



TOWN OF HILTON HEAD ISLAND

William Hilton Parkway Gateway Corridor Advisory Committee

TO: Advisory Committee
FROM: Shawn Colin
DATE: April 10, 2024
SUBJECT: Transmittal of Meeting Materials from the Lochmueller Group
Agenda

RECOMMENDATION:

This memo serves as the transmittal document to cover the materials submitted for consideration by the Lochmueller Group. This material will be covered at the April 10, 2024 meeting of the William Hilton Parkway Gateway Corridor Advisory Committee.

ATTACHMENTS:

1. The Lochmueller Group Document Transmittal Memo – dated April 5, 2024
2. Presentation by the Lochmueller Group – dated April 10, 2024

TRANSMITTAL

To: Shawn Colin, AICP – Town of Hilton Head Island
From: Nate Nohren, PE, PTOE
Date: April 5, 2024
Subject: Copy of Power Point Presentation for 4/10/2024 Advisory Committee Meeting
RE: William Hilton Parkway Gateway Corridor Independent Review

Hi Shawn,

Attached please find a PDF copy of the power point slides we will be presenting at the April 10, 2024, Advisory Committee meeting. The content provided within our presentation can be summarized as follows:

- **Update on Project Progress** – we will provide the Committee an update on what our team has been working on and/or completed since the March 27 Committee meeting. We also provide current status of percent-of-work completed to date, as well as on-going or upcoming work subtasks, relative to Tasks 1, 2, 3, and 4 as described in the Town approved Scope of Services Addendum (9/29/2023). Within this portion of the presentation, we will also speak to anticipated timeframes for delivery of the preliminary report of findings for the modified original project study area (Task #3.6), as well as all interim deliverables noted within Task #1.
- **Presentation of Traffic Operational Findings for Alternative #4** – given that traffic operations related evaluations for Alternative #4 were not shared at the March 27 Committee meeting, we will be presenting those on April 10. A traffic operations scoring matrix will be provided that compares key criteria between all four Alternatives.
- **Presentation of Roadway/ROW & Environmental Findings for All Alternatives** – we will present preliminary summaries of findings related to our Roadway/Right-of-Way (ROW) and Environmental reviews. We will be providing scoring matrices for the Roadway/ROW and Environmental categories, respectively, which compare key criteria between all four Alternatives.
- **Presentation of Overall Scoring Matrix for All Alternatives** – we will present our overall scoring matrix, which considers all key contributing factors associated with this project, and provides a ranking of the four Alternatives.

Please let me know if you have any questions regarding the information shared above. Otherwise, we look forward to speaking with you all on April 10

Sincerely,



Nate Nohren, PE, PTOE

William Hilton Parkway Gateway Corridor Independent Review Advisory Committee Meeting

April 10th, 2024



Agenda

- ❑ Update on Project Progress
- ❑ Presentation of Traffic Operational Findings for Alternative #4
- ❑ Presentation of Roadway/ROW Findings for All Alternatives
- ❑ Presentation of Environmental Findings for All Alternatives
- ❑ Presentation of Overall Scoring Matrix for All Alternatives

Update on Project Progress

(Key Tasks Completed & Continuing to Work on Since Last Meeting)

- ✓ Completed preliminary traffic analyses & Synchro modeling for proposed Alternative #4.
- ✓ Determined preliminary Roadway, ROW, and Environmental impacts for Alternatives #1, #2, #3, & #4.
- ✓ Developed preliminary scoring matrix for all Alternatives

Update on Overall Project Progress (as of 4/5/24)

Overall ~50% Complete



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

- ~75% Complete



- Key Subtasks On-Going:

- Remaining scheduled meetings with Town (Bi-Weekly) staff and Committee (Monthly)

- Key Subtask Deliverables Forthcoming:

- Brief technical memo formally documenting Lochmueller's professional opinion RE: viability of 4 lanes; second bridge; modifications to existing transit system, or other Transportation Demand Management strategies.

- Review of SCDOT Seismic Study (when rec'd), and documenting Lochmeuller's professional opinion RE: viability of retrofit/rehab of existing bridges.

- Deliverables to be provided prior to 5/8 Committee Meeting

Update on Overall Project Progress (as of 4/5/24)

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

- 100% Complete



Update on Overall Project Progress (as of 4/5/24)

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

- **~55% Complete**



- Key Subtasks On-Going:

- Formal documentation efforts related to all traffic, roadway, and environmental analyses completed to date

- Key Subtasks Forthcoming:

- Prepare Draft Summary of Findings Memo RE: Task #3 Alternatives Analysis to be provided prior to 5/8 Committee Meeting

- Final Summary of Findings Memo RE: Task #3 Alternatives Analysis to be presented to Town Council (June 2024, date TBD)

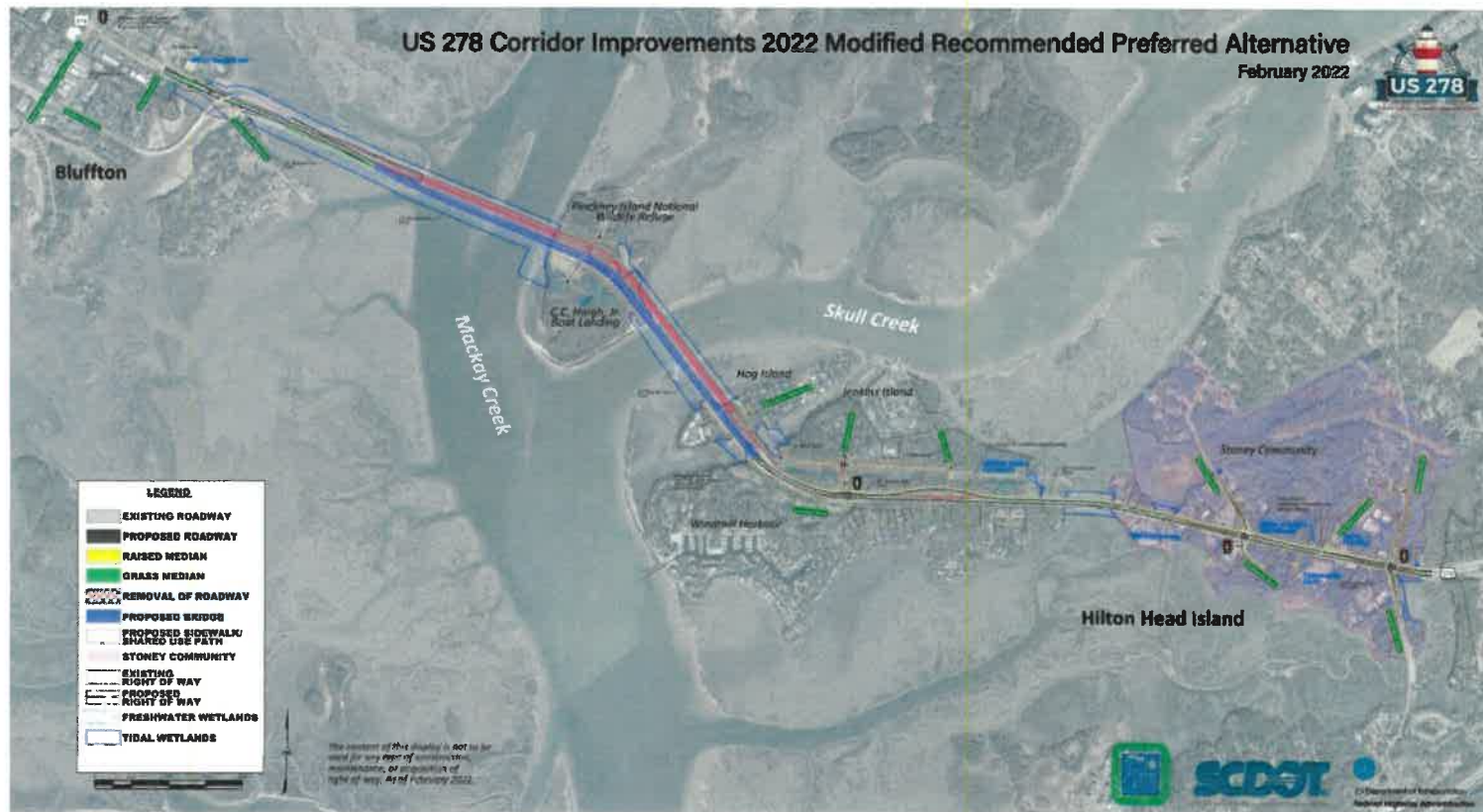
Update on Overall Project Progress (as of 4/5/24)

- **Task #4: Traffic Model and Operational Update – Entire Project Study Area**
 - Will commence immediately following 4/10 Committee meeting
 - Key Subtasks Forthcoming:
 - Selection of recommended Alternative from Task #3
 - Begin traffic analyses and modeling (Synchro & VISSIM) RE: 2045 Build Year conditions at intersections downstream of CIP.

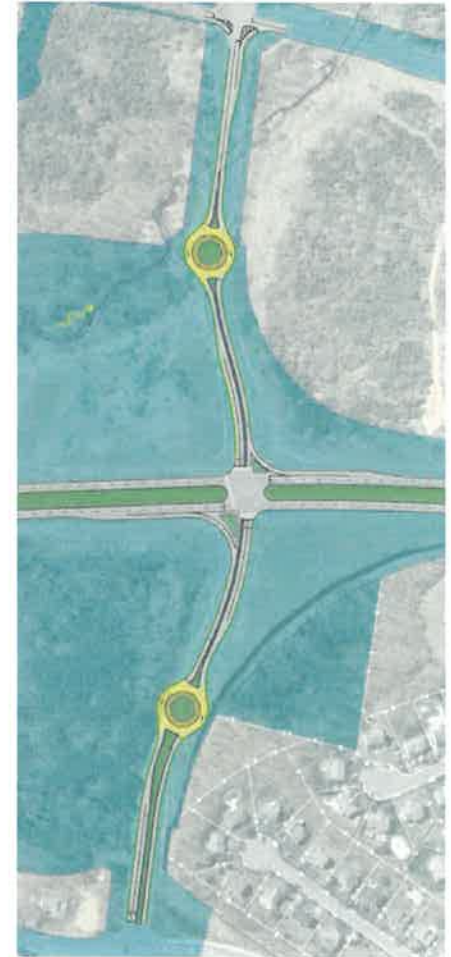
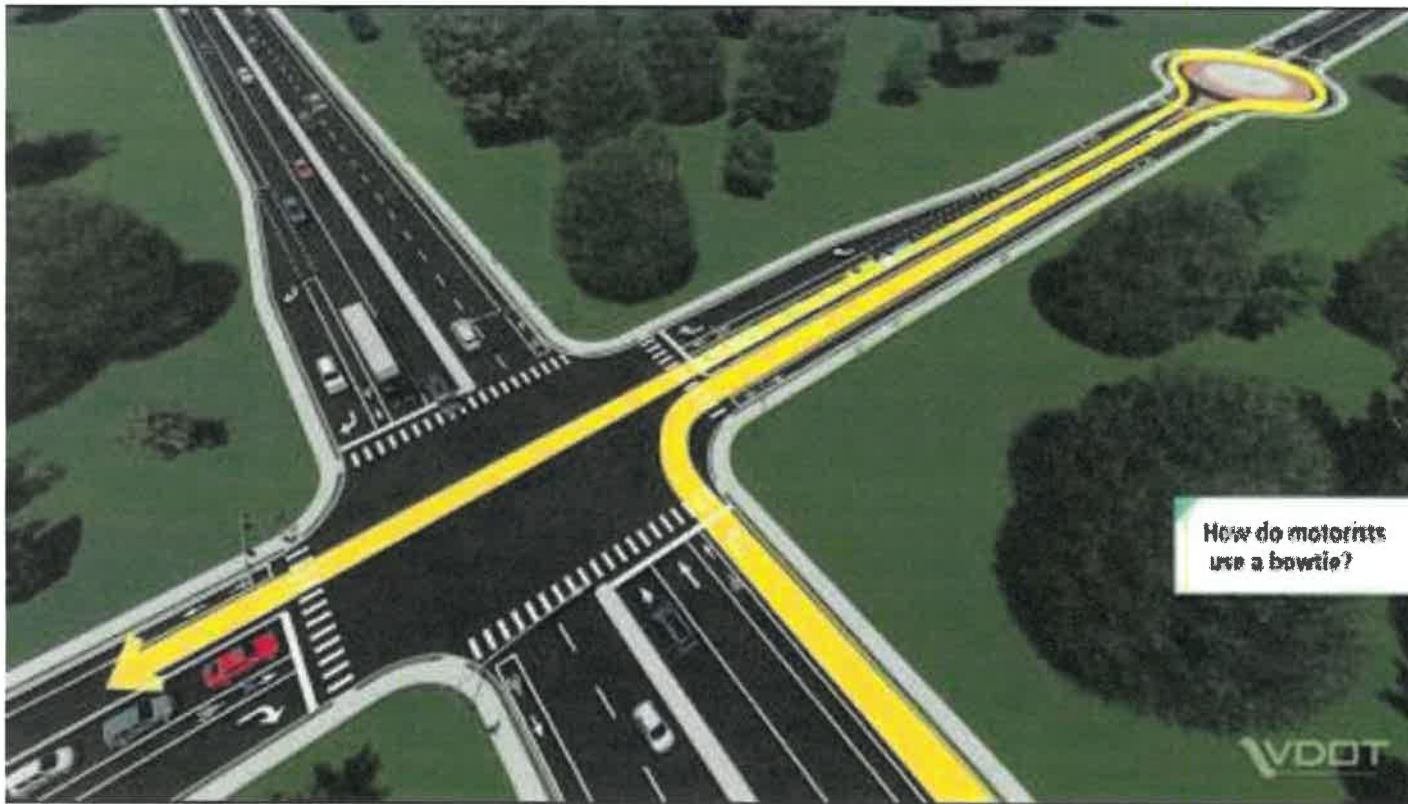
Recommended Alternative Improvements

- Alternative 1: SCDOT Modified Recommended Preferred
- Alternative 2: Bowties at Squire Pope and Spanish Wells
- Alternative 3: Echelon / Center Turn Overpass
 - Grade Separated Intersection at either Squire Pope or Spanish Wells
- Alternative 4: Elevated Bypass

Alternative #1 – SCDOT Modified Recommended Preferred



Alternative #2 – Bowties at Squire Pope and Spanish Wells



Alternative #3 – Echelon / Center Turn Overpass



Echelon



Center-Turn Overpass

Alternative #4 – Elevated Bypass



Alternative #4 – Elevated Bypass



Alternative #4 – Elevated Bypass



Alternative #4 – Elevated Bypass



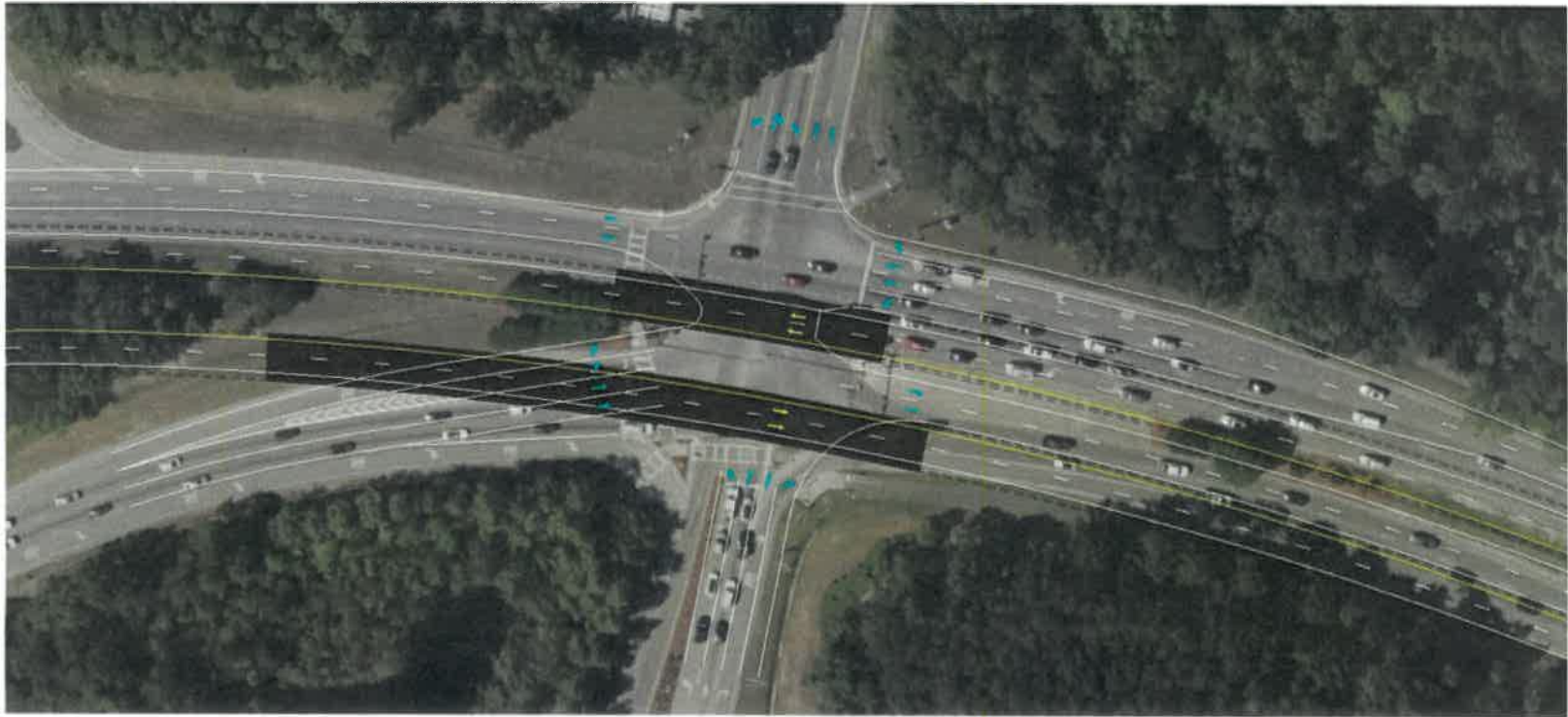
Alternative #4 – Elevated Bypass (Squire Pope)



Alternative #4 – Elevated Bypass (Spanish Wells)



Alternative #4 – Elevated Bypass (Gumtree)



Alternative 4 – Elevated Bypass

- Pros of Elevated Bypass
 - Improves safety as fewer through vehicles would remain at grade, reducing the conflicts between vehicles and pedestrians
 - Increases the efficiency of the at-grade signalized intersections
 - Significantly reduces the size of at-grade intersections
 - Provides room for growth along the corridor
- Cons of Elevated Bypass
 - Most expensive alternative
 - Results in the largest construction impact
 - Requires grade separation
 - Requires a change in decision making as drivers looking to go through the local intersections of Squire Pope, Old Wildhorse Drive, and Spanish Wells would need to enter the bypass.
 - However, full access would still be provided at-grade

Alternative 4 – Elevated Bypass

- Summary of forecasted operating conditions:
 - The following at-grade intersections would be able to be reduced in size and would be expected to operate at an overall LOS C or better:
 - Squire Pope
 - Spanish Wells
 - Gumtree
 - Full access could be available at Old Wild Horse
 - Overall, the study intersections are expected to operate acceptably under Alternative 4
 - The signalized intersections throughout the corridor are expected to operate with a LOS C or better overall
 - Side-street and unsignalized approaches throughout the corridor may still experience long delays
- Travel times were performed in Synchro along the Hilton Parkway corridor between Moss Creek and Indigo Run.
 - When compared to the 2045 No Build Scenario, the following changes in travel time were calculated:

Scenario	Difference in Travel Time (seconds) when Compared to 2045 No Build		% Difference		
	AM	PM	AM	PM	
2045 Alternative 4: Elevated Bypass	EB	-126	27	-19.1%	4.1%
	WB	+4	-330	0.5%	-43.7%

Travel Time Comparison

Scenario		Difference in Travel Time (seconds) when Compared to 2045 No Build		% Difference	
		AM	PM	AM	PM
2045 Alternative 1: SCDOT Modified Recommended Preferred	EB	-109	+18	-16.1%	2.7%
	WB	+43	-276	6.3%	-34.2%
2045 Alternative 2: Bowties at Squire Pope and Spanish Wells	EB	-104	-39	-15.3%	-6.6%
	WB	+9	-290	1.4%	-36.4%
2045 Alternative 3: Echelon at Squire Pope	EB	-67	-51	-9.4%	-8.9%
	WB	+17	-297	2.5%	-37.7%
2045 Alternative 3: Echelon at Spanish Wells	EB	-103	+16	-15.1%	2.5%
	WB	-15	-331	-2.3%	-44.0%
2045 Alternative 3: Center Turn Overpass at Squire Pope	EB	-122	+23	-18.4%	3.5%
	WB	-21	-319	-3.3%	-41.6%
2045 Alternative 3: Center Turn Overpass at Spanish Wells	EB	-134	-17	-20.6%	-2.9%
	WB	-16	-339	-2.5%	-45.4%
2045 Alternative 4: Elevated Bypass	EB	-126	+27	-19.1%	4.1%
	WB	+4	-330	0.5%	-43.7%

Note that the travel times were completed in Synchro for the Hilton Parkway corridor between Moss Creek and Indigo Run

Traffic and Operations Overview Matrix - Scoring

Resource/Category	Alternative 1 (Mod. SCDOT Recommended Preferred)	Alternative 2 (Bowties at Squire Pope and Spanish Wells)	Alternative 3 (Echelon / Center Turn Overpass)	Alternative 4 (Elevated Bypass)
Travel Time along US 278	4	4	2	1
Overall Intersection Operations	4	3	3	1
Side-Street Operations	4 Movements with a LOS F at a signalized intersection: Squire Pope: • Northbound approach (PM)	No movements have a LOS F at a signalized intersection. However, some movements are expected to have a LOS E at signalized intersections between Squire Pope and Gumtree.	4 Movements with a LOS F at a signalized intersection: <u>Echelon at Squire Pope:</u> Squire Pope: • Southbound approach (PM) <u>Center Turn Overpass at Squire Pope:</u> • Spanish Wells: Northbound Approach (PM)	1 All movements are expected to have a LOS D or better at signalized intersections between Squire Pope and Gumtree.
TOTAL	12	9	9	3
RANK	4	3	3	1

Bike/Ped Impact

Resource/Category	Alternative 1 (Mod. SCDOT Recommended Preferred)	Alternative 2 (Bowties at Squire Pope and Spanish Wells)	Alternative 3 (Echelon / Center Turn Overpass)	Alternative 4 (Elevated Bypass)
Pedestrian Crossing Distance	Longest pedestrian crossing distances.	Reduced pedestrian crossing distances and exposure to motor vehicle traffic.	Reduced pedestrian crossing distances and exposure to motor vehicle traffic.	Reduced pedestrian crossing distances and exposure to motor vehicle traffic.
Potential for Refuge Islands	No refuge islands on north-south crossings.	Potential for median refuge island on east and west crosswalk legs at Squire Pope	Refuge islands between directional traffic allow pedestrians to more comfortably navigate the complex intersection.	Refuge islands between directional traffic allow pedestrians to more comfortably navigate the complex intersection; HOWEVER, multiple refuge islands per leg and long end-to-end crossing distances increase intersection complexity and the likelihood of pedestrians needing two or more stages to complete a north-south crossing.
Conflict Points	Multiple turning movements and potential conflict points along each leg.	Fewer ped/vehicle conflict points and vehicle turning movements.	Fewer ped/vehicle conflict points and vehicle turning movements.	Fewer ped/vehicle conflict points and vehicle turning movements.

Safety Impacts

- **Alternative 1**
 - 32 conflict points
- **Alternative 2**
 - 20 conflict points
- **Alternative 3**
 - Echelon = 22 conflict points
 - Center Turn Overpass = 24 conflict points
- **Alternative 4**
 - Crash Modification Factors (CMF) indicate that a reduction in crashes of approximately 30%-50% could be realized.
 - Note that the potential reduction in crashes for each alternative would need to be verified by an in-depth safety analysis

Roadway/ROW Impacts

- **Alternate 1 (+0.2 ac)**
 - Add 2nd SB left turn lane at Gumtree
- **Alternate 2 (+1.1 ac)**
 - Add 2nd SB left turn lane at Gumtree
 - Roundabouts on local system at Squire Pope and Spanish Wells
 - Potentially less ROW on WHP due to removing left turn lanes
- **Alternate 3 – Echelon and Center Turn Overpass (+1.4 ac)**
 - Add 2nd SB left turn lane at Gumtree
 - Roundabouts/turn arounds on local system at Squire Pope and Spanish Wells
 - Additional ROW on WHP for turn lanes
- **Alternate 4 – Elevated Bypass (0 ac)**
 - No additional ROW needed.

Additional ROW Req'd vs SCDOT Alternative Alternative #1 –SCDOT Modified Preferred



Additional ROW Req'd vs SCDOT Alternative Alternative #2 - Bowties



Additional ROW Req'd vs SCDOT Alternative Alternative #3 - Echelons



Additional ROW Req'd vs SCDOT Alternative Alternative #3 - Center Turn Overpass



Right of Way and Cost Matrix - Scoring

Resource/Category	Alternative 1 (Mod. SCDOT Recommended Preferred)	Alternative 2 (Bowties at Squire Pope and Spanish Wells)	Alternative 3 (Echelon / Center Turn Overpass)	Alternative 4 (Elevated Bypass)
Estimated Additional Right of Way Acres	0.2	1.1	1.4	0
Right of Way Score	2	3	4	1
Cost	1	2	3	4
TOTAL	3	5	7	5
RANK	1	3	4	3

Environmental Overview Parameters

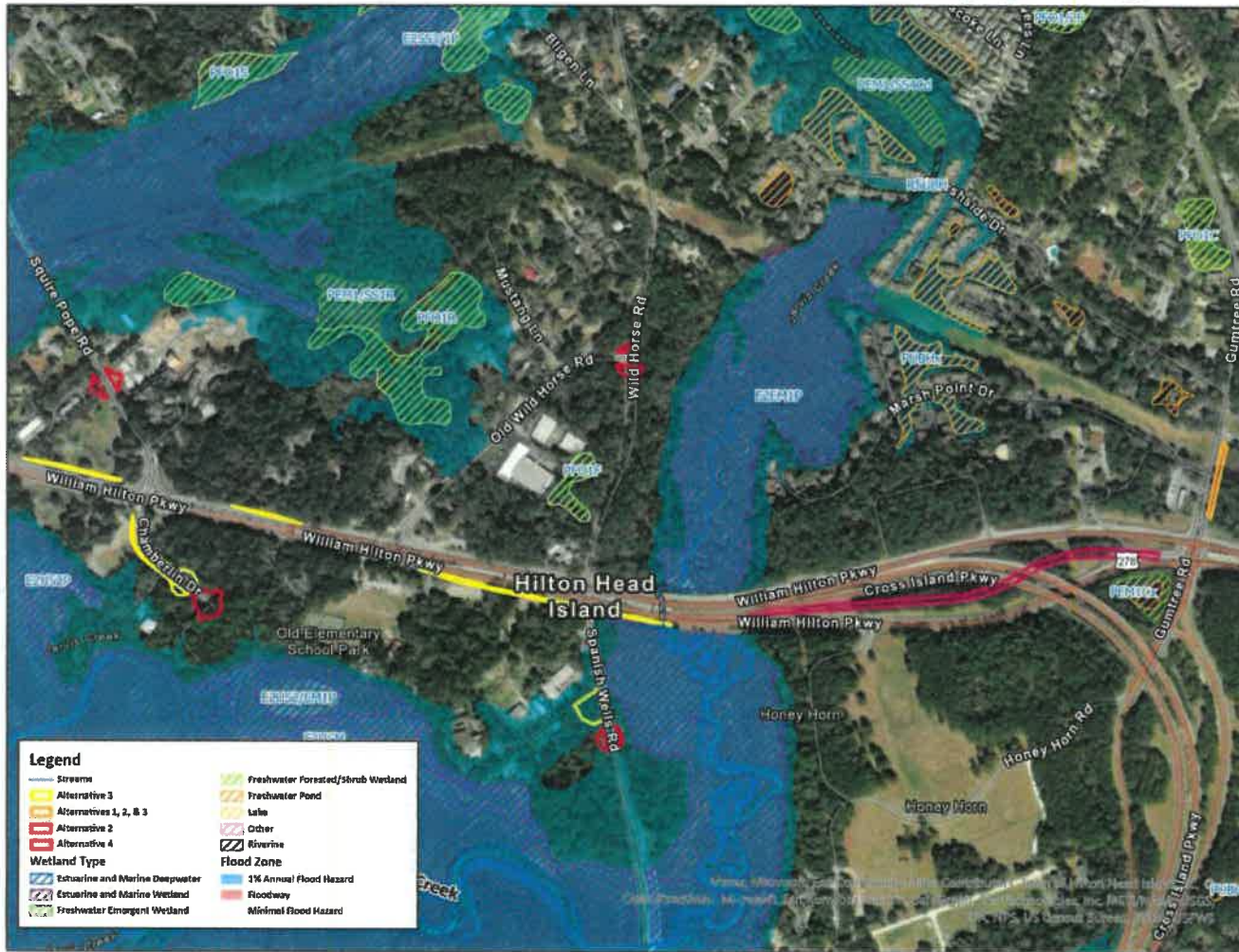
What the Environmental Overview Accomplishes:

- Assessment of resources completed at a high-level
 - Define "Red Flag" areas for consideration in advancement of design / specific alternatives
 - Archival geographic information system (GIS) data that is publicly available
 - Use of "Red Flag" areas to screen alternatives and provide high-level assessment of risk (cost/schedule)
 - Acceptable method for initial screening of multiple alternatives in the NEPA process
 - No field investigations occurred to verify resources

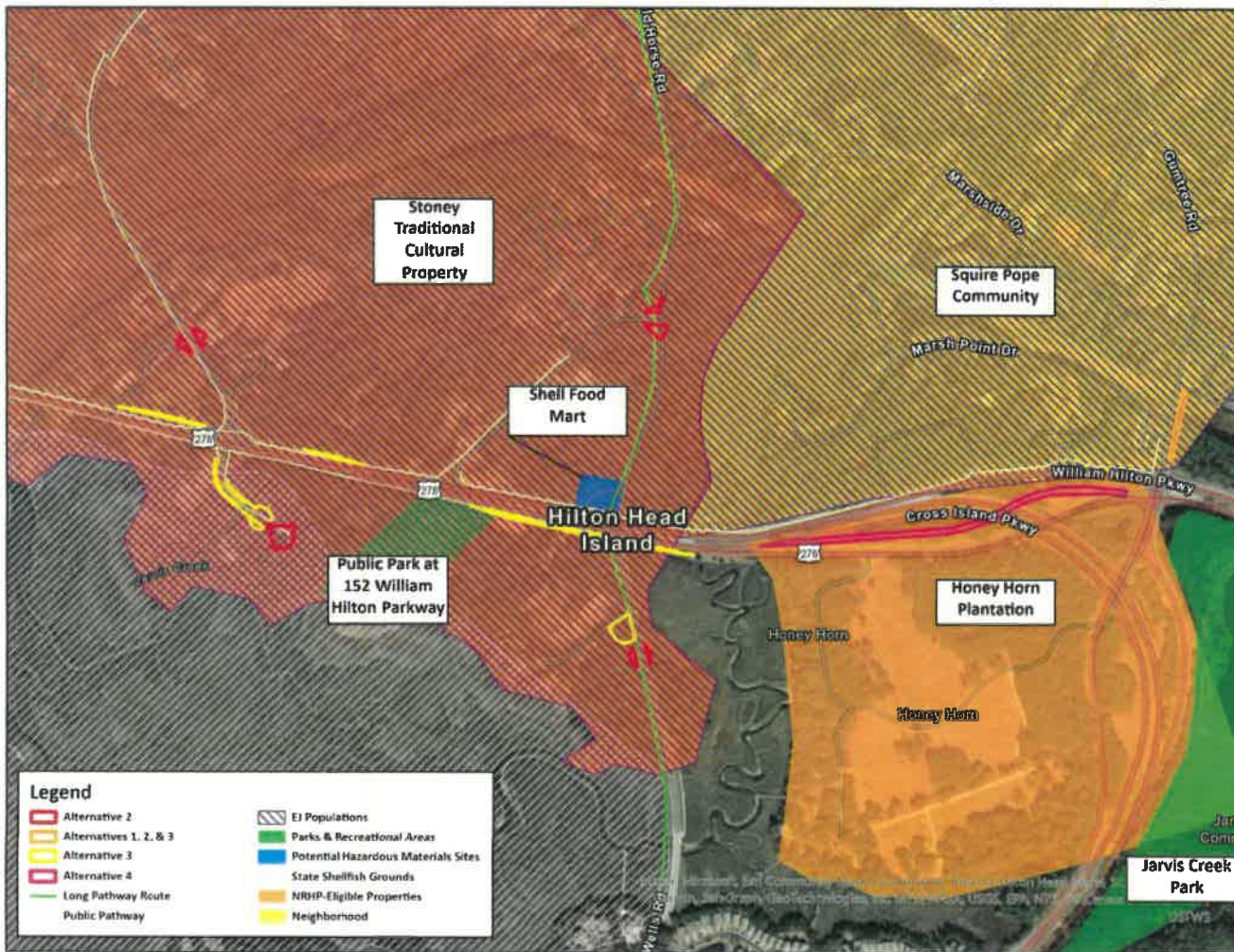
Limitations of the Environmental Overview:

- Assessment not vetted through coordination with resource agencies
- Field investigations to verify resources not completed
- Stakeholders & public have not provided input

Environmental Overview Mapping (Ecological)



Environmental Overview Mapping (Social)



Environmental Overview Matrix - Data

Resource/Category	Units	Alternative 1 (Mod. SCDOT Recommended Preferred)	Alternative 2 (Bowties at Squire Pope and Spanish Wells)	Alternative 3 (Echelon / Center Turn Overpass)	Alternative 4 (Elevated Bypass)
Additional Right-of-Way Impacts	Acres	0.2	1.1	1.4	0
	No. of Tracts	1	11	19	0
Additional Relocations	No.	0	0	0	0
National Wetland Inventory (NWI) Wetlands	Acres	0	0	0.005 (Estuarine and Marine Wetland)	0
Streams	No.	0	0	1	0
	Est. Linear Feet	0	0	5	0
Floodplains	Acres	0	0.1	0.4	0
Essential Fish Habitat Types • Estuarine Emergent Wetland	Acres	0	0	0.75	0.05
Threatened & Endangered Species	--	May Affect, Not Likely to Adversely Affect	May Affect, Not Likely to Adversely Affect	May Affect, Not Likely to Adversely Affect	May Affect, Not Likely to Adversely Affect
Neighborhoods	No.	1 (Squire Pope)	2 (Stoney & Squire Pope)	2 (Stoney & Squire Pope)	1 (Squire Pope)
Environmental Justice	No.	1 (Squire Pope)	2 (Stoney & Squire Pope)	2 (Stoney & Squire Pope)	1 (Squire Pope)
Cultural Resources	No.	0	1 (Stoney TCP)	1 (Stoney TCP)	1 (Honey Horn Plantation)
Section 4(f) Resources (Hist. Properties / Public Recreational Areas / Wildlife Refuges)	No.	0	1 (Stoney TCP)	2 (Stoney TCP & Park at 152 WHP)	1 (Honey Horn Plantation)

Environmental Overview Matrix – Scoring/Ranking

Resource/Category	Units	Alternative 1 (Mod. SCDOT Recommended Preferred)	Alternative 2 (Bowties at Squire Pope and Spanish Wells)	Alternative 3 (Echelon / Center Turn Overpass)	Alternative 4 (Elevated Bypass)
Additional Right-of-Way Impacts	Acres No. of Tracts	2	3	4	1
Additional Relocations	No.	1	1	1	1
National Wetland Inventory (NWI) Wetlands	Acres	1	1	2	1
Streams	No. Est. Linear Feet	1	1	2	1
Floodplains	Acres	1	3	4	1
Essential Fish Habitat Types • Estuarine Emergent Wetland	Acres	1	1	4	3
Threatened & Endangered Species	--	1	1	1	1
Neighborhoods	No.	1	2	2	1
Environmental Justice	No.	1	2	2	1
Cultural Resources	No.	1	2	2	2
Section 4(f) Resources	No.	1	3	4	3
TOTAL		12	20	28	16
RANK		1	3	4	2

Environmental Overview Summary

What the Environmental Alternatives Matrix Identified:

- Alternative 1 has the least concern for additional environmental impacts
- Alternatives 2 & 4 have moderate concerns for additional environmental impacts
- Alternative 3 has the highest concern for additional environmental impacts

Matrix Focus Areas:

- Minimal additional impacts to ecological resources when added to SCDOTs alternative
- More emphasis of concern on additional impacts (direct & indirect) to social resources (cultural properties, EJ populations, neighborhoods / communities)

Next Steps:

- Expectation of SCDOTs consultant to fold into the NEPA analysis for the US 278 Corridor Improvements Project
 - Resources can be field-verified
 - Appropriate coordination with resource agencies can occur & engagement with stakeholders/public
 - Refinement of resource impact quantities

Overall Scoring Matrix

Resource/Category	Alternative 1 (Mod. SCDOT Recommended Preferred)	Alternative 2 (Bowties at Squire Pope and Spanish Wells)	Alternative 3 (Echelon / Center Turn Overpass)	Alternative 4 (Elevated Bypass)
Traffic Operations (Throughput and Traffic Simulations)	4	3	3	1
ROW Impact	2	3	4	1
Environmental Impact	1	3	4	2
Safety	4	3	3	1
Bike/Pedestrian Impact	4	3	1	2
Community and Social Impact	2	4	4	2
Aesthetic	2	1	3	4
Cost	1	2	3	4
TOTAL	20	22	25	17
RANK	2	3	4	1

1 = Highest Ranking

QUESTIONS?



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

