

April 11, 2024

Quintin Bergman
qbergman@indianriver.gov
Coastal Resource Manager
Indian River County
Natural Resources Department – Coastal Division
1801 27th Street
Vero Beach, Florida 32960

RE: Exhibit A – Scope of Work
Beach Preservation Plan Update
Continuing Engineering Services Agreement
Jones Edmunds Opportunity No. 95479-076-24

Dear Mr. Bergman:

Thank you for this opportunity to collaborate with you and your colleagues on the Beach Preservation Plan Update. The Scope of Work for this Work Order (WO) will be completed in accordance with the Continuing Contract Agreement for Consulting Engineering Services between Indian River County (COUNTY) and Jones Edmunds & Associates, Inc. (CONSULTANT) dated May 2, 2023 (Agreement). Taylor Engineering, Inc is included in the CONSULTANT Team for this WO.

The Beach Preservation Plan Update will include the shoreline extending from south of the Sebastian Inlet (R-1) to the Indian River/St. Lucie County line (R-119). As part of the assessment, we will update the COUNTY's existing Beach Preservation Plan (BPP). In the Update, we will analyze recent storm events, assess risks along the coast, and document the program's overall performance related to the beach and the associated natural environment. A discussion regarding beach management strategies, necessary permitting implications, and suggested funding mechanisms will also be presented under this Scope of Work.

BACKGROUND

The COUNTY adopted its initial BPP in 1988 to evaluate and maintain the COUNTY's resources along the coastline. Subsequent updates to the BPP occurred in 1998, 2002, 2008, 2015, and 2019. The COUNTY requested that the CONSULTANT Team provides a Scope of Work to update the BPP with goals to update the history of beach management throughout the County and document the available management strategies in each sector. Under this Scope of Work, the CONSULTANT Team will collect necessary data relating to previous studies and beach and inlet management events within the County; assess the performance of the beach given the current beach management strategies; investigate

beach management alternatives for each sector and the permitting requirements, environmental implications, and possible funding mechanisms to implement the alternatives; and participate in one Board of County Commissioners (BOCC) meeting to present the results of the BPP update. This study's findings will provide the COUNTY with a robust BPP for each of its coastal sectors.

ASSUMPTIONS

The CONSULTANT Team made several assumptions in developing this Scope of Work and the associated fees for the project. The following assumptions and those noted throughout this Scope of Work inform the proposed level of effort and associated costs:

- This Scope of Work excludes detailed modeling, engineering design, permitting, construction administration, and any other service not explicitly detailed herein.
- The COUNTY will assist in collecting background data that are not publicly available. Relevant data include survey information, related reports, water-level data, wave data, dredge history, applicable photographs, etc. The CONSULTANT will have the right to reasonably rely on the accuracy and validity of such documentation and data. The COUNTY agrees to indemnify and hold the CONSULTANT harmless from any loss, damage, or liability arising out of any errors, omissions, or inaccuracies in such documentation and/or data and where such documentation and/or data do not conform to normal and customary standards.
- The CONSULTANT does not guarantee, warranty, or otherwise ensure that regulatory agencies will authorize the proposed management strategies.

EXHIBIT A SCOPE OF WORK

TASK 1 – DATA COLLECTION AND REVIEW

Task 1 entails collecting and reviewing existing information pertinent to the Indian River County coastline. The CONSULTANT Team will coordinate with COUNTY staff to finalize the sector divisions to be used throughout the BPP update. The CONSULTANT will analyze the sector areas from previous BPPs and advise and discuss with the COUNTY during this task if changes may provide clarity. For each sector, the assessment will note the community and user profile, COUNTY-identified public access points, current public and private uses, and management activities.

The CONSULTANT Team will review literature related to the coastal processes for this region and summarize major findings. We will obtain publicly available information about the Indian River County beaches—potential information sources include but are not limited to:

- Florida Department of Environmental Protection (FDEP).
- US Army Corps of Engineers (USACE).
- Federal Emergency Management Agency (FEMA).
- National Oceanic and Atmospheric Administration (NOAA).

- Florida Department of Transportation (FDOT).
- Florida Inland Navigation District (FIND).
- Indian River County.

The CONSULTANT Team will coordinate with COUNTY officials regarding historical erosion events and beach management activities—these communications are essential for creating a comprehensive report.

The review will investigate findings from previous studies/plans, the nourishment history, historical and ongoing beach management activities, COUNTY-identified public access points, permits, survey history, available light detection and radar (LiDAR) data and historical storm and erosion events. From these data, we will create a timeline of significant events. We will obtain and summarize existing regulatory permits (federal and state) for beach-related projects. The final Technical Report will include an analysis of wind, wave, water level, and sea-level rise (SLR) projection data. We will produce a geodatabase of available geospatial data and transmit the geodatabase and documentation to the COUNTY for future use.

Deliverables:

One Technical Memorandum will summarize the data collection. The CONSULTANT Team will implement COUNTY comments and revisions into the final Technical Report.

TASK 2 – BEACH CONDITIONS UPDATE

Task 2 entails analyzing, reviewing, and summarizing the shoreline performance along the County's coastline. The CONSULTANT Team will choose which years to compare based on spatial and temporal data availability. We will focus on surveys that offer full coverage of the area of interest and are applicable to the storm vulnerability and resilience analysis work in Task 4. In Task 2, the CONSULTANT Team will review historical beach profiles and available LiDAR data summarized in Task 1 and process the data to analyze historical profile elevations, contour position changes, and volumetric trends. The CONSULTANT Team will plot and analyze the beach profiles and note significant changes to beach features such as the dune and berm—with trends reported on a sector-by-sector basis. For the contour position and volume change analyses, the CONSULTANT Team will compare a minimum of three and a maximum of four surveys to generate beach trends over near-term and long-term periods; the CONSULTANT will discuss the comparison periods with the COUNTY prior to completing analyses. The final Technical Report will include a tabular and graphic presentation of the data for each R-monument in the County.

The CONSULTANT Team will also predict beach recession and volume loss due to two SLR estimates over the next decade using methods published by USACE. Through discussions with the COUNTY Project Manager, the CONSULTANT Team will provide guidance and receive concurrence on which SLR trends to apply. This analysis will not include sediment transport modeling or create a sediment budget; however, the CONSULTANT Team will review previous sediment budgets and may leverage them within this study.

In addition to the beach conditions analyses, the CONSULTANT Team will conduct a site visit of the project area. The site visit will allow two CONSULTANT Team staff to photograph and document current conditions of the beach and some of the public access points. These photographs and the documented assessment of the County's beaches will support the tasks that follow and assist in public communications.

Deliverables:

Two Technical Memoranda will be submitted as follows:

1. Summary of major findings.
2. Summary of the field visit.

The CONSULTANT Team will implement COUNTY comments and revisions into the final Technical Report.

TASK 3 – SAND, ENVIRONMENTAL, AND BIOLOGICAL RESOURCES UPDATE

Task 3 entails reviewing and summarizing upland and offshore sediment resources available to the COUNTY. The CONSULTANT Team will not collect data as part of this analysis, but geologists will review available sediment information pertaining to these sources and the native beach. Data sources will include but are not limited to Regional Offshore Sand Source Inventory (ROSSI), Marine Minerals Information System (MMIS), USACE South Atlantic Division- Sand Availability and Needs Determination (SAD-SAND), and previously conducted studies specific to the County (i.e., past BPPs and the Sebastian Inlet Management Plans). Using available permit data, the CONSULTANT Team will also summarize sand sources for past beach nourishment events if the data are available. For each of the sediment sources, we will note available data and data shortcomings to assist in future permitting efforts and provide an update on the locations and quantities of available sand with a map of each location and distances to the project locations. Information regarding the steps required to permit an offshore borrow area will also be included.

The CONSULTANT Team will also review and summarize environmental and biological resources that the COUNTY must consider when developing beach management strategies. This review will include protected species, native vegetation, hardbottom resources, and other cultural resources within the study area. This assessment will support the discussion on permitting requirements and environmental implications for each beach management alternative in the following tasks.

Deliverables:

One Technical Memorandum will summarize the major findings. The CONSULTANT Team will implement COUNTY comments and revisions into the Final Report.

TASK 4 – STORM VULNERABILITY AND RESILIENCE ANALYSIS UPDATE

Task 4 entails analyzing the shoreline position (Task 2) and how it relates to the upland infrastructure along the coastline. The CONSULTANT Team will classify different reaches or areas within sectors that have common features based on upland infrastructure, including analyzing parcel databases. The CONSULTANT Team will leverage past efforts and use the 2015 and 2019 BPPs' SBEACH modeling efforts to determine how the beach's storm response varies along the coast and incorporate the response features into a vulnerability analysis of the upland infrastructure. The risk analysis will incorporate four vulnerability parameters:

1. Shoreline encroachment.
2. Elevation change.
3. Historical erosion rates.
4. Storm response.

The study will discuss these risks and how they affect the protective "buffer" that the coast provides the upland infrastructure. The study will also evaluate the recreational value of the beach and the losses associated with shoreline retreat or storm damage if the coastal protection fails.

Deliverables:

One Technical Memorandum will summarize the major findings and include a matrix of parameters that influence beach vulnerability (elevations/volume information, SBEACH storm response, erosion rates, etc.). The CONSULTANT Team will implement COUNTY comments and revisions into the final Technical Report.

TASK 5 – BEACH MANAGEMENT ALTERNATIVE DEVELOPMENT

Task 5 entails investigating beach management measures and will include, but will not be limited to:

- No action.
- Managed Retreat/Strategic Realignment
- Beach/dune nourishment.
- Nearshore placement.
- Vegetative planting and sand fencing.
- Groins.
- Breakwaters.
- Seawalls.
- Geotubes
- Revetments.
- Submerged artificial reefs.

The above list provides guidance. The CONSULTANT will analyze up to 15 beach management measures. The CONSULTANT Team will provide a brief overview of each management alternative and a rough-order-of-magnitude cost. The Technical Memorandum will discuss the management measures and note their feasibility along the Indian River County shoreline and will include qualitative benefits, data shortcomings, design/permitting

needs, associated maintenance requirements, environmental impacts, and possible funding mechanisms. The CONSULTANT Team will note impacts that management strategies may have on natural resources and whether the COUNTY could encounter significant impacts. The Technical Memorandum will include beneficial use and regional sediment management strategies where appropriate and in accordance with the Sebastian Inlet Management Plan.

The CONSULTANT Team will also evaluate potential funding sources for implementing the beach management alternatives. The evaluation will include potential local, state, and federal funding mechanisms, e.g., USACE federal beach projects, FEMA Category B/G¹, FDEP Local Government Funding Requests (LGFR). The CONSULTANT Team will also summarize the eligibility requirements for these funding resources and the advantages and disadvantages of using federal and state funding mechanisms.

Deliverables:

One Technical Memorandum will summarize the major findings. The CONSULTANT Team will implement COUNTY comments and revisions into the Final Report.

TASK 6 – SUMMARY AND RECOMMENDATIONS

Task 6 entails summarizing the results of Tasks 1 through 5 into one public-facing BPP Summary document, which will be accompanied by a series of Technical Appendices.. The document will be American with Disabilities Act (ADA) compliant. The CONSULTANT Team will provide the County with a draft of the documents (Summary document and Technical Appendices) for review 15 months following the Notice to Proceed (NTP).

Following submittal of the draft of the updated BPP Summary document (including technical appendices), the CONSULTANT Team will participate in two public meetings: a BOCC meeting and an IRC Beach and Shores Preservation meeting or equivalent public meeting at the request of the COUNTY. We will prepare presentations discussing the project objectives and recommendations. The CONSULTANT Team will submit the presentations to the COUNTY's Project Team before the meeting for review and revisions. We have budgeted for time to meet virtually, discuss revisions, and participate in a rehearsal. For the public meetings, the CONSULTANT'S Project Manager, one senior staff member, and one junior staff member will attend the meetings in person. On the days of the meetings, we will make ourselves available before and after the meetings to discuss findings.

It is anticipated that The COUNTY will allow a 3 or 4- week public comment period and provide responses within 1 month of the public meeting. The COUNTY will create a portal to collect comments and transmit them to the CONSULTANT at the end of the public comment period. The CONSULTANT Team will summarize and incorporate comments received from the COUNTY and the community, as appropriate, into the final Technical Report.

¹ Category B = Emergency Protective Measures; Category G = Parks, Recreational, and Other Facilities.

Deliverables:

Electronically submit ADA-compliant documents to the COUNTY including the final version of the updated BPP Summary document (including technical appendices) within 2 months of receipt of comments. A digital catalog of reports and data collected for the study will be electronically submitted at the completion of the project.

TASK 7 – PROJECT MANAGEMENT, PEER REVIEWS, MEETINGS, AND COMMUNICATIONS

The CONSULTANT will be involved in project management with the COUNTY throughout the project. Project management will include planning, coordinating, communicating, accounting, and general reporting. As the Consultant Team involves Jones Edmunds and Taylor Engineering with Taylor leading Task 1 through 6, Peer review of deliverables by Jones Edmunds is included in Task 7.

In addition, the CONSULTANT proposes meetings as follows:

A Kickoff Meeting with the COUNTY. The Kickoff Meeting will address the following items:

- Identify the roles and responsibilities for the CONSULTANT Team and COUNTY personnel.
- Review the project purpose and objectives.
- Discuss critical success factors and the COUNTY's vision for the project.
- Discuss available data. We have noted above a general list of needed data. We will provide list at the meeting noting what data we have received already.
- Review the project schedule.
- Discuss deliverables.

The CONSULTANT Team will participate in six (6) virtual deliverable review meetings with COUNTY staff to note and address suggestions and comments on the deliverables.

The CONSULTANT will also communicate with the COUNTY via telephone, email, and written correspondence on a regular and on-going basis.

Deliverables:

- Data request for Kickoff Meeting.
- Meeting agendas and summaries.

SCHEDULE

The proposed project deliverable schedule is provided in the table below.

Task Deliverables (outlined with Task descriptions)	Weeks from Notice to Proceed
Task 1 – Data Collection and Review	4 months
Task 2 – Beach Conditions Update	6 months
Task 3 – Sand, Environmental, and Biological Resources Update	6 months
Task 4 – Storm Vulnerability and Resilience Analysis Update	9 months
Task 5 – Beach Management Alternative Development	12 months
Task 6 – Summary and Recommendations	15 months
Task 7 – Project Management, Peer Reviews, Meetings, and Communications	ongoing

Note: The proposed schedule is based on 2-week review periods by the COUNTY of project deliverables unless stated otherwise.

COMPENSATION

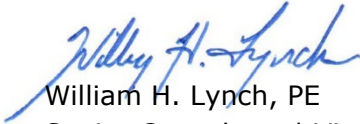
We propose to provide the services in this Scope of Work on a lump-sum basis in accordance with the terms of the Agreement for a lump sum fee of **\$378,989** as shown below and on the attached Exhibit B Fee Schedule. This labor and fee estimate considers the assumptions noted above.

Task	Hours	Lump Sum Fee
Task 1 – Data Collection and Review	410	\$59,902
Task 2 – Beach Conditions Update	397	\$58,682
Task 3 – Sand, Environmental, and Biological Resources Update	206	\$28,806
Task 4 – Storm Vulnerability and Resilience Analysis Update	366	\$65,800
Task 5 – Beach Management Alternative Development	394	\$59,020
Task 6 – Summary and Recommendations	482	\$74,534
Task 7 – Project Management, Peer Reviews, Meetings and Communications	125	\$32,245
Totals	2,390	\$378,989

Thank you for the opportunity to work with the COUNTY on the Beach Preservation Plan Update

Please contact Bill at (561) 267-8535 or via email at blynch@jonesedmunds.com with questions or comments.

Sincerely,



William H. Lynch, PE
Senior Consultant | Vice President



Brett Cunningham, PE
Senior Vice President

Attachments: Exhibit B Fee Schedule

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EXHIBIT B

Jones Edmunds WO								
Indian River County Beach Preservation Plan Update								
Exhibit B Man-hour and Fee Schedule								
Tasks	Project Officer/ Sr. Consultant	Sr. Engineer	Senior Admin. Assist.	Senior Tech Editor	Total Task Hours	Labor Fee	Sub. cost	Total
<i>Hrly rate</i>	\$ 295	\$ 285	\$ 125	\$ 165				
Tasks 1 through 6							\$ 346,744	\$ 346,744
Taylor Engineering (see attached summary)						\$ -	\$ 346,744	\$ 346,744
Task 7 - Project Management, Peer Review, Meetings & Communication	46	52	15	12	125	\$ 32,245		\$ 32,245
Project Management	20		15		35	\$ 7,775	\$ -	\$ 7,775
Progress Meetings (6 virtual)	12	12			24	\$ 6,960	\$ -	\$ 6,960
Public Meetings support	8				8	\$ 2,360	\$ -	\$ 2,360
Peer Review (deliverables & consulting)	6	40		12	58	\$ 15,150	\$ -	\$ 15,150
					Total Fee	\$ 32,245	\$ 346,744	\$ 378,989

TAYLOR ENGINEERING, INC.
COST SUMMARY BY TASK
P2024-047: INDIAN RIVER COUNTY BEACH PRESERVATION PLAN UPDATE (JE)

TASK 1: Data Collection and Review

<i>Labor</i>	Hourly Rate	Hours	Burdened Cost	Task Totals
Principal	\$284.00	12.0	3,408.00	
Senior Professional	\$204.00	20.0	4,080.00	
Project Professional	\$164.00	96.0	15,744.00	
Staff Professional	\$126.00	204.0	25,704.00	
Sr. CAD/GIS	\$189.00	22.0	4,158.00	
Project CAD/GIS	\$129.00	48.0	6,192.00	
Admin/Document Prep	\$77.00	8.0	616.00	
Total Labor Hours		410.0		
Total Labor Cost				<u>59,902.00</u>

Total Task 1 **\$59,902.00**

TASK 2: Beach Conditions Update

<i>Labor</i>	Hourly Rate	Hours	Burdened Cost	Task Totals
Principal	\$284.00	13.0	3,692.00	
Senior Professional	\$204.00	6.0	1,224.00	
Project Professional	\$164.00	120.0	19,680.00	
Staff Professional	\$126.00	204.0	25,704.00	
Sr. CAD/GIS	\$189.00	34.0	6,426.00	
Project CAD/GIS	\$129.00	8.0	1,032.00	
Admin/Document Prep	\$77.00	12.0	924.00	
Total Labor Hours		397.0		
Total Labor Cost				<u>58,682.00</u>

Total Task 2 **58,682.00**

TASK 3: Sand, Environmental, and Biological Resources Update

<i>Labor</i>	Hourly Rate	Hours	Burdened Cost	Task Totals
Principal	\$284.00	8.0	2,272.00	
Senior Professional	\$204.00	4.0	816.00	
Project Professional	\$164.00	32.0	5,248.00	
Staff Professional	\$126.00	84.0	10,584.00	
Sr. CAD/GIS	\$189.00	4.0	756.00	
Project CAD/GIS	\$129.00	66.0	8,514.00	
Admin/Document Prep	\$77.00	8.0	616.00	
Total Labor Hours		206.0		
Total Labor Cost				<u>28,806.00</u>

Total Task 3 **28,806.00**

P2024-047: INDIAN RIVER COUNTY BEACH PRESERVATION PLAN UPDATE (JE)

TASK 4: Storm Vulnerability and Resilience Analysis Update

<i>Labor</i>	Hourly Rate	Hours	Burdened Cost	Task Totals
Principal	\$284.00	36.0	10,224.00	
Senior Advisor/QC/Editor	\$297.00	60.0	17,820.00	
Senior Professional	\$204.00	6.0	1,224.00	
Project Professional	\$164.00	100.0	16,400.00	
Staff Professional	\$126.00	144.0	18,144.00	
Sr. CAD/GIS	\$189.00	4.0	756.00	
Admin/Document Prep	\$77.00	16.0	1,232.00	
Total Labor Hours		366.0		
Total Labor Cost				<u>65,800.00</u>

Total Task 4 65,800.00

TASK 5: Beach Management Alternative Development

<i>Labor</i>	Hourly Rate	Hours	Burdened Cost	Task Totals
Principal	\$284.00	32.0	9,088.00	
Senior Professional	\$204.00	12.0	2,448.00	
Project Professional	\$164.00	94.0	15,416.00	
Staff Professional	\$126.00	180.0	22,680.00	
Project CAD/GIS	\$129.00	68.0	8,772.00	
Admin/Document Prep	\$77.00	8.0	616.00	
Total Labor Hours		394.0		
Total Labor Cost				<u>59,020.00</u>

Total Task 5 59,020.00

TASK 6: Summary and Final Recommendations

<i>Labor</i>	Hourly Rate	Hours	Burdened Cost	Task Totals
Principal	\$284.00	57.0	16,188.00	
Senior Professional	\$204.00	8.0	1,632.00	
Project Professional	\$164.00	139.0	22,796.00	
Staff Professional	\$126.00	176.0	22,176.00	
Sr. CAD/GIS	\$189.00	18.0	3,402.00	
Project CAD/GIS	\$129.00	36.0	4,644.00	
Admin/Document Prep	\$77.00	48.0	3,696.00	
Total Labor Hours		482.0		
Total Labor Cost				<u>74,534.00</u>

Total Task 6 \$74,534.00

Project Total \$346,744.00