

TASK ORDER No. 14**CONSTRUCTION MONITORING SERVICES AND
PERMIT COMPLIANCE
SMATHERS BEACH****RESOLUTION NO. 17-299**

General

The City of Key West (City) manages many public beaches along its shoreline, of which Smathers Beach is the largest. Smathers Beach is located along South Roosevelt Boulevard on the southern coast of Key West. Atkins North America, Inc. (Atkins) assisted the City with obtaining the Consolidated Joint Coastal Permit (JCP) and Sovereign Submerged Lands Authorization from the Florida Department of Environmental Protection (FDEP) (permit No: 0129031-005-JC), and the U.S. Army Corps of Engineers (USACE) Department of the Army (DA) permit (permit No: SAJ-1998-01677) for the continued maintenance of Smathers Beach. The JCP, issued on July 12, 2013, and the DA permit, issued on September 28, 2017, authorize the periodic placement of beach compatible sand along the approximately 3,000-linear foot beach over a 15-year period and 10-year period, respectively.

The initial beach restoration project involved the placement of 36,000 cubic yards of sand and mitigated for 5.2 acres of seagrass habitat at a site known as the blimp pad in 2000. The City last renourished Smathers Beach in 2011 (western and central portion) and 2013 (eastern portion). Since that time the beach has experienced erosional forces which has resulted in a reduction in beach width to the popular attraction used by local residence and tourists. The City desires to renourish Smathers Beach to replace the eroded beach width.

The City will select a construction firm (contractor) to conduct the sand placement activities on Smathers Beach through its Invitation to Bid (ITB) process. The City has requested Atkins provide professional environmental engineering services to conduct construction monitoring and permit compliance monitoring services for the renourishing of Smathers Beach. The following is the scope and fee for the delivery of these services.

Purpose

The purpose of this Task Order is to provide professional environmental engineering services for construction monitoring during the sand placement activities, and to provide permit-required pre, during, and post-construction physical and biological monitoring. The scope of services will entail: assisting the City with contractor regulatory permit compliance and contract agreement compliance; conducting beach renourishment inspections; conducting topographic and hydrographic beach surveys; preparing engineering reports on beach performance; and conducting biological assessments of the beach renourishment and its effects on the nearshore and offshore environment.

This Task Order includes the following Scope of Services to be performed by Atkins under the terms of Resolution No. 17-299.

A. SCOPE OF SERVICES

1.0 Project Initiation and Permit Compliance

The following services will be provided under Task 1:

- Project kick-off meetings, which includes both internal and external meetings for the beach renourishment project (Task 1.1). Atkins will meet with the City to discuss the overall project goals and timelines. Atkins will meet internally to properly allocate its resources and prepare a project schedule based on the timelines discussed with the City. External coordination on behalf of the City will occur between Atkins and regulatory agencies including, but not limited to, the FDEP (Beaches, Inlets, and Ports Section), the USACE, and the Florida Keys National Marine Sanctuary (FKNMS). Atkins will also coordinate with the Key West Sea Turtle Club for sea turtle nest monitoring.
- As ENGINEER for the renourishment project, Atkins will review the required submittals outlined in the ITB #18-006 that will be prepared by the successful bidder (contractor) (Task 1.1).
- Atkins will coordinate and chair the permit-required pre-construction agency meeting ahead of the start of construction (Task 1.1). Atkins will schedule the meeting to include representatives from FDEP, USACE, FKNMS, the City, and the contractor. The meeting will be held at the City offices in Key West.
- A project-specific Health & Safety Plan for Atkins personnel will be developed for the construction monitoring, and the long-term physical and biological monitoring activities (Task 1.1).
- During the approval process for the DA permit, the FKNMS provided comment on the proposed biological monitoring plan for the periodic beach renourishment authorization. The FKNMS approved the general outline of the proposed monitoring methodologies but required a detailed plan be submitted for approval prior to the first sand placement effort. Atkins will prepare the detailed biological monitoring plan for approval by FKNMS (Task 1.2). The plan will be prepared in general accordance with the FDEP Standard Operation Procedures (SOP) For Nearshore Hardbottom Monitoring Of Beach Nourishment Projects (February 2016) and will service as the basis for biological monitoring for the duration of the current permits.
- Coordinate with the Key West Sea Turtle Club on pre-dawn marine sea turtle nesting walk schedules and personnel (Task 1.2).
- Atkins will submit the permit-require project commencement notifications to the permitting agencies ahead of the start of construction (Task 1.2).

Deliverables

- Project schedule
- Permit condition summary
- Pre-construction meeting minutes and any required additional submittals as a result of the meeting.
- Review comments on contractor deliverables
- FKNMS-approved biological monitoring plan
- Project commencement agency notifications

2.0 Construction Monitoring

The following services will be provided under Task 2:

- Pre-construction inspections services (Task 2.1) to include; coordinate with contractor on mobilization and construction start schedule, inspection of construction equipment for safe environmental operation, inspect turbidity control devices for proper installation, conduct pre-construction marine sea turtle lighting survey.
- Conduct construction monitoring (estimated 21 days) (Task 2.2) to include;
 - Conduct daily briefings and weekly meetings with contractor
 - Do not allow construction to begin until daily marine turtle monitoring of the area has been conducted
 - Verify marine sea turtle nesting monitoring morning walks are being conducted and recorded by the Key West Sea Turtle Club representative(s).
 - Review contractor invoices and provide recommendations to the City
 - Daily monitoring and recording of construction activities
 - Random visit to stockpile site to observe delivery of sand, random visual assessment of truck volumes with comparison to delivery ticket volumes stated.
 - Oversight of placement of sand on the beach and assessment of sand quality to ensure meets standards in plans, specifications and permit documents
 - Collection and logging of periodic sand samples for quality assurance Record
 - Daily construction monitoring observations documented with photographs.
 - Oversee turbidity monitoring as required by regulatory authorizations and provide required reports
 - Oversee beach tilling and any compaction monitoring, if required
 - Provide daily project progress reports to the City
 - Maintain copies of project records
 - Monitor and advise on placement of erosion control devices
 - Prepare final engineers report at conclusion of project and submit along with notice of completion to agencies as required by permits
 - Within 30 days following project completion submit appropriate written statement of completion and certification providing confirmation that activities were performed in compliance with the plans, specifications and all conditions of the permit. Any deviations will be duly noted and described. If completed project is substantially different than permitted plans, substantial deviations shall be noted and provided on a set of as-built drawings.
- Post-construction services (Task 2.3) will include; Ensure contractor safe demobilization and proper site cleanup, assist the City with the review of contractor

invoices and project closure documentation, and, notifications to agencies for construction completion.

3.0 Biological Monitoring and Reporting

Atkins last conducted a field assessment in 2011 to locate, delineate and characterize existing benthic resources (e.g. seagrasses, sandbottom, hardbottom, corals, etc.) within the marine survey areas at Smathers Beach. Since that time, there has been noticeable changes to the habitats in the marine survey area that warrant an updating of the benthic resource map to be used for the anticipated beach renourishment biological monitoring. The updated map will ensure proper reporting of possible impacts to the resources in the nearshore environment from the proposed sand placement. Knowledge of the existing resources can be used to determine the potential for impacts from construction and the potential for compensatory mitigation.

A visual reconnaissance of the project area will be conducted, during which time 2 to 4 Atkins biologists will haphazardly cover the sampling area via snorkel. Polygonal contour vertices will be identified by snorkelers in the water and recorded by the operator of the Trimble floating adjacent to the biologist. Successive polygons will then be added to the shapefile until the entire project area has been sufficiently mapped (Task 3.1). Hardbottom outcroppings or edges will be mapped using the same technology. Atkins will conduct surveys along the existing survey transect lines, identifying and mapping individual coral colonies with diameters >4.0 in (>10.2 cm) using a Trimble Geo-XT handheld DGPS unit, running ArcPad 10.2. Each coral will be recorded for future reference if mitigation is required. A map of the individual coral colony locations will be produced and incorporated into the bathymetry and seagrass data using Geographical Information System (GIS) software. All submerged lands within the 550-foot buffer will be sampled for seagrass occurrence using an agency approved approach. The objectives of the survey will be (1) to produce a detailed, species-specific map capable of estimating impact acreage, and (2) to quantify the distribution of seagrass within the project area using NMFS/NOAA methods (National Marine Fisheries Service 2002).

Three biological monitoring events will be conducted under this Task Order (Task 3.1 - 3.3). The schedule for the monitoring events will be as follows:

- **Pre-Construction.** Also called the Baseline Assessment, this event will include the remapping of the project area benthic communities. This monitoring event will be conducted within 30 days prior to construction.
- **During-Construction.** Three mini assessments will be conducted to assess the effects of the sand placement on the nearshore environment during the sand placement.
- **Immediate post-construction.** To be conducted within 14 days post-construction

Atkins will coordinate with the Key West Sea Turtle Club to submit the permit-required annual sea turtle nesting data to FDEP.

Deliverables

- Biological Monitoring Reports within 30 days of each monitoring event, with the exception of the during-construction events. The results of the during-construction monitoring events will be presented to the City via email updates within 24 hrs of completion. The pre-construction and immediate post-construction biological monitoring reports will be submitted to the City for review and comment prior to submission to the USACE and FKNMS.
- Annual sea turtle nesting data for year 2018.

4.0 Physical Monitoring and Reporting

The physical monitoring services described below will be repeated for each event as specified (Tasks 4.1 – 4.2). The monitoring protocols will be repeatable for comparison purposes through the end of the Task Order.

Hydrographic and Topographic Surveys

In order to conduct surveying activities a network of control stations will be established or recovered in the proposed survey area with both vertical and horizontal values. The network will consist of Local 2nd Order, Class 2 vertical (both NAVD88 and NGVD29), Tidal Bench Marks and Horizontal (NAD83) control points. Vertical points will be tied into the Tidal Bench Mark in the area and the horizontal control points shall be tied into the Florida GPS Network. The existing Permanent Reference Control Monuments established for Smathers Beach will be used for this monitoring. The network of control stations will include temporary benchmarks (3rd order vertical/horizontal) and physical ground topography points (3rd order vertical/horizontal). The ground topography points will be either digital, differential, or trigonometric measurements.

All work performed will meet or exceed USACE requirements, FDEP requirements, and Florida Minimal Technical Standards of Chapter 472.027 F.S. Rule 5J-17 Florida Administrative Code.

Data Resolution - The topographic data will be collected at 100 intervals not to exceed 25 ft. along the existing profiles and all grade breaks and attributed items along the profile sufficient to describe each profile. All survey data will be provided in digital form and used to produce a Digital Terrain Model (DTM) map at 0.5 ft contour intervals and tied to the Mean High Water (MHW) line as approved by FDEP.

Data Collection - The Topographic data will be collected seaward out to approximate 600 feet in order to establish continuity with offshore data and landward to no less than 150 landward of the established MHW line as approved by the FDEP or to the edge of pavement of the abutting roadway.

Atkins will conduct hydrographic and topographic surveys on the schedule as follows:

- **Pre-construction.** Conducted within ninety days of construction start date (Task 4.1).
- **Post-construction.** To be conducted within 14 days of sand placement (Tasks 4.2).

Deliverables - All survey data will be provided in digital form and used to produce the DTM map. Signed and sealed surveys by a Professional Land Surveyor will be submitted for the

pre-construction, post-construction and three annual monitoring events. Surveys drawings will be submitted electronically within 30 days of each monitoring event.

Engineering Report

An engineering study will be conducted with the completion of the post-construction hydrographic/topographic survey event (Task 4.2). The report will summarize the performance of the nourishment project, analyze shoreline and volumetric changes, identify erosion and accretion patterns, and identify any adverse impacts as a result of the project, specifically related to direct burial of benthic habitats. Comparisons of the survey data between monitoring events will be analyzed using MATLAB computer software. Atkins will prepare and submit the engineering report to the regulatory agencies on the schedule as follows:

- **Immediate post-construction.** 90 days of completion of the post-construction hydrographic and topographic survey

Deliverables – Engineering Report prepared within 90 days of completion of the post-construction hydrographic and topographic survey. Report will be submitted to the City for review and comment prior to submission to FDEP and USACE.

B. ASSUMPTIONS

The following assumptions apply.

- Fair weather prevails during field work.
- City and agencies review document submissions in a timely manner.
- Mitigation alternatives analysis for benthic habitat impacts, or mitigation plan development is not included in this scope of services.

C. SCHEDULE

Atkins will provide a detailed project schedule as part of Task 1.

D. COMPENSATION

Atkins will perform this Task subject to the assumptions and qualifications on a time charge basis of One Hundred Eighty-Two Thousand, Three Hundred and Twenty-Eight Dollars (**\$182,328.00**), adjusted for rounding.

The basis of the time charge fee is provided as **Attachment A**. The fiscal year breakdown is also provided. The job categories, hourly billing rates, and allowance for reimbursable expenses are in conformance with Resolution No. 17-299. Atkins will invoice for the services on a monthly basis on the work completed and accepted as of the date of the invoice.

Attachment A

**Smathers Beach CEI and Permit Compliance
Resolution 17-299 Task Order #14**

Task	Category	FY	Rodperson Field Tech	Tech I	Tech II	Surveyor I	Sr Tech I	Sr Tech II	PM/PE	Sr. Tech III	Sr PM	Sr Tech Profess.	PTP/Sr. Div Manager	Hours	Cost	
			\$49.00	\$65.00	\$87.00	\$94.00	\$109.00	\$125.00	\$149.00	\$162.00	\$175.00	\$195.00	\$232.00			
1.0 - Project Initiation and Permit Compliance																
1.1 Project Initiation, H&S Plan, Contract Assistance, Meetings	18						16		40			3	1	60	\$8,521.00	
1.2 Permit Compliance	18							32	24			4		60	\$8,356.00	
														Subtotal	120	\$16,877.00
2.0 - Construction Monitoring																
2.1 Pre-Construction Construction Engineering Inspection	18							4	16					20	\$2,884.00	
2.2 Construction Engineering Inspection - 21 days	18								210	21				231	\$34,692.00	
2.3 Contract Assistance/Closeout	18								24			2		26	\$3,966.00	
														Subtotal	277	\$41,542.00
3.0 - Biological Monitoring and Reporting																
3.1- Pre-Construction Biological Monitoring																
3.1.1 Biological Assessment and Habitat Mapping	18				96			56	56			2		210	\$24,086.00	
3.1.2 Report Preparation	18				16			40	16		2	1		75	\$9,321.00	
3.2 - During-Construction Biological Monitoring and Reporting	18				9			24				1.5		34.5	\$4,075.50	
3.3 - Immediate Post-Construction Biological Monitoring																
3.3.1 Biological Assessment	18				80			40	48					168	\$19,112.00	
3.3.2 Report Preparation	18				16			20	8			1		45	\$5,279.00	
														Subtotal	532.5	\$61,873.50
4.0 - Physical Monitoring and Reporting																
4.1 Pre-Construction - Hydrographic Survey	18		80			40	32	16	1	2			2	173	\$14,105.00	
4.2 Immediate Post-Construction Physical Monitoring																
4.2.1 Hydrographic Survey	18		80			40	32	16	0.5	2			2	172.5	\$14,030.50	
4.2.2 Engineering report	18						40	24	1		4			69	\$8,209.00	
														Subtotal	414.5	\$36,344.50
														Total Labor	1344	\$156,637.00
														Total Expenses		\$25,690.75
														Total		\$182,327.75

Notes:

- 1) The categories and rates are derived from Resolution 17-299
- 2) Fees will be billed on a time charge basis.

Smathers Beach CEI and Permit Compliance
Resolution 17-299 Task Order #14

Item	Unit	Unit Price	Task 1	Task 2	Task 3	Task 4
Per Diem ¹	day	\$69.00	\$69.00	\$1,587.00	\$2,760.00	\$2,070.00
Mileage ²	mile	\$0.545	\$163.50	\$654.00	\$654.00	\$327.00
Tolls	Each	at cost				
Accommodations ³	per/nite	\$201.00	\$201.00	\$4,623.00	\$6,432.00	\$4,824.00
Boat to 20'	1/2 day	\$200.00				
Underwater Camera ⁴	day	\$30.00			\$300.00	
Snorkel Gear	day	\$15.00		\$45.00	\$600.00	
SCUBA Equipment	day	\$45.00				
Misc. Field Supplies ⁵	day	\$25.00		\$131.25	\$125.00	\$125.00
Subtotal			\$433.50	\$7,040.25	\$10,871.00	\$7,346.00

Total **\$25,690.75**

Notes:

- 1) Meal rate based on GSA FY 2018 Per Diem Rates for Key West
 - a) Task 1 - One person for one day (pre-construction meeting)
 - b) Task 2 - One field person for 23 days (Mob/Demob, CEI)
 - c) Task 3 - Four field persons for five days for two monitoring events
 - d) Task 4 - Three field persons for five days for two monitoring events
- 2) Mileage rate based on IRS Standard Mileage Rates for 2018
- 3) Accommodations rate based on 2018 GSA rate for Key West Max lodging for May - September (excluding taxes).
 - a) Task 1 - One person for one night (pre-construction meeting)
 - b) Task 2 - One field person for 23 nights (Mob/Demob, CEI)
 - c) Task 3 - Four field persons for four nights for two monitoring events
 - d) Task 4 - Three field persons for four nights for two monitoring events
- 4) Underwater Camera
 - a) Task 3 - For five days for two monitoring events
- 5) Misc. Field Supplies.
 - a) Task 2 - For 21 days @ 1/4 rate (CEI)
 - b) Task 3 - For five days for two monitoring events @ 1/2 rate
 - c) Task 4 - For five days for two monitoring events @ 1/2 rate

Fiscal Year Project Cost Breakdown

FY	Labor					Expenses					FY Totals
	Task1	Task 2	Task 3	Task 4	Totals	Task1	Task 2	Task 3	Task 4	Totals	
FY 18	\$16,877.00	\$41,542.00	\$61,873.50	\$36,344.50	\$156,637.00	\$433.50	\$7,040.25	\$10,871.00	\$7,346.00	\$25,690.75	\$182,327.75
	<u>\$0.00</u>	<u>\$0.00</u>	<u>\$0.00</u>	<u>\$0.00</u>	<u>\$0.00</u>	<u>\$0.00</u>	<u>\$0.00</u>	<u>\$0.00</u>	<u>\$0.00</u>	<u>\$0.00</u>	<u>\$0.00</u>
	\$16,877.00	\$41,542.00	\$61,873.50	\$36,344.50	\$156,637.00	\$433.50	\$7,040.25	\$10,871.00	\$7,346.00	\$25,690.75	\$182,327.75