



William Hilton Parkway Gateway Corridor Independent Review- Town Council Meeting

September 17, 2024



Recommendation

Consideration of a Resolution to Accept the Final Report for the William Hilton Parkway Gateway Corridor Project Independent Study



Outline

- Update on Project Progress
- Review of Downstream Impacts to Task 4 Intersections
- Mitigation Solutions for Local Intersections
- Final Report Results for Entire Study Area
- Questions



Update on Project Progress

(Lochmueller Tasks Since 6/17/2024 Presentation to Town Council)

- ✓ Completed traffic analyses, modeling (Synchro/VISSIM), and related findings to determine proposed mitigation strategies for 2045 Build Year conditions at intersections downstream of Cross-Island Parkway
- ✓ Prepared Traffic Operations & Safety Report (deliverable for Task 5.1), which comprehensively details all work completed by Lochmueller as a part of this project
- ✓ Presented Final Report, including Findings and Recommendations to Advisory Committee on August 14, 2024

Update on Overall Project Progress (as of 9/17/24)

Overall ~100% Complete

100%

- **Task #1: Project Initiation and Coordination**

- ~100% Complete

100%

- **Task #2: Review of Travel Demand Model & Evaluation of 2023 Existing Operating Conditions (Entire Study Area)**

- 100% Complete

100%

- **Task #3: Traffic Model and Operational Update – Modified Original Project Study Area**

- 100% Complete

100%

- **Task #4: Traffic Model and Operational Update – Entire Project Study Area**

- 100% Complete

100%

Update on Overall Project Progress (as of 9/17/24)

- **Task #5: Final Report**

- ~100% Complete

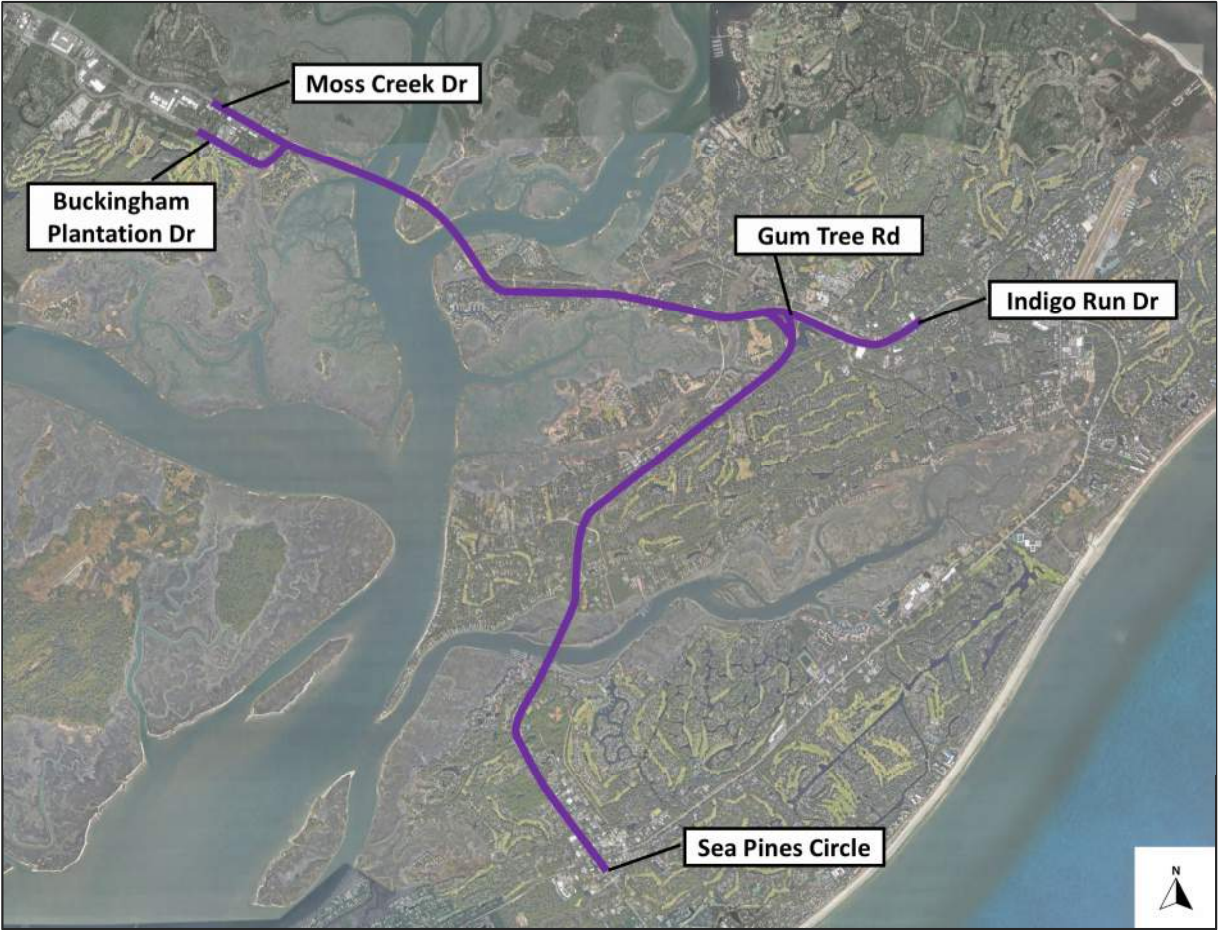


- Presentation of final report findings to Town Council

Review of Downstream Impacts to Task 4 Intersections

- Lochmueller previously analyzed four alternatives intended to improve the operating conditions along US 278 between Moss Creek Dr and Gum Tree Rd.
- After review of the findings and discussion with SCDOT, Lochmueller was directed by the Town of Hilton Head Island to pursue Alternative with modifications to provide a single eastbound left-turn lane and a single southbound right-turn lane at US 278 at Squire Pope Rd.
- Lochmueller then evaluated the impacts the Alternative would have on the entire project study area and determined what, if any, improvements should be made to accommodate the 2045 forecasted traffic.

Review of Downstream Impacts to Task 4 Intersections



Review of Downstream Impacts to Task 4 Intersections

- VISSIM Travel Time Results:

Corridor		2045 No Build Simulated travel time (secs)		2045 Modified Alternative 1 Simulated Travel Time (secs)		% Difference	
		AM	PM	AM	PM	AM	PM
		1579 [26.3]			631 [10.5]		
	WB	584 [9.7]	1544 [25.7]	597 [10]	616 [10.3]	2.23%	
Hilton Parkway @Moss Creek to Cross Island Parkway @Sea Pine	SB	1984 [33.1]	873 [14.6]	1387 [23.1]	874 [14.6]		
			2465 [41.1]	848 [14.1]	904 [15.1]		

Review of Downstream Impacts to Task 4 Intersections

- Overall, even with no improvements in place east of Gumtree Road or along Cross Island Parkway, it was found that the travel times would significantly improve when compared to the 2045 no build scenario.
- The intersections would be expected to operate acceptably overall. However, the eastbound and westbound approaches between Wilborn Road and Pembroke Drive are expected to experience long queues and be over capacity in the year 2045.
- Additionally, the existing roundabout at Palmetto Bay Road and Sea Pines Circle is expected to fail during both the AM and PM peak hours. As a result of the failing roundabout, the queue lengths are expected to extend beyond nearby intersections.
- Therefore, Lochmueller evaluated two options with potential solutions to the local intersections downstream of Gum Tree Road and Cross Island Parkway to help mitigate the expected long queues and delays.

Mitigation Solutions for Local Intersections – Option A

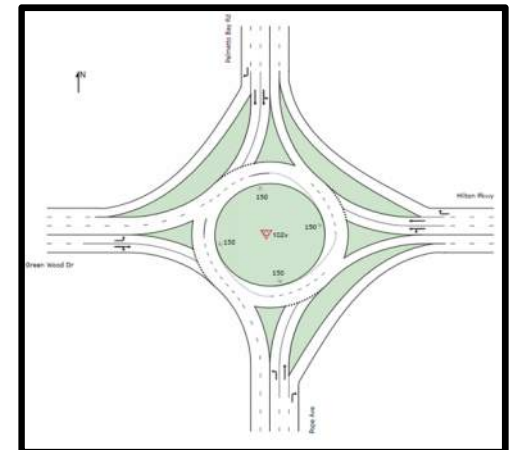
- Option A:

- William Hilton Parkway & Pembroke Drive:

- Reconfigure the northbound approach to provide dual northbound left-turn lanes, one through lane, and one right-turn lane
 - In addition to the roadway widening, this will require relocation of the shared use path on the east side, adjustments to signal equipment and additional ROW on the south leg
 - Estimated preliminary probable opinion of cost (including ROW) = \$750,000
 - Estimated construction duration = 4 months

- Palmetto Bay Road & William Hilton Parkway (Sea Pines Circle):

- Provide a two-lane roundabout
 - Each approach should have a right-turn bypass, with the exception of the west leg
 - This will require pavement widening to the inside of the traffic circle and on each of the four legs of the intersection to accommodate the additional lane
 - Estimated preliminary probable opinion of cost = \$2,000,000
 - Estimated construction duration = 8 months



Option A Operating Conditions (VISSIM)

- VISSIM Travel Time Results:
 - Travel times along William Hilton Parkway between Moss Creek Drive and Indigo Run Drive are expected to improve by approximately:
 - 17.2 minutes during the AM peak hour in the eastbound direction
 - 15.7 minutes during the PM peak hour in the westbound direction
 - The travel times along William Hilton Parkway at Moss Creek to the Cross Island Parkway at Sea Pines Circle are expected to improve by approximately:
 - 19.2 minutes during the AM peak hour in the southbound direction
 - 27.0 minutes during the PM peak hour in the northbound direction

Corridor		2045 No Build Simulated travel time (secs) [min]		2045 Alternative 1 Option A Simulated Travel Time (secs) [min]		% Difference	
		AM	PM	AM	PM	AM	PM
Hilton Parkway between Moss Creek and Indigo Run	EB	1579 [26.3]	642 [10.7]	548 [9.1]	589 [9.8]	-65.31%	-8.21%
	WB	584 [9.7]	1544 [25.7]	556 [9.3]	600 [10]	-4.85%	-61.12%
Hilton Parkway @Moss Creek to Cross Island Parkway @Sea Pine	SB	1984 [33.1]	873 [14.6]	833 [13.9]	856 [14.3]	-58.01%	-1.93%
	NB	823 [13.7]	2465 [41.1]	814 [13.6]	845 [14.1]	-1.04%	-65.72%

Mitigation Solutions for Local Intersections – Option B

- **Option B:**

- Extend the 6-lane section from Gumtree Road past Pembroke Drive. The 6-lane section can taper back to a 4-lane section at Central Avenue.
- In addition to the roadway widening, this will require adjustments to the shared use path on the north side of the road, new traffic signals at Wilborn and Pembroke, temporary construction easements and possibly new ROW.
 - Estimated preliminary probable opinion of cost = \$3,000,000
 - Estimated construction duration = 6 months
- William Hilton Parkway & Wilborn Road:
 - Provide dual southbound right-turn lanes
 - In addition to the roadway widening, this will require adjustments to the shared use path on the east side of the road, temporary construction easements and possibly new ROW
 - Estimated preliminary probable opinion of cost = \$1,000,000
 - Estimated construction duration = 4 months

Mitigation Solutions for Local Intersections – Option B (cont.)

- **Option B:**

- Palmetto Bay Road & William Hilton Parkway (Sea Pines Circle):
 - Signalize the intersection rather than the existing roundabout
 - Provide a left-turn lane, two thru lanes, and a right-turn lane for every approach except the EB approach, which will have dual left-turn lanes
 - In addition to the roadway widening on each leg of the intersection to accommodate the addition of turn lane, this will require adjustments to the shared use path on the east side of the south leg, new traffic signals, temporary construction easements, and new ROW on the north and west legs
 - Estimated preliminary probable opinion of cost = \$6,000,000
 - Estimated construction duration = 12 months



Option B Operating Conditions (VISSIM)

- VISSIM Travel Time Results:
 - Travel times along William Hilton Parkway between Moss Creek Drive and Indigo Run Drive are expected to improve by approximately:
 - 17.4 minutes during the AM peak hour in the eastbound direction
 - 16.5 minutes during the PM peak hour in the westbound direction
 - The travel times along William Hilton Parkway at Moss Creek to the Cross Island Parkway at Sea Pines Circle are expected to improve by approximately:
 - 19.4 minutes during the AM peak hour in the southbound direction
 - 27.0 minutes during the PM peak hour in the northbound direction

Corridor		2045 No Build Simulated travel time (secs) [min]		2045 Modified Alternative 1 Option B Simulated Travel Time (secs) [min]		% Difference	
		AM	PM	AM	PM	AM	PM
Hilton Parkway between Moss Creek and Indigo Run	EB	1579 [26.3]	642 [10.7]	534 [8.9]	571 [9.5]	-66.18%	-11.06%
	WB	584 [9.7]	1544 [25.7]	547 [9.1]	552 [9.2]	-6.34%	-64.25%
Hilton Parkway @Moss Creek to Cross Island Parkway @Sea Pine	SB	1984 [33.1]	873 [14.6]	820 [13.7]	840 [14]	-58.67%	-3.78%
	NB	823 [13.7]	2465 [41.1]	816 [13.6]	848 [14.1]	-0.86%	-65.60%

Final Travel Time Comparison

Corridor		Hilton Parkway between Moss Creek and Indigo Run		% Difference to 2045 No Build		Hilton Parkway @Moss Creek to Cross Island Parkway @Sea Pine		% Difference to 2045 No Build	
		EB	WB	EB	WB	SB	NB	SB	NB
2045 No Build Simulated travel time (secs) [min]	AM	1579 [26.3]	584 [9.7]	-	-	1984 [33.1]	823 [13.7]	-	-
	PM	642 [10.7]	1544 [25.7]	-	-	873 [14.6]	2465 [41.1]	-	-
2045 Alternative Simulated Travel Time (secs) [min]	AM	628 [10.5]	597 [10]	-60.23%	2.23%	1387 [23.1]	848 [14.1]	-30.09%	3.04%
	PM	631 [10.5]	616 [10.3]	-1.71%	-60.10%	874 [14.6]	904 [15.1]	0.11%	-63.33%
2045 Alternative - Option A Simulated Travel Time (secs) [min]	AM	548 [9.1]	556 [9.3]	-65.31%	-4.85%	833 [13.9]	814 [13.6]	-58.01%	-1.04%
	PM	589 [9.8]	600 [10]	-8.21%	-61.12%	856 [14.3]	845 [14.1]	-1.93%	-65.72%
2045 Alternative - Option B Simulated Travel Time (secs) [min]	AM	534 [8.9]	547 [9.1]	-66.18%	-6.34%	820 [13.7]	816 [13.6]	-58.67%	-0.86%
	PM	571 [9.5]	552 [9.2]	-11.06%	-64.25%	840 [14]	848 [14.1]	-3.78%	-65.60%

Neither Option A nor Option B is expected to have a meaningful impact on travel times between Moss Creek and Indigo run. But they are expected to have a meaningful impact from Moss Creek to Cross Island @ Sea Pines

Conclusions

- Lochmueller Group was directed to pursue Alternative with modifications to provide a single eastbound left-turn lane and a single southbound right-turn lane at William Hilton Parkway at Squire Pope Road
- With the recommended improvements under Alternative in place, the rest of the downstream intersections would be expected to operate acceptably overall. However, the eastbound and westbound approaches between Wilborn Road and Pembroke Drive are expected to experience long queues in the year 2045 and the existing roundabout at Palmetto Bay Road and Sea Pines Circle is expected to fail during both the AM and PM peak hours
- Two additional options for mitigation are provided for The Town of Hilton Head Island's consideration in the final report to help ease congestion between Gumtree Road and Indigo Run Drive as well as along the Cross Island Parkway towards Sea Pines Circle.
- **Physical improvements east of Gum Tree Road have a marginal impact on the travel times along the William Hilton Parkway corridor between Moss Creek and Indigo Run but can improve key intersection performance and help reduce queueing.**
- **Improvements such as expanding the existing roundabout at Sea Pines Circle or signaling the intersection would significantly improve the travel times along Cross Island Parkway.**

Recommendation

Consideration of a Resolution to Accept the Final Report for the William Hilton Parkway Gateway Corridor Project Independent Study





QUESTIONS?



<https://www.islandpacket.com/news/local/traffic/article235209867.html>

APPENDIX

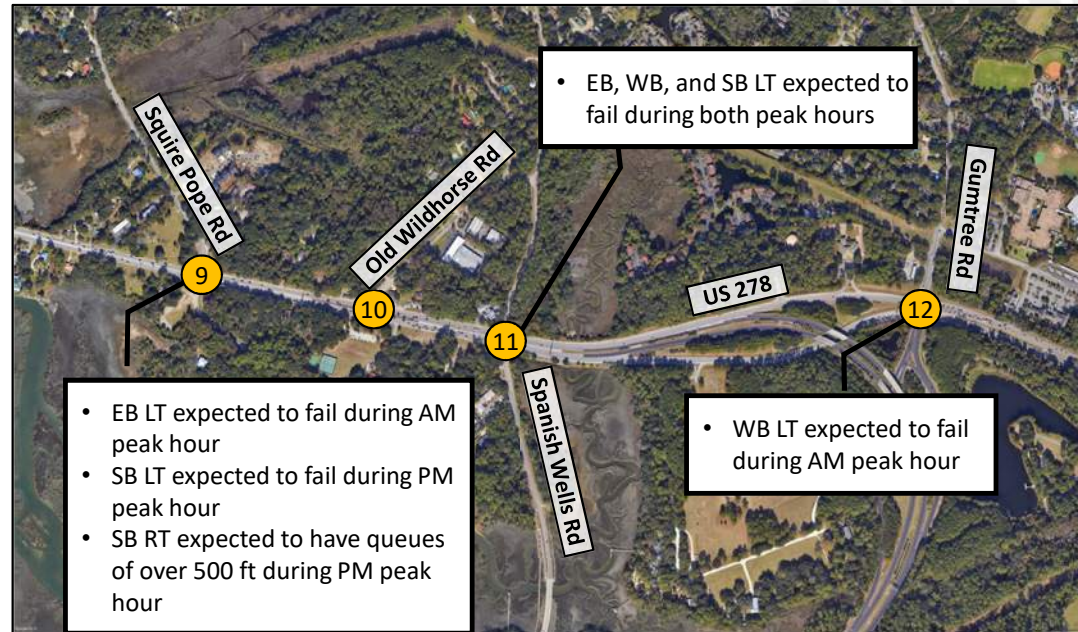


<https://www.islandpacket.com/news/local/traffic/article235209867.html>



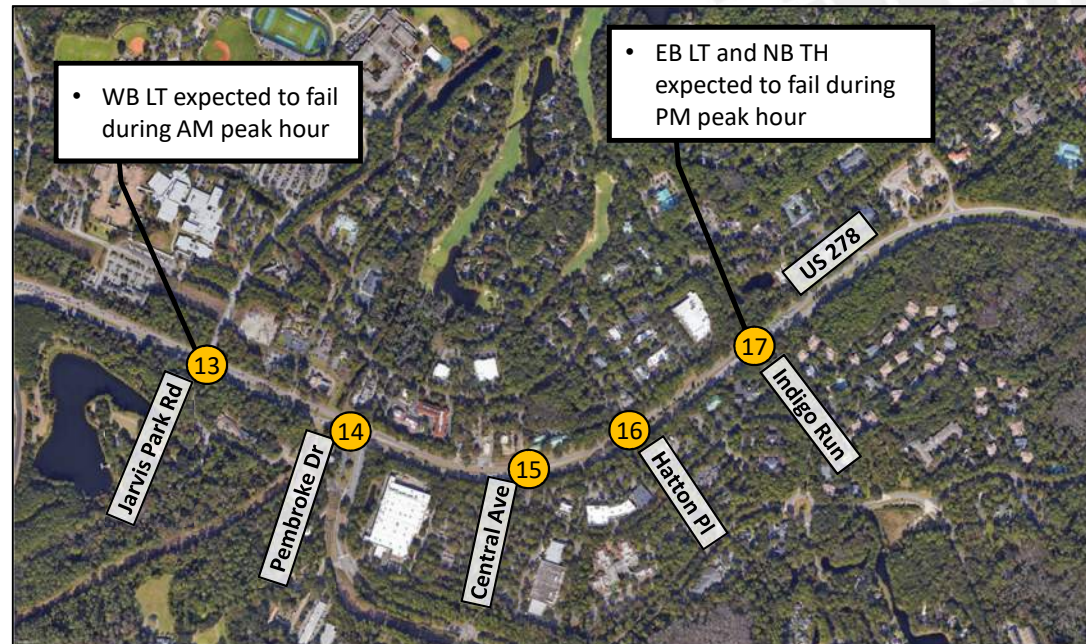
Downstream Impacts to Task 4 Intersections

Intersection & Movements	LOS (Delay, sec) [95 th Queue Length, ft] {Max Queue, ft}	
	AM Peak Hour	PM Peak Hour
9: Chamberlin Dr/Squire Pope Rd & Hilton Pkwy (signal)		
Overall Intersection	A (8.4)	B (11.8)
Eastbound Approach	A (7.0) [102] {697}	B (11.3) [124] {484}
Westbound Approach	A (8.2) [28] {237}	A (5.8) [36] {524}
Northbound Approach	C (30.4) [<25] {56}	E (67.0) [<25] {109}
Southbound Approach	C (22.6) [<25] {170}	D (51.1) [128] {521}
10: Old Wild Horse Rd & Hilton Pkwy (un signalized)		
Southbound Approach	A (4.7) [<25] {56}	B (12.5) [<25] {32}
11: Spanish Wells Rd/Wild Horse Rd & Hilton Pkwy (signal)		
Overall Intersection	B (16.6)	C (23.8)
Eastbound Approach	B (11.0) [106] {998}	C (27.9) [198] {861}
Westbound Approach	B (11.2) [56] {248}	B (11.9) [84] {779}
Northbound Approach	D (48.6) [45] {135}	E (65.2) [77] {196}
Southbound Approach	E (75.9) [74] {292}	E (60.6) [49] {197}
12: Gumtree Rd & Hilton Pkwy (signal)		
Overall Intersection	D (37.1)	D (43.8)
Eastbound Approach	C (33.4) [164] {682}	E (57.1) [184] {562}
Westbound Approach	D (40.8) [130] {369}	D (35.4) [236] {786}
Northbound Approach	C (26.6) [61] {264}	D (37.3) [98] {327}
Southbound Approach	D (50.2) [93] {302}	D (52.7) [119] {453}



Downstream Impacts to Task 4 Intersections

Intersection & Movements	LOS (Delay, sec) [95 th Queue Length, ft] {Max Queue, ft}	
	AM Peak Hour	PM Peak Hour
13: Jarvis Park Rd/Wilborn Rd & Hilton Pkwy (signal)		
Overall Intersection	C (26.7)	B (18.8)
Eastbound Approach	C (25.4) [439] {1480}	B (16.3) [103] {735}
Westbound Approach	C (21.6) [101] {686}	B (18.2) [295] {1202}
Northbound Approach	E (68.6) [43] {170}	F (87.6) [56] {191}
Southbound Approach	D (39.1) [66] {228}	B (19.2) [29] {112}
14: Pembroke Dr/Museum St & Hilton Pkwy (signal)		
Overall Intersection	C (23.1)	C (24.5)
Eastbound Approach	B (18.9) [403] {1224}	B (17.2) [128] {910}
Westbound Approach	C (20.9) [75] {532}	C (21.6) [171] {903}
Northbound Approach	D (53.1) [71] {257}	E (60.1) [92] {299}
Southbound Approach	C (30.4) [<25] {89}	D (40.3) [<25] {111}
15: Central Ave & Hilton Pkwy (un signalized)		
Eastbound Left Turn	A (7.1) [<25] {<25}	C (19.3) [<25] {25}
Westbound Left Turn	C (24.1) [<25] {26}	A (9.5) [<25] {<25}
Northbound Right Turn	C (16.5) [<25] {27}	B (13.9) [<25] {32}
Southbound Right Turn	B (12.5) [<25] {45}	C (18.3) [<25] {38}
16: Hatton Pl/Merchant St & Hilton Pkwy (un signalized)		
Northbound Right Turn	A (9.5) [<25] {28}	A (7.8) [<25] {63}
Southbound Right Turn	B (11.3) [<25] {36}	C (22.9) [<25] {41}
17: Indigo Run Dr/Whooping Crane Way & Hilton Pkwy (signal)		
Overall Intersection	C (25.1)	D (36.1)
Eastbound Approach	C (21.1) [134] {846}	C (33.6) [128] {751}
Westbound Approach	B (17.3) [53] {359}	C (28.0) [207] {887}
Northbound Approach	E (56.6) [33] {114}	E (66.9) [65] {268}
Southbound Approach	D (47.7) [56] {192}	E (57.6) [77] {264}



*Highlighted cells indicate that the maximum queues are expected to extend into the next intersection

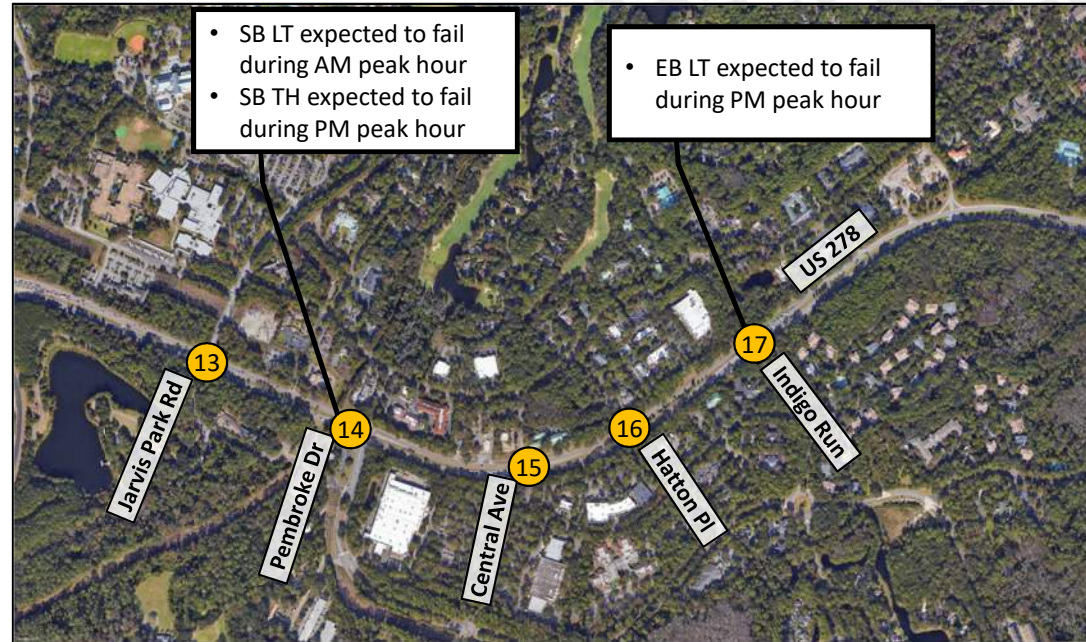
Downstream Impacts to Task 4 Intersections

Intersection & Movements	LOS (Delay, sec) [95 th Queue Length, ft] {Max Queue, ft}	
	AM Peak Hour	PM Peak Hour
27: Palmetto Bay Rd & Target Rd (signal)		
Overall Intersection	C (29.0)	B (19.0)
Eastbound Approach	D (36.9) [1380] {1512}	B (15.9) [142] {823}
Westbound Approach	B (12.9) [39] {249}	B (15.8) [85] {539}
Northbound Approach	C (26.6) [<25] {105}	D (39.5) [65] {263}
Southbound Approach	D (35.7) [34] {151}	C (25.5) [37] {140}
28: Palmetto Bay Rd & Dunnagans Alley (un signalized)		
Westbound Left Turn	F (1,033.8) [80] {183}	F (101.3) [<25] {99}
Westbound Right Turn	F (91.9) [109] {217}	B (13.3) [35] {134}
Southbound Left Turn	C (22.0) [278] {513}	B (13.7) [29] {465}
29: Palmetto Bay Rd & Hilton Pkwy (Sea Pines Circle, RAB)		
Overall Intersection	F (53.4)	F (79.2)
Eastbound Approach	F (314.9) [809] {838}	F (179.8) [805] {838}
Westbound Approach	B (14.0) [56] {420}	F (189.7) [1644] {1658}
Northbound Approach	A (4.1) [<25] {209}	F (52.9) [463] {788}
Southbound Approach	C (18.5) [307] {461}	A (9.1) [111] {460}



Option A Operating Conditions (VISSIM)

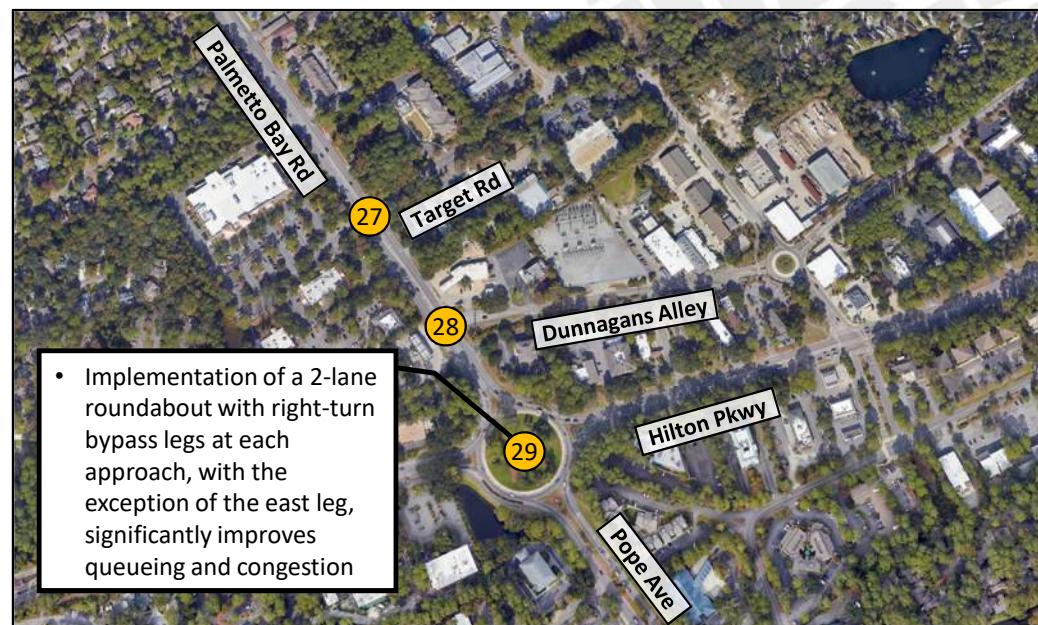
Intersection & Movements	LOS (Delay, sec) [95 th Queue Length, ft] {Max Queue, ft}	
	AM Peak Hour	PM Peak Hour
13: Jarvis Park Rd/Wilborn Rd & Hilton Pkwy (signal)		
Overall Intersection	B (15.5)	B (15.4)
Eastbound Approach	A (9.0) [48] {424}	A (9.8) [51] {410}
Westbound Approach	B (13.8) [62] {635}	B (16.8) [156] {1076}
Northbound Approach	E (74.8) [46] {179}	F (81.9) [53] {189}
Southbound Approach	D (40.7) [72] {233}	B (20.0) [31] {115}
14: Pembroke Dr/Museum St & Hilton Pkwy (signal)		
Overall Intersection	B (19.2)	C (20.8)
Eastbound Approach	A (7.8) [80] {962}	A (7.9) [36] {439}
Westbound Approach	C (24.4) [115] {629}	C (21.8) [286] {937}
Northbound Approach	E (68.3) [84] {267}	E (60.7) [85] {301}
Southbound Approach	D (39.1) [27] {119}	D (48.3) [37] {137}
15: Central Ave & Hilton Pkwy (un signalized)		
Eastbound Left Turn	A (9.9) [<25] {<25}	B (15.7) [<25] {<25}
Westbound Left Turn	C (21.8) [<25] {<25}	B (16.9) [<25] {<25}
Northbound Right Turn	C (17.9) [<25] {27}	B (13.4) [<25] {32}
Southbound Right Turn	B (12.5) [<25] {44}	B (19.3) [<25] {41}
16: Hatton Pl/Merchant St & Hilton Pkwy (un signalized)		
Northbound Right Turn	A (7.7) [<25] {<25}	A (7.0) [<25] {64}
Southbound Right Turn	B (11.4) [<25] {37}	B (15.8) [<25] {35}
17: Indigo Run Dr/Whooping Crane Way & Hilton Pkwy (signal)		
Overall Intersection	B (17.8)	C (30.5)
Eastbound Approach	A (6.8) [<25] {324}	C (20.9) [133] {467}
Westbound Approach	B (14.7) [43] {349}	C (26.5) [192] {872}
Northbound Approach	E (58.4) [34] {122}	E (58.3) [53] {208}



Even with the adaptive signals and reconfiguration of the northbound approach at Pembroke Dr to allow more of the cycle length to go to the mainline, long queues would still be expected between Gumtree Rd and Pembroke Ave. However, it is not expected that the maximum queue would extend into nearby intersections.

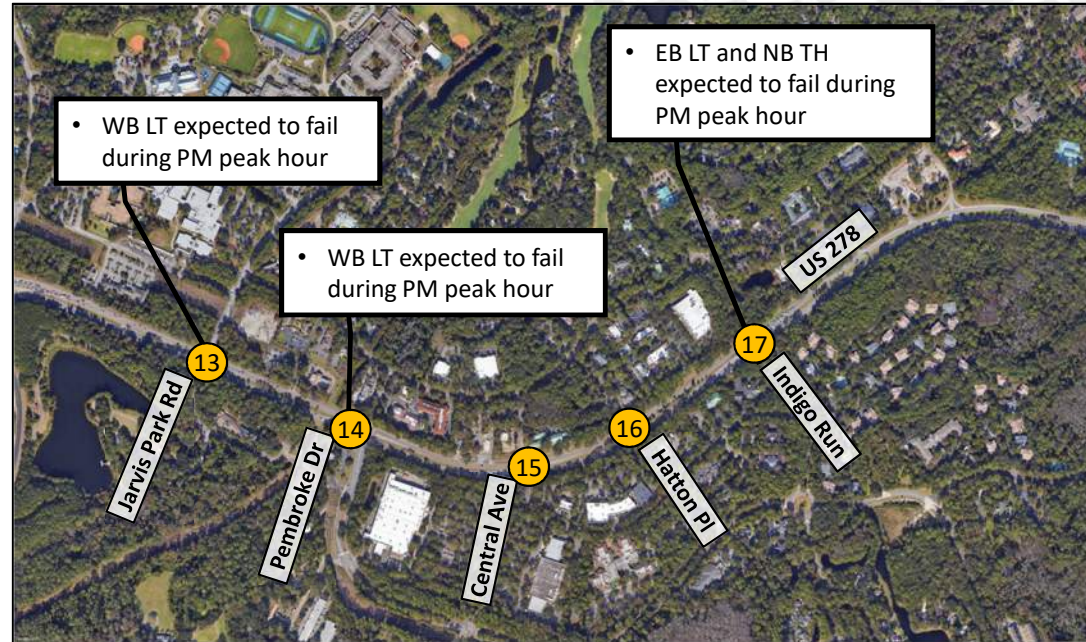
Option A Operating Conditions (VISSIM)

Intersection & Movements	LOS (Delay, sec) [95 th Queue Length, ft] {Max Queue, ft}	
	AM Peak Hour	PM Peak Hour
27: Palmetto Bay Rd & Target Rd (signal)		
Overall Intersection	B (17.8)	C (30.5)
Eastbound Approach	A (6.8) [<25] {324}	C (20.9) [133] {467}
Westbound Approach	B (14.7) [43] {349}	C (26.5) [192] {872}
Northbound Approach	E (58.4) [34] {122}	E (58.3) [53] {208}
Southbound Approach	D (53.3) [64] {223}	E (58.5) [79] {274}
28: Palmetto Bay Rd & Dunnagans Alley (un signalized)		
Westbound Left Turn	E (40.2) [<25] {34}	E (56.1) [<25] {79}
Westbound Right Turn	A (8.0) [<25] {69}	B (14.6) [<25] {113}
Southbound Left Turn	A (7.0) [<25] {153}	B (15.4) [<25] {37}
29: Palmetto Bay Rd & Hilton Pkwy (Sea Pines Circle, RAB)		
Overall Intersection	A (8.9)	B (10.8)
Eastbound Approach	D (29.0) [75] {342}	C (29.8) [122] {514}
Westbound Approach	A (5.0) [<25] {123}	B (10.2) [29] {191}
Northbound Approach	A (2.8) [<25] {78}	A (4.4) [<25] {158}
Southbound Approach	A (6.6) [28] {296}	A (5.5) [<25] {231}



Option B Operating Conditions (VISSIM)

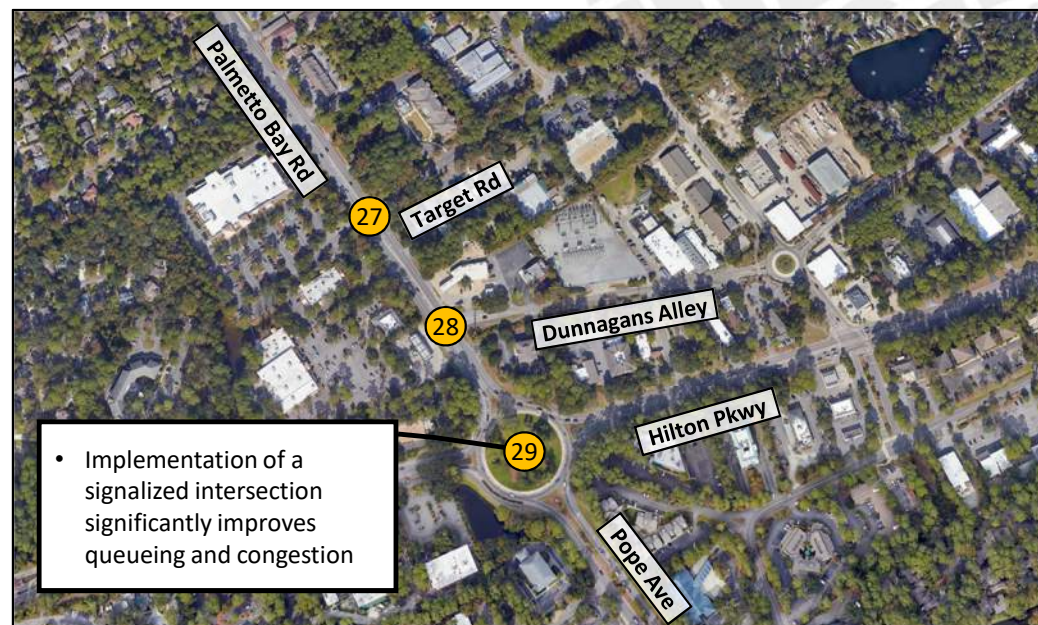
Intersection & Movements	LOS (Delay, sec) [95 th Queue Length, ft] {Max Queue, ft}	
	AM Peak Hour	PM Peak Hour
13: Jarvis Park Rd/Wilborn Rd & Hilton Pkwy (signal)		
Overall Intersection	B (17.3)	B (12.3)
Eastbound Approach	B (12.8) [139] {463}	A (9.1) [53] {239}
Westbound Approach	A (9.8) [30] {434}	A (6.7) [30] {407}
Northbound Approach	E (73.3) [30] {175}	E (67.9) [30] {168}
Southbound Approach	D (49.7) [72] {248}	D (44.6) [40] {172}
14: Pembroke Dr/Museum St & Hilton Pkwy (signal)		
Overall Intersection	C (20.5)	B (16.3)
Eastbound Approach	A (9.3) [38] {307}	B (12.7) [44] {306}
Westbound Approach	C (29.2) [87] {440}	A (7.7) [31] {214}
Northbound Approach	E (58.3) [79] {284}	E (59.5) [93] {320}
Southbound Approach	C (34.4) [<25] {105}	D (36.6) [<25] {127}
15: Central Ave & Hilton Pkwy (un signalized)		
Eastbound Left Turn	B (12.6) [<25] {27}	B (10.5) [<25] {<25}
Westbound Left Turn	C (23.8) [<25] {27}	B (12.7) [<25] {<25}
Northbound Right Turn	C (18.5) [<25] {30}	B (13.7) [<25] {32}
Southbound Right Turn	A (3.6) [<25] {<25}	A (5.6) [<25] {<25}
16: Hatton Pl/Merchant St & Hilton Pkwy (un signalized)		
Northbound Right Turn	A (9.5) [<25] {28}	A (8.2) [<25] {66}
Southbound Right Turn	B (10.6) [<25] {38}	B (15.2) [<25] {35}
17: Indigo Run Dr/Whooping Crane Way & Hilton Pkwy (signal)		
Overall Intersection	B (16.9)	D (35.7)
Eastbound Approach	A (5.2) [<25] {278}	C (34.5) [154] {810}
Westbound Approach	B (15.7) [47] {355}	C (26.8) [195] {845}
Northbound Approach	E (57.1) [32] {106}	E (67.3) [64] {267}



By extending the 6-lane section east towards Central Avenue, the long queue lengths between Gumtree Rd and Pembroke Dr would be mitigated.

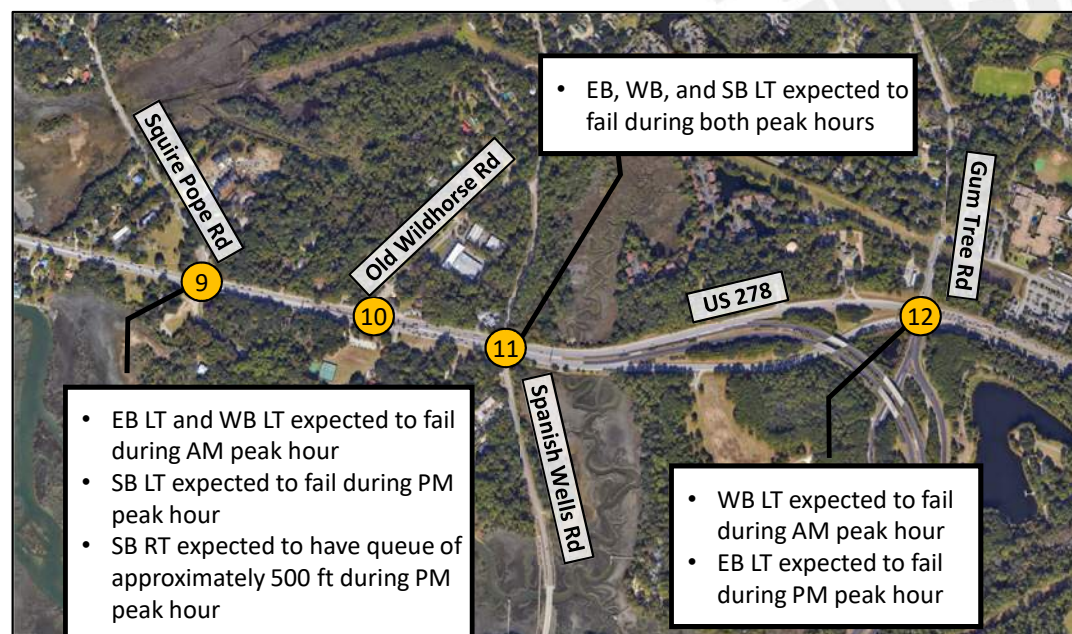
Option B Operating Conditions (VISSIM)

Intersection & Movements	LOS (Delay, sec) [95 th Queue Length, ft] {Max Queue, ft}	
	AM Peak Hour	PM Peak Hour
27: Palmetto Bay Rd & Target Rd (signal)		
Overall Intersection	A (8.5)	B (16.6)
Eastbound Approach	D (35.6) [<25] {125}	D (41.5) [67] {250}
Westbound Approach	D (39.1) [44] {154}	C (29.2) [42] {148}
Northbound Approach	A (5.0) [<25] {236}	B (13.2) [82] {490}
Southbound Approach	A (4.4) [28] {488}	B (11.9) [68] {432}
28: Palmetto Bay Rd & Dunnagans Alley (un signalized)		
Westbound Left Turn	D (30.3) [<25] {34}	C (34.3) [<25] {64}
Westbound Right Turn	A (8.3) [<25] {68}	B (12.8) [<25] {98}
Southbound Left Turn	A (6.2) [<25] {109}	B (10.6) [<25] {46}
29: Palmetto Bay Rd & Hilton Pkwy (Sea Pines Circle, RAB)		
Overall Intersection	C (24.2)	C (25.0)
Eastbound Approach	D (45.3) [93] {237}	D (36.7) [90] {283}
Westbound Approach	D (37.7) [104] {265}	C (30.2) [107] {295}
Northbound Approach	B (15.8) [31] {204}	C (24.7) [88] {382}
Southbound Approach	B (14.7) [62] {293}	B (15.0) [55] {361}



Option A Operating Conditions (VISSIM)

Intersection & Movements	LOS (Delay, sec) [95 th Queue Length, ft] {Max Queue, ft}	
	AM Peak Hour	PM Peak Hour
9: Chamberlin Dr/Squire Pope Rd & Hilton Pkwy (signal)		
Overall Intersection	A (9.4)	B (11.8)
Eastbound Approach	A (6.9) [100] {676}	B (11.0) [117] {489}
Westbound Approach	B (11.7) [41] {263}	A (6.2) [40] {552}
Northbound Approach	C (30.8) [<25] {56}	E (67.0) [<25] {109}
Southbound Approach	C (22.3) [<25] {171}	D (52.3) [132] {518}
10: Old Wild Horse Rd & Hilton Pkwy (un signalized)		
Southbound Approach	A (4.6) [<25] {50}	B (11.2) [<25] {32}
11: Spanish Wells Rd/Wild Horse Rd & Hilton Pkwy (signal)		
Overall Intersection	B (16.6)	C (26.4)
Eastbound Approach	B (11.2) [109] {990}	C (28.2) [206] {845}
Westbound Approach	B (11.2) [56] {207}	B (17.1) [113] {525}
Northbound Approach	D (48.4) [45] {140}	E (65.2) [77] {196}
Southbound Approach	E (76.0) [74] {292}	E (60.6) [49] {197}
12: Gumtree Rd & Hilton Pkwy (signal)		
Overall Intersection	C (31.5)	D (37.2)
Eastbound Approach	C (31.3) [168] {705}	E (58.2) [187] {559}
Westbound Approach	C (24.2) [90] {261}	B (19.9) [126] {651}
Northbound Approach	C (32.4) [89] {305}	D (41.2) [143] {359}
Southbound Approach	D (48.6) [91] {306}	D (51.9) [117] {428}



Option B Operating Conditions (VISSIM)

Intersection & Movements	LOS (Delay, sec) [95 th Queue Length, ft] {Max Queue, ft}	
	AM Peak Hour	PM Peak Hour
9: Chamberlin Dr/Squire Pope Rd & Hilton Pkwy (signal)		
Overall Intersection	A (7.1)	B (12.5)
Eastbound Approach	A (6.9) [101] {590}	B (11.3) [119] {513}
Westbound Approach	A (4.5) [<25] {158}	A (7.5) [58] {670}
Northbound Approach	C (33.2) [<25] {57}	E (67.0) [<25] {109}
Southbound Approach	C (23.2) [<25] {174}	D (50.9) [127] {508}
10: Old Wild Horse Rd & Hilton Pkwy (un signalized)		
Southbound Approach	A (5.5) [<25] {74}	B (12.6) [<25] {26}
11: Spanish Wells Rd/Wild Horse Rd & Hilton Pkwy (signal)		
Overall Intersection	C (20.6)	C (21.8)
Eastbound Approach	B (11.5) [112] {1032}	C (24.6) [158] {771}
Westbound Approach	C (23.7) [113] {536}	B (10.9) [162] {951}
Northbound Approach	D (48.6) [45] {135}	E (65.2) [77] {186}
Southbound Approach	E (75.9) [74] {292}	E (59.8) [49] {193}
12: Gumtree Rd & Hilton Pkwy (signal)		
Overall Intersection	C (30.9)	C (29.7)
Eastbound Approach	D (37.4) [160] {658}	C (33.0) [103] {485}
Westbound Approach	B (13.2) [53] {195}	B (18.8) [111] {575}
Northbound Approach	C (30.6) [90] {316}	D (40.5) [139] {359}
Southbound Approach	D (51.5) [99] {366}	D (51.4) [118] {443}

