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MEMORANDUM

Date: 8/29/2023

To: Mark Hoeweler and Elizabeth Tucker, Grand Strand Transportation Study

From: Abby Williams, PE

Subject: Holden Beach Causeway Corridor Improvements – Engineer's Cost Estimate

Project No.: 4919, 0M0.130128

Background

The Waccamaw Regional Council of Governments dba Grand Strand Transportation Study (GSATS) plans to improve Holden Beach Road SW, from Sabbath Home Road SW to the Intercoastal Waterway, with a multiuse path on both sides and on-street parking. Also included in the project are pedestrian crossings at the existing traffic signal at Sabbath Home Road SW and Holden Beach Road SW and three median protected midblock crossings along the corridor. This project is planned to provide an estimated 908 total parking spaces, including 584 parks on private property, 89 parks in the public right-of-way, and 235 on-street parks. Holden Beach Road SW is currently a 3-lane roadway with ditches. There are no facilities for bicycle or pedestrian access and many driveway access points onto the corridor. The future typical section of Holden Beach Rd is depicted in Figure 1. The total cost of the project is estimated at **$8,143,000.**

Figure 1. Proposed Typical Cross Section

Cost Estimate

A concept level Engineer's Estimate of Probable Cost was created for the Holden Beach Causeway Corridor Improvements based on the assumptions below. Prices and quantities are provided on page 3 and supplied using 2023 regional costs.

Roadway

- The existing roadway will be milled and overlayed, with some full-depth pavement removed for changes in the driveway location.
- Full-depth pavement will be added in new parking locations and in some cases where driveways are relocated, up to the existing right-of-way line. The pavement schedule is assumed as 3" of S9.5C, 4" of I19.0C, and 5" of B25.0C, combined with grade PG 64-22 asphalt binder plant mix.
- 2'6" curb and gutter will be added to the roadway and was quantified along driveways and parking within the public right-of-way only.
- Medians will be 5" monolithic concrete islands extending 15' in both directions from each midblock pedestrian crossing.
- The roadway will be restriped with 4" thermoplastic pavement markings. Parking spaces will also be delineated with 4" thermoplastic pavement markings.

Pedestrian Improvements

- The multiuse paths are assumed to be constructed with 4" of concrete on top of 6" of class 6 aggregate base course.
- ADA compliant concrete curb ramps will be added along the multiuse paths at every driveway and crossroad.
- The traffic signal at Sabbath Home Road SW and Holden Beach Road SW will have crosswalks added and will be updated with accessible pedestrian signals (APS) push buttons crossings.
- High visibility crosswalk striping costs were estimated by each using national averages. Medians for crosswalks are listed as 5" monolithic concrete islands, above.

Placemaking

- Trees and pedestrian scale lighting are assumed to be placed an average of 60' apart along the corridor on both sides of the roadway.
- Site furnishings are assumed to be benches placed an average 120' apart along the corridor on both sides of the roadway.

Right-of-Way

- While efforts were made to contain improvements within the existing right-of-way, 3 properties will require construction easements. Current property values on the corridor are approximately $20 per square foot, and the easement cost is 10% of property cost.

Contingencies

Due to the conceptual level of this study, many engineering details have yet to be determined. To assure an appropriate final cost, several lump sum estimations are applied. Earthwork grading, surveying, erosion control, signing, utility coordination, traffic signal upgrades, and contractor mobilization are all provided as lump sum estimates. Drainage and Traffic Control are listed according to the *NCDOT Conceptual Construction Cost Estimation Guidelines* as cost per mile. The costs to underground electric service and other aerial utilities are not included in the cost estimate but should be contemplated and discussed with Brunswick Electric.

A 20% planning contingency factor and a 2.3% annual inflation rate for 10 years are applied to the final line-item cost. The cost of engineering is assumed to be 6% of the total construction cost.

Engineer's Cost Estimate

Holden Beach Causeway Corridor Improvements

Holden Beach Rd SW & Sabbath Home Rd SW

COUNTY:		Brunswick	
PROJECT NO.:		4919	
DATE:	*8/29/2023*	BY:	*APW*
REVISED:		RVW:	*TF*

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PROJECT COST: $ 8,143,000.00

Description	Quantity	Unit	Price	Amount
Mobilization	1	LS	$ 153,000.00	$ 153,000.00
Grading	1	LS	$ 106,000.00	$ 106,000.00
Aggregate Base Course, Class 6	3,090	TON	$ 55.00	$ 169,950.00
Asph. Base Course B25.0C	2,520	TON	$ 90.00	$ 226,800.00
Asph. Intermediate Course I19.0C	810	TON	$ 90.00	$ 72,900.00
Asph. Surface Course S9.5C	1,940	TON	$ 90.00	$ 174,600.00
1.5" Asphalt Milling	49,105	SY	$ 4.00	$ 196,420.00
Asph. Binder - PG64-22	270	TON	$ 600.00	$ 162,000.00
2'6" Curb & Gutter	12,280	LF	$ 31.00	$ 380,680.00
4" Concrete Trail	30,020	SY	$ 54.00	$ 1,621,080.00
5" Monolithic Concrete Island	360	SY	$ 95.00	$ 34,200.00
4" Thermoplastic Pvmt Mkg. Line	19,400	LF	$ 4.00	$ 77,600.00
Crosswalks	6	EA	$ 2,600.00	$ 15,600.00
Concrete Curb Ramps	86	EA	$ 3,500.00	$ 301,000.00
Full Depth Pavement Removal	6,720	SY	$ 15.00	$ 100,800.00
Drainage	0.63	MI	$ 750,000.00	$ 472,500.00
Traffic Control	0.63	MI	$ 150,000.00	$ 94,500.00
Street Trees	120	EA	$ 1,000.00	$ 120,000.00
Pedestrian Scale Lighting	120	EA	$ 3,000.00	$ 360,000.00
Benches	60	EA	$ 650.00	$ 39,000.00
Easements	11,500	SF	$ 2.00	$ 23,000.00
Surveying	1	LS	$ 46,000.00	$ 46,000.00
Erosion Control	1	LS	$ 92,000.00	$ 92,000.00
Signing	1	LS	$ 25,000.00	$ 25,000.00
Utility Coordination	1	LS	$ 47,000.00	$ 47,000.00
Traffic Signal Upgrades	1	LS	$ 150,000.00	$ 150,000.00

Length	**0.63 Miles**	**Line Item Cost**	$ 5,261,630.00
		2.3% Inflation over 10 years	$ 6,629,653.80
		20% Planning Contingency Factor	$ 1,052,326.00
		Construction Cost	$ 7,681,979.80
		Engineering Cost 6%	$ 460,918.79
		Total Cost	**$ 8,142,898.59**

SAY $ 8,143,000.00