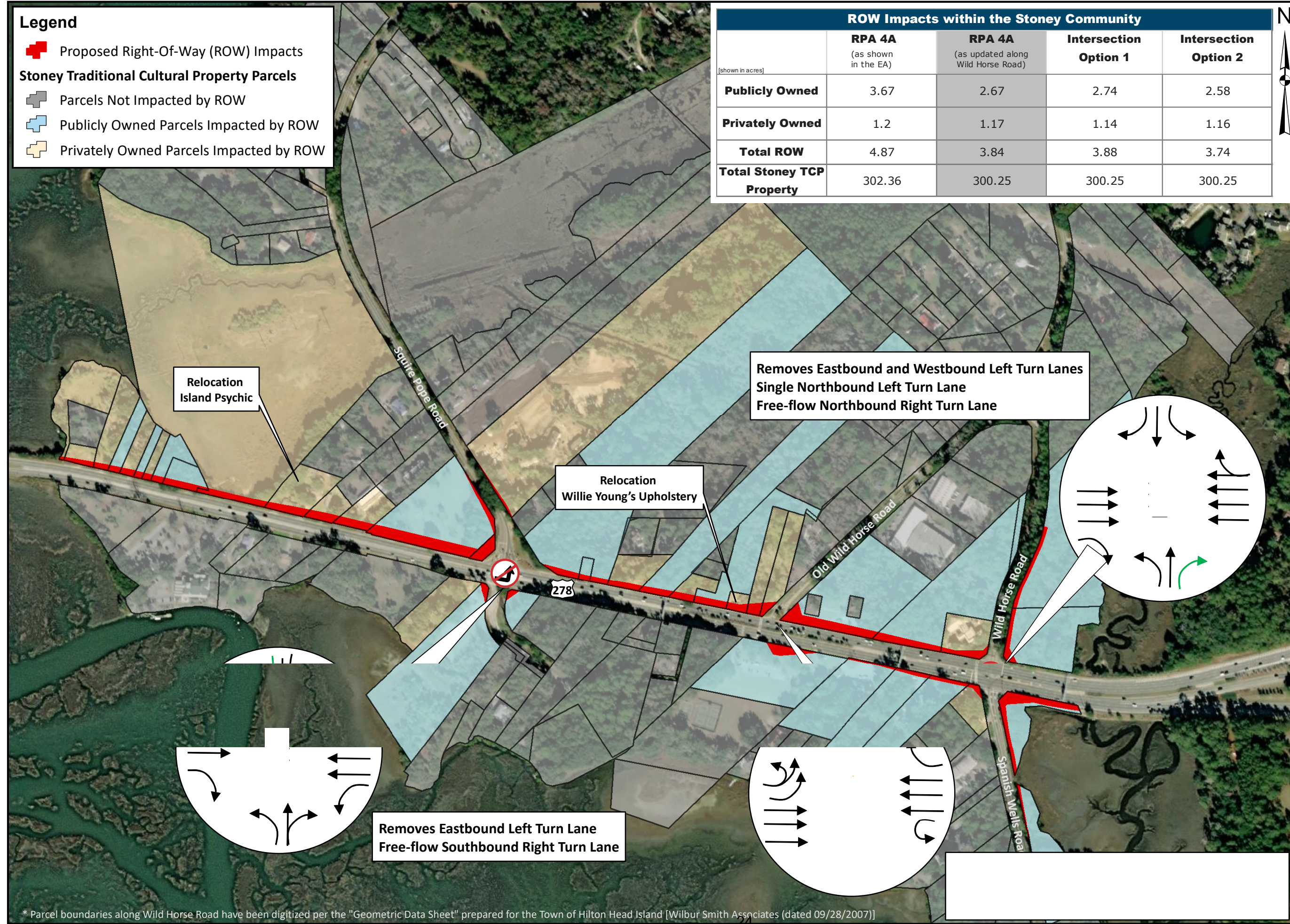
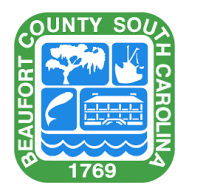
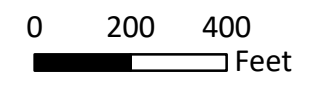


**Proposed
Right-of-Way Impacts
Within the Stoney
Traditional Cultural Property
Boundary**

**Recommended Preferred
Alternative 4A
Intersection Alternative 10
(Consolidate Lefts)
01/27/2022**





ROW Impacts within Stoney

Publicly Owned Property:	2.67 ac
Privately Owned Property:	1.17 ac
Total Property:	3.84 ac
Stoney TCP Property:	300.25 ac



* Parcel boundaries along Wild Horse Road have been digitized per the "Geometric Data Sheet" prepared for the Town of Hilton Head Island [Wilbur Smith Associates (dated 09/28/2007)]

Legend

-  Proposed Right-Of-Way (ROW) Impacts
- Stoney Traditional Cultural Property Parcels**
-  Parcels Not Impacted by ROW
-  Publicly Owned Parcels Impacted by ROW
-  Privately Owned Parcels Impacted by ROW

ROW Impacts within the Stoney Community				
	RPA 4A (as shown in the EA)	RPA 4A (as updated along Wild Horse Road)	Intersection Option 1	Intersection Option 2
<small>[shown in acres]</small>				
Publicly Owned	3.67	2.67	2.74	2.58
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Total ROW	4.87	3.84	3.88	3.74
Total Stoney TCP Property	302.36	300.25	300.25	300.25



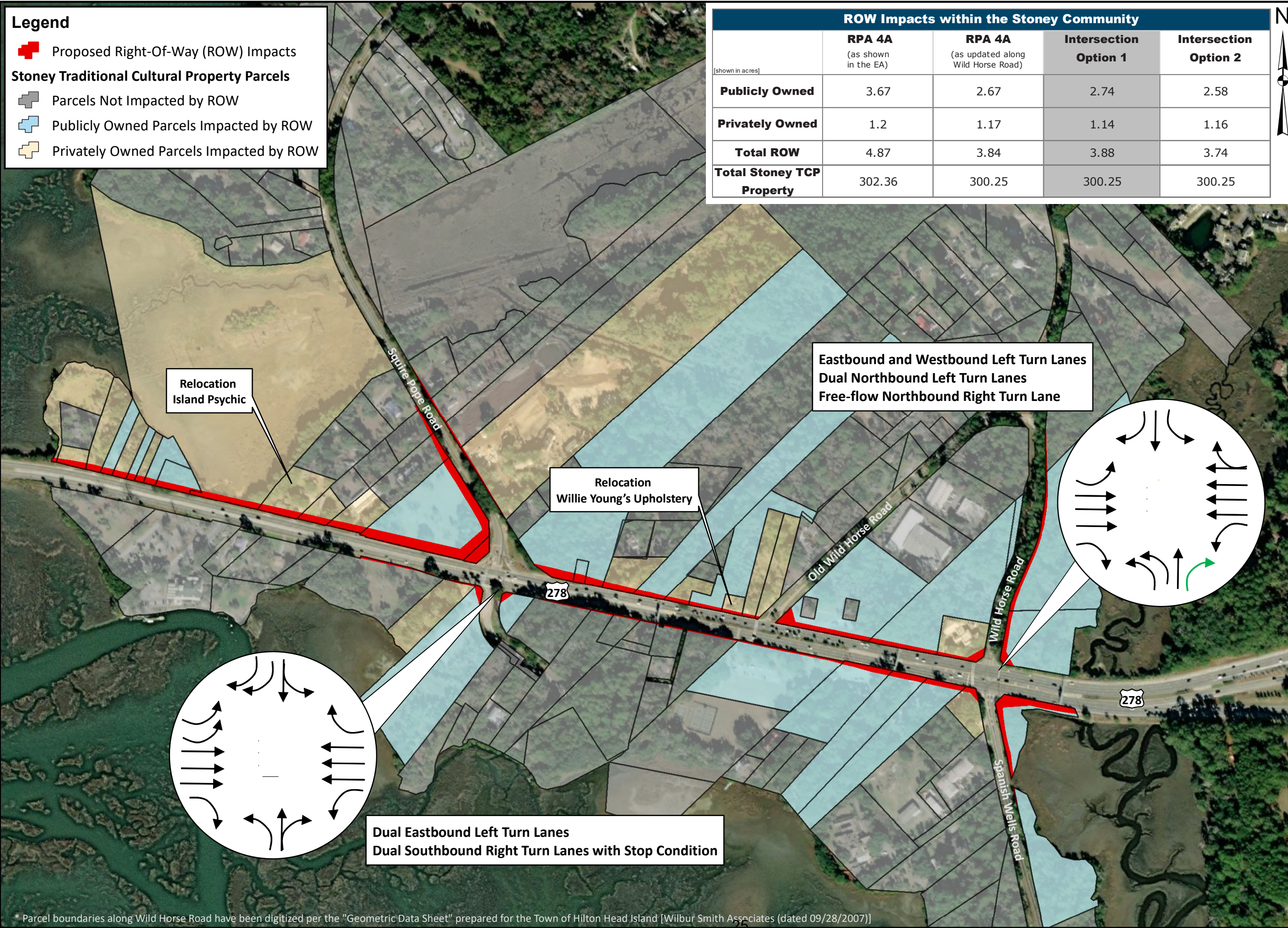
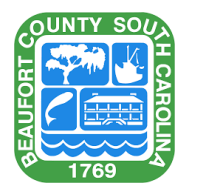
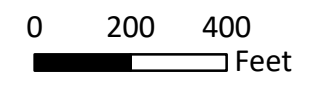
**Proposed
Right-of-Way Impacts
Within the Stoney
Traditional Cultural Property
Boundary**

**Recommended Preferred
Alternative 4A
Intersection Option 1**

01/27/2022

ROW Impacts within Stoney

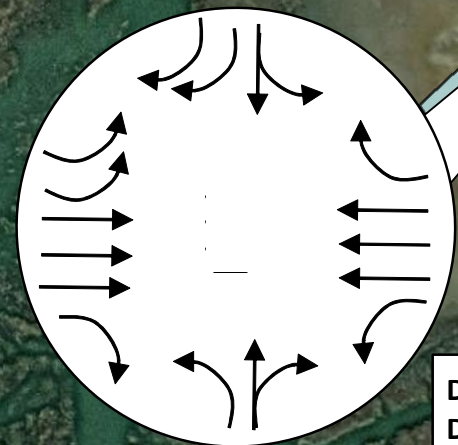
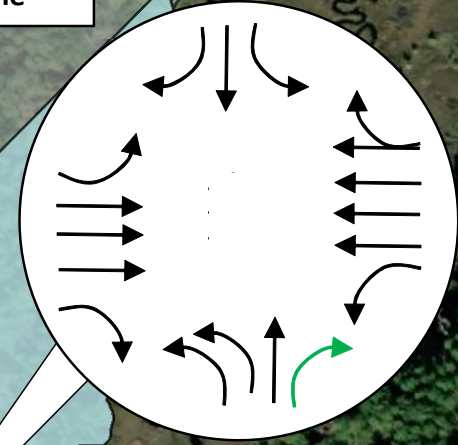
Publicly Owned Property:	2.74 ac
Privately Owned Property:	1.14 ac
Total Property:	3.88 ac
Stoney TCP Property:	300.25 ac



Relocation
Island Psychic

Relocation
Willie Young's Upholstery

Eastbound and Westbound Left Turn Lanes
Dual Northbound Left Turn Lanes
Free-flow Northbound Right Turn Lane



Dual Eastbound Left Turn Lanes
Dual Southbound Right Turn Lanes with Stop Condition

* Parcel boundaries along Wild Horse Road have been digitized per the "Geometric Data Sheet" prepared for the Town of Hilton Head Island [Wilbur Smith Associates (dated 09/28/2007)]



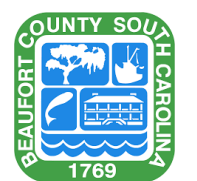
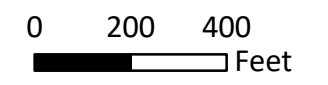
Proposed Right-of-Way Impacts Within the Stoney Traditional Cultural Property Boundary

Recommended Preferred Alternative 4A Intersection Option 2

01/27/2022

ROW Impacts within Stoney

Publicly Owned Property:	2.58 ac
Privately Owned Property:	1.16 ac
Total Property:	3.74 ac
Stoney TCP Property:	300.25 ac



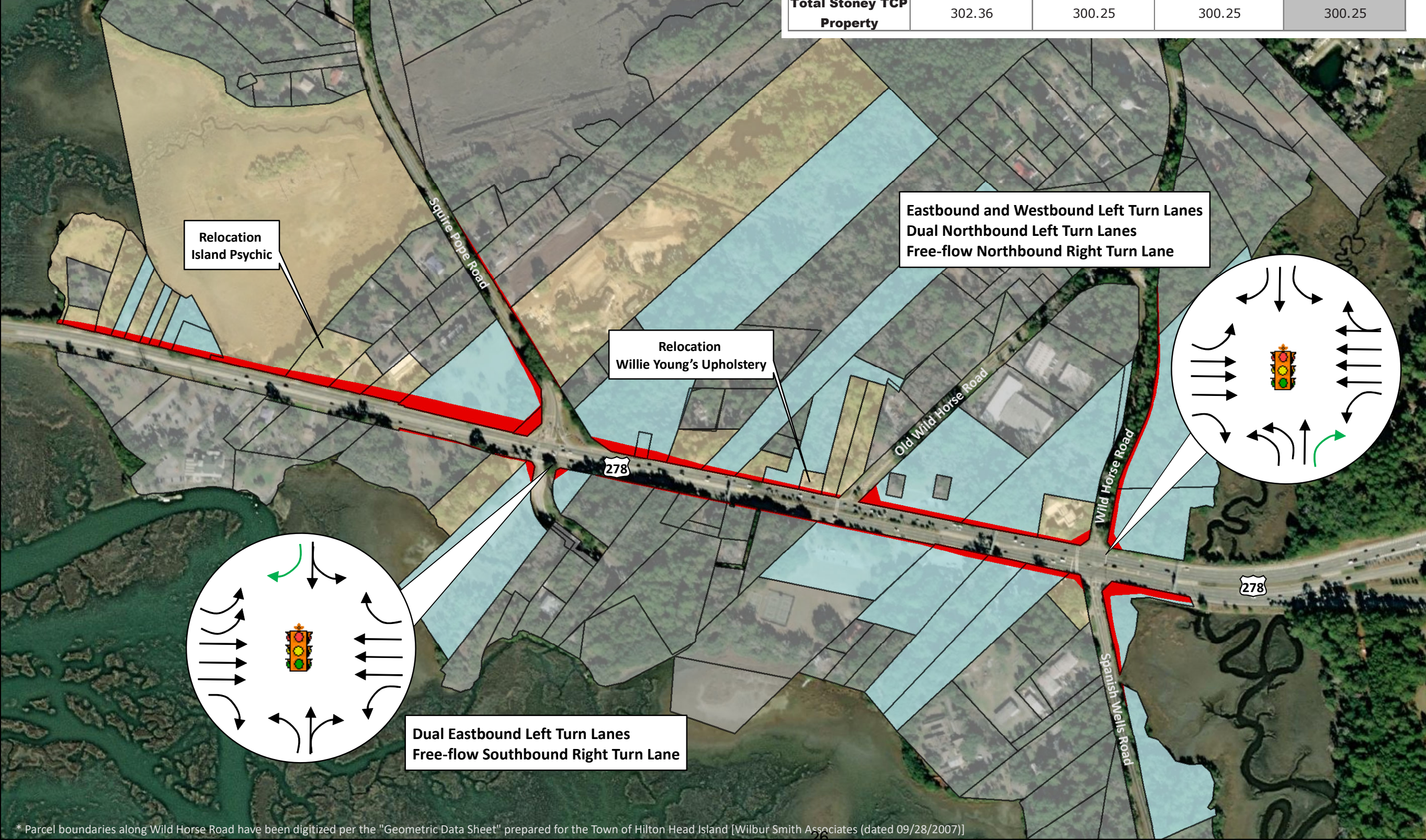
ROW Impacts within the Stoney Community				
	RPA 4A (as shown in the EA)	RPA 4A (as updated along Wild Horse Road)	Intersection Option 1	Intersection Option 2
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Legend

- Proposed Right-Of-Way (ROW) Impacts

Stoney Traditional Cultural Property Parcels

- Parcels Not Impacted by ROW
- Publicly Owned Parcels Impacted by ROW
- Privately Owned Parcels Impacted by ROW



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