



**COASTAL PROTECTION ENGINEERING**

5301 N. FEDERAL HWY, SUITE 335

BOCA RATON, FL 33487

561-565-5100

November 10, 2023

*Sent Via Email*

Patricia Strayer, P.E.  
Town Engineer  
Town of Palm Beach  
951 Old Okeechobee Road  
West Palm Beach, FL 33401

**Re: Proposal to Support Federal Permitting for the Mid-Town Beach Nourishment Project**

Dear Patricia:

This proposal is being provided at your request for Coastal Protection Engineering LLC (CPE) to support the Town of Palm Beach (Town) with professional services on an hourly (time and materials) basis for federal permitting of the Mid-Town Beach Nourishment Project. The total cost for these services is an estimated, Not-To-Exceed amount of \$278,515.00 and will be performed in accordance with this proposal and the Professional Services Agreement (PSA) 2020-02 between the Town of Palm Beach and CPE dated May 22, 2020. The scope of services is provided in Attachment 1 and the cost summary is provided in Attachment 2.

The compensation for services rendered under this proposal will be based on the Rate Schedule of the PSA as estimated in Attachment 2. Although this proposal is detailed by separable items and estimated by specific staff and categories, it is anticipated that some work elements will exceed the estimate while others fall below the estimate to complete. Our full staff and sub-consultant will be available and used as needed to achieve the scope of services and to meet the Town's objectives and timelines within the task budget. Should the Town desire additional services beyond this scope, CPE will be available to discuss adjustments as appropriate.

Thank you for the opportunity to serve the Town of Palm Beach. If you have any questions, please feel free to contact me directly at 561-756-2535.

Sincerely,

Thomas P. Pierro, P.E., D.CE  
Principal Engineer  
Coastal Protection Engineering LLC  
Mobile: 561-756-2535  
[tpierro@coastalprotectioneng.com](mailto:tpierro@coastalprotectioneng.com)

cc: Tara Brenner, P.G., P.E., CPE  
Stacy Buck, CPE

## **Attachment 1 - Scope of Services**

### **Task 1 – Mid-Town Beach Nourishment Project Federal Permitting**

#### **Federal Permitting**

The Mid-Town Beach Nourishment project permit expired in December 2019. CPE will request a re-issuance of the Mid-Town Beach Nourishment Project (SAJ-1995-03779) permit from the U.S. Army Corps of Engineers (USACE). Through this process, the project is subject to consultation under Section 7 of the Endangered Species Act (ESA) and consultation under the Magnuson-Stevens Fishery Conservation and Management Act. This may include coordination with, but not limited to, the USACE, National Marine Fisheries Services (NMFS), and U.S. Fish and Wildlife Service (USFWS). Coordination may include efforts such as responses to data requests, preparation of maps and plans, and participation in meetings and conference calls to discuss issues raised by the consulting agencies.

CPE will coordinate a meeting with USACE to review the request to re-issue the permit for the previously authorized project. The meeting can be held virtually via webinar or as an in-person meeting with USACE in the Palm Beach Gardens regulatory office, according to the preferences of the Town staff. The overall purpose of this meeting is to present the proposed project, obtain agency input and guidance and identify any additional data needs and concerns. Feedback received during this meeting will be used to refine the proposed field investigations and prepare and submit a thorough and complete permit application.

CPE will review existing data and the proposed beach fill template to update the design to current conditions, prepare the permit sketches, and assemble the permit application attachments. Shoreline and volume changes will be updated to evaluate volume needs and distribution on the existing beach conditions using the previously authorized template. The permit sketches will include plan view and cross-sections of the beach fill template and North Borrow Area 1, available construction access(es) and staging areas, topographic and bathymetric survey data, identified regulatory restrictions, and known hardbottom areas. The permit sketches will be signed and sealed by a Professional Engineer registered in the State of Florida and provided with the application.

After application submittal, CPE will continue to coordinate with the USACE and respond to Requests for Additional Information (RAIs) during the permit review process. RAIs may include comments from NMFS, USFWS, and the public. We will coordinate with the Town on the extent of the response and what the implication may be to the permitting process and construction timeline. We will draft the RAI response and provide the Town an opportunity for review prior to submittal to the agencies. In cases where coordination and response efforts may exceed the level of effort estimated herein, CPE will contact the Town to discuss an approach and can develop a supplemental proposal if requested. This scope does not include beach profile survey data collection, project engineering for design, or mitigation planning as the current objective is to permit the previously authorized beach fill design and borrow area, and it is understood that mitigation planning is being developed by another consultant for the Town.

#### **Nearshore Hardbottom ESA-Listed Coral Survey for SARBO Compliance**

The Mid-Town Beach Nourishment federal permit expired in 2019 and was previously authorized in compliance with the NMFS South Atlantic Regional Biological Opinion (SARBO). The SARBO has since been updated (2020) and now requires surveys for ESA-listed coral colony and *Acropora* critical habitat of



hardbottom within 500 feet of the equilibrium toe of fill (ETOF) and in proximity to pipeline corridors. Overlaying the Mid-Town project template on recent hardbottom delineations that fall within 500 feet of the Mid-Town project area indicate that there are 70 sampling sites to be surveyed adjacent to the ETOF. Three (3) additional sites will also be sampled to cover the hardbottom within 100 feet of the three pipeline corridors in order to bring the project into compliance with the SARBO. These surveys must be completed within 2 years prior to project construction to be considered in compliance with the SARBO.

Each sampling site measures 1-hectare and will be surveyed by two marine biologists using a 2-tiered approach.

Tier 1: The hardbottom within each site will be assessed in a grid pattern. If five (5) or fewer colonies of any ESA-listed species are encountered, the required data will be collected on those colonies and no further surveying is required. If more than five (5) colonies are encountered, the survey will proceed to Tier 2.

Tier 2: Three (3) non-overlapping belt transects will be placed over as much hardbottom as possible within the 1-hectare sampling site and the required data will be recorded for all colonies within the three (3) transects. Transitions between hardbottom and sand will also be recorded.

Raw data will be submitted in the form of scanned datasheets, excel spreadsheets with coral data, and photographs. A listed coral survey report will be prepared and provided to the USACE to support ESA Section 7 consultation. The report will include a map of the project area and adjacent hardbottom resources with the survey results overlaid onto recent, clear aerial photographs.

### **Offshore Hardbottom Investigations near Borrow Area for SARBO Compliance**

North Borrow Area 1 (NBA-1) has been previously authorized for the Mid-Town Beach Nourishment project. The NMFS SARBO also requires that the area within 1,000 feet of a borrow area be surveyed for hardbottom resources. This includes a sidescan sonar survey to identify potential hardbottom resources and in situ verification and assessment of those resources as detailed below.

### **Sidescan Sonar and Bathymetric Survey**

The NFMS SARBO requires that geophysical surveys be conducted within 1,000 feet of a borrow area in order to determine if hardbottom/coral reef resources are located in proximity to the area proposed for dredging. Our subconsultant, APTIM, will conduct the sidescan sonar survey, providing 100% coverage of NBA-1, including a 1,000-foot buffer. APTIM will utilize an Edgetech 4125 dual frequency high-resolution sidescan sonar system to perform the survey. The Edgetech 4125 utilizes both 600 kHz and 1600 kHz frequencies, with operating ranges of 120 meters and 35 meters, respectively. APTIM is proposing to collect data on 100-meter spaced survey tracklines, which will provide greater than 100% seafloor coverage with the low frequency, 600 kHz. The survey will collect up to 16 nautical miles of sidescan sonar data throughout the survey area, comprised of 11 shore parallel main lines and 4 shore perpendicular tie lines (500 meter spacing). It is expected the field data collection effort will take one (1) day of data collection. Bathymetric data will be collected concurrently with the sidescan sonar survey. Bathymetric data will be collected using an ODOM E20 echosounder with digitizer with a through hull mounted



transducer. The echosounder operated at 200 kHz and calibrated daily for speed of sound using a Valeport Swift sound velocity profiler. Bar checks will also be performed daily (at the beginning and end of each survey day) to verify draft and sounder calibration. Bar checks will be performed from a depth of 5 ft to a depth of 25 ft. A Trimble R8 GNSS and a TSS DMS-25 dynamic motion sensor will be used onboard the survey vessel to provide instantaneous tide corrections as well as heave corrections. Data will be digitally stored using Hypack Software. All survey operations will be conducted under the direct responsible charge of a Florida Licensed Professional Surveyor and Mapper and will be in accordance with the “Standards of Practice” set forth in Florida Statute 472, Administrative Code 5J17.

This survey will be conducted in compliance with the NMFS SARBO, Appendix G – Geophysical and Geotechnical Surveys PDCs. Upon completion of field data collection activities, APTIM will process the sidescan sonar data utilizing Chesapeake Technologies SonarWiz 7 processing software. APTIM will post-process, bottom-track and apply gain settings, to the data set before interpreting for any hardbottom. If hardbottom is identified in the sidescan sonar data, APTIM will create shapefiles to highlight these areas. APTIM will provide a stand alone sidescan sonar report, discussing equipment, methods, and results of the sidescan sonar survey. Maps including a sidescan sonar mosaic and any hardbottom shapefiles will be created and incorporated into the sidescan sonar report.

### **Offshore Hardbottom ESA-Listed Species Surveys**

If hardbottom/coral reef resources are documented within the sidescan sonar survey investigation area (1,000 feet of the borrow area), an ESA-Listed Coral Species Survey will be conducted on those resources. The ESA-Listed Coral Species survey will be conducted following the NMFS protocol described above.

### **Task 2 – Meetings and Presentations**

This task is intended to support the Town of Palm Beach with both scheduled and impromptu meetings or presentations that may arise relating to the federal permit extension requests. This may include but not be limited to coordination and meeting with Town staff, responding to Town staff and Council requests, preparation of memorandums, assembling and analyzing existing documents and information, preparing for and/or participating in conference calls, site visits, meetings and/or presentations.





Aptim Environmental & Infrastructure, LLC  
6401 Congress Ave, Suite 140  
Boca Raton, FL 33487  
Tel: +1 561 391 8102  
Fax: +1 561 391 9116  
www.aptim.com

October 25, 2023

Stacy Buck  
Coastal Protection Engineering LLC  
5301 N. Federal Hwy, Suite 335  
Boca Raton, FL 33487

**Subject: Proposal for the Town of Palm Beach Mid-Town Beach Nourishment Project Federal Permitting**

Dear Stacy:

This proposal is in response to Coastal Protection Engineering's (CPE) request for Aptim Environmental & Infrastructure, LLC (APTIM) to provide professional environmental services in support of the Mid-Town Beach Nourishment Project for the Town of Palm Beach (ToPB). Thank you for the opportunity to provide these services.

**Scope of Work**

The scope of services outlined below will include federal permitting support and biological, geophysical, and bathymetric data collection and analysis.

**Task 1 – Mid-Town Beach Nourishment Project Federal Permitting**

**Federal Permitting**

APTIM will support the federal permitting needs for the Mid-Town Beach Nourishment Project. APTIM shall review and provide environmental documents and GIS data and/or map deliverables as needed.

**Nearshore Hardbottom ESA-Listed Coral Survey for SARBO Compliance**

The SARBO requires surveys for ESA-listed coral colony and Acropora critical habitat of hardbottom within 500 feet of the equilibrium toe of fill (ETOF) and in proximity to pipeline corridors. Overlaying the Mid-Town project template on recent hardbottom delineations that fall within 500 feet of the Mid-Town project area revealed that 70 sampling sites will be surveyed adjacent to the ETOF. Three (3) additional sites will be sampled to cover the hardbottom within 100 feet of the three pipeline corridors in order to bring the project into compliance with the SARBO. Each sampling site measures 1-hectare and will be surveyed by two marine biologists using a 2-tiered approach as detailed in the SARBO.

APTIM will provide a marine biologist and boat captain and the equipment listed in Exhibit A of this proposal to conduct this survey. It is estimated that the survey shall take up to nine (9) field days to complete. APTIM will assist in the field planning, data management, data deliverables, and observation

report development.

### **Offshore Hardbottom Investigations near Borrow Area for SARBO Compliance**

North Borrow Area 1 (NBA-1) has been previously authorized for the Mid-Town Beach Nourishment project. The NMFS SARBO requires that the area within 1000 feet of a borrow area be surveyed for hardbottom resources.

**Sidescan Sonar Survey.** The NMFS SARBO requires that geophysical surveys be conducted within 1000 feet of a borrow area in order to determine if hardbottom/coral reef resources are located in proximity to the area proposed for dredging. APTIM is proposing to conduct a sidescan sonar survey, providing 100% coverage of NBA-1, including a 1,000 foot buffer. APTIM will utilize an Edgetech 4125 dual frequency high-resolution sidescan sonar system to perform the survey. The Edgetech 4125 utilizes both 600 kHz and 1600 kHz frequencies, with operating ranges of 120 meters and 35 meters, respectively. APTIM is proposing to collect data on 100 meter spaced survey tracklines which will provide greater than 100% seafloor coverage with the low frequency, 600 kHz. APTIM is proposing to collect up to 16 nautical miles of sidescan sonar data throughout the survey area, comprised of 11 shore parallel main lines and 4 shore perpendicular tie lines (500 meter spacing). This survey will be conducted in compliance with the NMFS SARBO, Appendix G – Geophysical and Geotechnical Surveys PDCs. Upon completion of field data collection activities APTIM will process the sidescan sonar data utilizing Chesapeake Technologies SonarWiz 7 processing software. APTIM will post-process, bottom-track and apply gain settings, to the data set before interpreting for any hardbottom. If hardbottom is identified in the sidescan sonar data, APTIM will create shapefiles to highlight these areas.

It is estimated that the field data collection effort will take one (1) day of data collection. APTIM will provide a stand alone sidescan sonar report, discussing equipment, methods, and results of the sidescan sonar survey. Maps including a sidescan sonar mosaic and any hardbottom shapefiles will be created and incorporated into the sidescan sonar report.

**Navigation.** APTIM's navigational, sidescan sonar and echo sounder systems will be interfaced with an onboard computer and the data integrated in real time using Hypack 2023. Hypack 2023 is a state-of-the-art navigation and hydrographic surveying system. The locations of the towfish tow-points and transducer mounted on the vessel will be measured in relation to the GNSS receiver and entered into the Hypack survey program. The length of cable deployed between the tow-point and the towfish will also be measured and entered into Hypack.

Hypack uses these values to monitor the actual position of each system in real time. Online screen graphic displays include the pre-plotted survey lines, the updated boat track across the survey area, adjustable left/right indicator, and other positioning information, such as boat speed, quality of fix measured by Position Dilution of Precision (PDOP), and line bearing. The digital data will be merged with the positioning data, video displayed, and recorded to the acquisition computer's hard disk for post

processing and/or replay.

**Bathymetric Survey.** APTIM will collect bathymetric data concurrently during the sidescan sonar survey. APTIM is proposing to collect data on 100 meter spaced survey tracklines within NBA-1, including a 1,000 ft buffer. Bathymetric data will be collected using an ODOM E20 echosounder with digitizer with a through hull mounted transducer. The echosounder operated at 200 kHz and calibrated daily for speed of sound using a Valeport Swift sound velocity profiler. Bar checks will also be performed daily (at the beginning and end of each survey day) to verify draft and sounder calibration. Bar checks will be performed from a depth of 5 ft to a depth of 25 ft. A Trimble R8 GNSS and a TSS DMS-25 dynamic motion sensor will be used onboard the survey vessel to provide instantaneous tide corrections as well as heave corrections. Data will be digitally stored using Hypack Software. As previously mentioned, to maintain the vessel navigation along the planned survey lines, Hypack navigation software will be used. All survey operations will be conducted under the direct responsible charge of a Florida Licensed Professional Surveyor and Mapper and will be in accordance with the “Standards of Practice” set forth in Florida Statue 472, Administrative Code 5J17.

**Offshore Hardbottom ESA-Listed Species Surveys.** If hardbottom/coral reef resources are documented within the sidescan sonar survey investigation area (1000 feet of the borrow areas), an ESA-Listed Coral Species Survey will be conducted on those resources. The ESA-Listed Coral Species survey will be conducted following the NMFS protocol described above.

APTIM will provide a marine biologist and boat captain and the equipment listed in Exhibit A of this proposal to conduct this survey. It is estimated that the survey shall take up two (2) field days to complete. APTIM will assist in the field planning, data management, data deliverables, and observation report development.

### **Schedule and Summary**

APTIM proposes to provide these services as detailed in Exhibit A on a time and materials basis for an estimated Not-To-Exceed amount of \$67,057.27 to be billed in accordance with this proposal and subject to the terms and conditions of the Agreement between the Parties dated January 9, 2020 and as Amended and issue a Purchase Order or Notice to Proceed for the referenced services in the name of our licensed contracting entity, Aptim Environmental & Infrastructure, LLC. Although this proposal is detailed by separable items and estimated by specific staff and categories, it is anticipated that some work elements will exceed the estimate while others fall below the estimate to complete.

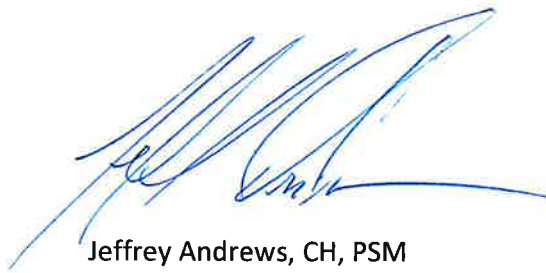


Thank you for the opportunity to provide these services and please do not hesitate to call if you have any questions.

Sincerely,



Katy Brown  
Lead Marine Biologist  
Aptim Environmental & Infrastructure, LLC.



Jeffrey Andrews, CH, PSM  
Director Subject Matter Expert

cc: Debbie Neese, APTIM  
Patrick Bryce, P.G., APTIM



**EXHIBIT A**

**FEE SCHEDULE**



**EXHIBIT A**

**Town of Palm Beach**

## Mid-Town Beach Nourishment Project Federal Permitting

Prepared by: Aptim Environmental & Infrastructure, LLC

Tasks	Task Total	Labor							Equipment										Direct	
		Boat Captain	Marine Biologist II	Professional Geologist	Geologist II	Professional Surveyor & Mapper	Surveyor	GIS Operator	Survey Boat (24 ft)	Trimble Differential GPS	Underwater Camera	SCUBA Tanks (Nitrox)	Edgetech 4200 FS Sidescan Sonar System	Sonar Wizard Map Sidescan Data Processing Package	Trimble RTK GPS	Odom Hydrotrack Sounder	Heave, Pitch, Roll Compensator	Speed of Sound Velocity Meter	Hypack/Dredge Pack Navigation System	Equipment & Insurance
		(Hours)	(Hours)					(Hours)	(Days)	(Days)	(Days)	(Total No.)							(Days)	day)
Task 1. Mid-Town Federal Permitting																				
Permitting	\$ 1,672.73		8				8													
ESA-Listed Species Survey	\$ 36,272.73	112	134					9	9	9	108							9	9	
Borrow Area Investigations																				
Sidescan Sonar & Bathymetric Survey	\$ 20,748.18	46		16	78	8	30	8	1	1		1	3	1	1	1	1	3		
Borrow Area ESA-Listed Species Survey	\$ 8,363.64	26	32						2	2	2	24						2	2	
	Total =	184	174	16	78	8	30	16	12	12	11	132	1	3	1	1	1	1	14	11
	Rate =	\$ 72.73	\$ 100.00	\$ 145.45	\$ 86.36	\$ 145.45	\$ 86.36	\$ 109.09	\$ 718.18	\$ 377.27	\$ 29.09	\$ 17.27	\$ 631.82	\$ 140.91	\$ 450.00	\$ 150.00	\$ 195.45	\$ 57.27	\$ 236.36	68.18
	Cost =	\$13,381.82	\$17,400.00	\$2,327.27	\$6,736.36	\$1,163.64	\$2,590.91	\$1,745.45	\$8,618.18	\$4,527.27	\$320.00	\$2,280.00	\$631.82	\$422.73	\$450.00	\$150.00	\$195.45	\$57.27	\$3,309.09	\$750.00
LABOR COST =		\$45,345.45																		
EQUIPMENT COST =		\$20,961.82																		
DIRECT EXPENSE COST =		\$750.00																		
TOTAL PROJECT COST =		\$67,057.27																		