ATKINS

TASK ORDER No. 13

SOUTH BEACH DESIGN AND PERMITTING

RESOLUTION NO. 17-299

General

The City of Key West (City) manages many public beaches along its shoreline, South Beach being one of them. South Beach is located at the southern end of Duval Street on the Atlantic Ocean side of Key West island (See Figure 1). Over the past few years, the approximately 230 linear foot beach has experienced erosional forces which has resulted in a severe loss of sand and a receding of the shoreline. The City desires to nourish South Beach to add more beach width for use by local residence and tourists, and to protect the restaurant structure behind it.

The City has requested Atkins North America, Inc. (Atkins) provide professional engineering services to prepare a design for South Beach to be utilized in obtaining permits from the Florida Department of Environmental Protection (FDEP) and the U.S. Army Corps of Engineers (USACE) for the nourishing of the severely eroded shoreline. Though the Joint Coastal Permit (JCP) approval process is conducted by both agencies, each issues its own permit at completion, follow separate regulatory guidelines, and operate on separate schedules.

The following is the scope and fee for the preparation of beach design drawings and permit applications for the nourishing of South Beach.

Purpose

The purpose of this Task Order work is to conduct the necessary engineering calculations to prepare technical specifications for a beach design, and prepare permit applications for nourishing of South Beach with sand from an upland source. The professional engineering services entail the review of the available topographic and hydrographic data, preparation of preliminary beach designs, assessment of the benthic habitat, conduct topographic and hydrographic survey, prepare final beach design for permitting, and permitting.

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

PHASE I – Site Assessment and Preliminary Design

1.0 Project Scoping and Kick-Off

The Project Kick-off task includes both internal and external meetings for the South Beach design and permitting project (Task 1.1). Internal meetings will occur with representatives from

Atkins and City management to discuss the overall design and permit application process, the long and short-term direction the City would like to take in managing the beach, and to obtain any relevant documents/literature from the City for the application submittals. One representative from Atkins will visit the site and meet with City officials while conferencing in other Atkins technical staff as necessary. External coordination on behalf of the City will occur between Atkins and governmental agencies including, but not limited to, the FDEP Beaches, Inlets, and Ports Section, and the USACE. The appropriate level of agency coordination will occur at the start of the application process and continue throughout the length of the project, as budget allows.

2.0 Pre-Permit Site Assessment and Preliminary Beach Design

Benthic Habitat Assessment

One of the items listed in the FDEP permit application is a description and quantification of natural communities at the project site. This includes submerged aquatic vegetation and hardbottom communities that may exist offshore of the proposed construction activities. Knowledge of the natural communities can be used to determine the potential for impacts from construction and what would be the potential for compensatory mitigation.

Atkins is not aware of any current biological assessments for South Beach. As such, field biologists utilizing snorkeling equipment will map the natural communities (Task 2.1.2) from the current shoreline to 450 ft waterward of the anticipated design toe of fill as determined in the Preliminary Beach Design (Task 2.2). Data collected during the biological assessment will be compiled, analyzed, and presented in a benthic habitat assessment report. This initial report will be submitted to the City in preparation for submission to the permitting agencies in Phase II (Task 5) of this project.

In advance of the field effort, Atkins will obtain authorization from the Florida Keys National Marine Sanctuary (Sanctuary) to conduct the biological assessment, as the project site is located within Sanctuary boundaries (Task 2.1.1). To obtain the authorization, Atkins will submit a permit application detailing the location of the proposed project, the purpose of the South Beach nourishment project, the methods and protocols that will be utilized during the biological assessment, potential environmental impacts associated with construction activities, and the rationale for the project.

Preliminary Beach Design

After consultations with the City to determine the desired general layout of the proposed beach, Atkins will prepare a preliminary beach design (Task 2.2.1). The preliminary design will outline desired berm elevations, berm width, berm slope, and equilibrium toe of fill (ETOF). The ETOF will be critical in determining the limits of the biological assessment boundaries (Task 2.1.2). Atkins is anticipating producing three beach design options for the City's consideration over the course of the preliminary beach design development process (Tasks 2.2.1 and 2.2.2).

Utilizing the data obtained from the findings of the biological assessment and the preliminary beach design, Atkins can assist the City with making management decisions as to the whether to continue onto Phase II of the project; final design and permitting.

One of the main purposes for separating this project into two phases is to allow the City to evaluate possible beach designs and their impacts on the natural environment in the vicinity of South Beach (Phase I) before committing its financial resources to full beach design and permitting (Phase II). Compensating for impacts to natural resources can often be costly and may involve a long-term commitment. If at the completion of the Phase I tasks it is determined that impacts to natural resources is unavoidable, and the management decision is made to continue onto Phase II, a mitigation plan would have to be developed. This scope does not include the services necessary to prepare a mitigation plan for regulatory approval. If compensatory mitigation is required for this project, Atkins will prepare a separated scope and fee to prepare said plan. Phase II tasks would continue in conjunction with mitigation plan development.

PHASE II – Final Design and Permitting

3.0 Baseline Hydrographic Data

Survey

The JCP application package also requires topographic and bathymetric survey drawings of the proposed project site, including profiles and a contour map that reflect conditions within the past six months. The most recent topographic/bathymetric survey completed at South Beach was conducted in November 2017 for Post-Hurricane Irma sand loss assessment. This survey can be utilized in preparing the preliminary beach design (Task 2.2) but is not comprehensive enough for developing and permitting a final beach design. The topographic/bathymetric task required for the JCP application involves the establishment of survey controls/monuments, topographic and bathymetric data collection, and the submission of survey maps signed and sealed by a certified land surveyor (Tasks 3).

Under the direction of Atkins, Florida Keys Land Surveying (FKLS) will perform a Specific Purpose Survey of South Beach to illustrate existing sand profiles and beach topography. The survey will extend further offshore and include areas to the west not surveyed for the Post-Hurricane Irma services performed by Atkins. The survey limits for the beach design will be determined by the information gathered during Phase I of this project. This survey will also be used to establish the erosion control (ECL) line if needed (Tasks 3.1.2).

Erosion Control Line

The JCP application process may also require the establishment of an ECL for South Beach to define the boundary between private upland property and submerged state-owned lands (161.161 (5), F.S.). Field data on the location of the ECL will be collected in conjunction with the topographic and bathymetric survey data (Tasks 3.1) and a signed and sealed ECL map will be prepared for submission to the FDEP Beaches, Inlets, and Ports Section.

4.0 Final Design

Complete sets of engineering and construction drawings are required prior to submittal of the JCP application package. To produce a complete set of construction plans, Atkins coastal engineers will need to coordinate with government agencies, the biological and survey teams, and conduct geotechnical analyses to design a beach template that could be used for multiple renourishment events (Tasks 4.1, 4.2 and 4.3). The design will take into account project site

topography, beach fill material, intended use of the dry sand and wet sand beach areas, benthic habitats, ocean currents, and storm events. The signed and sealed deliverable will be submitted to FDEP and the USACE for approval and incorporation into the permit (Task 4.4).

As mentioned above, a component of the design task is geotechnical analysis of native sediment at South Beach (Task 4.3). Representative physical samples will be collected along the existing beach profile transects at South Beach and submitted to a laboratory to determine particle size, color, and carbonate content. The subsurface sand samples will be collected 18"- 24" below the surface, where possible, to avoid winnowing and sorting. It is anticipated that sediment samples will be collected along each transect at elevations of +3', 0', and -3' NAVD88 due the shallow depth of the profiles and the shallow nature of the proposed fill project A sediment QA/QC plan will also be prepared to ensure that the sediment to be used for beach nourishment meets the standards set forth in paragraph 62B-41.007(2)(j), F.A.C.

5.0 Environmental Permit Preparation

For construction projects where sand will be placed below the mean high water (MHW) line in waters of the U.S. and over sovereign submerged lands, permits are required from FDEP and the USACE. Though the JCP approval process, the permit application is submitted to the FDEP who forwards it to USACE. Atkins will prepare the JCP application package for submission to the FDEP Beaches, Inlets, and Ports Section, and track its progress through that agency and the USACE (Task 5.1). Both agencies undergo its own review process following their respective approval guidelines, operate on separate schedules, and issue their own authorizations: Consolidated Joint Coastal Permit (FDEP); and, Department of the Army (DA) permit (USACE). Atkins will coordinate responses to RAIs from both agencies as part of the permit application review process.

In addition to the survey tasks associated with establishing the ECL, a public process is required for recording the ECL (Task 5.2). This will include coordination with the FDEP Beaches, Inlets, and Ports Section and coordination with the City for setting up a public workshop and ECL hearing, notifying adjacent property owners, and publishing public notices in local newspapers and the Florida Administrative Weekly.

Deliverables:

- Project Schedule (Task 1)
- Benthic Habitat Assessment Report (Task 2)
- Preliminary Beach Design (Task 2)
- Topographic/hydrographic specific purpose survey (Task 3)
- 100% beach design permit drawings (Task 4)
- JCP application package for submission to FDEP, supplemental for submission to USACE (Task 5)
- ECL package for submission to FDEP (Task 5)
- ECL public meeting (Task 5)

Assumptions:

Based on conversations with the City the following assumptions apply.

- The preliminary beach design will be created utilizing existing survey data of South Beach collected for 2017 Post-Hurricane Irma project.
- Calculations for the ETOF for the preliminary beach design will utilize existing upland sand source information approved by FDEP for Smathers and Rest Beaches.
- The project will adhere to the State-Wide Programmatic Biological Opinion (BO). A project-specific BO will not be required.
- Atkins will prepare one JCP package for submittal to FDEP and one USACE supplemental.
- This scope includes responding to two rounds of RAIs from each agency.
- Agency RAIs are of reasonable scope and breadth. If the RAI's require field activities, these will be an add-service.
- Final decisions on whether or not to issue permits is at the sole discretion of the regulatory agencies. As such, it is understood that Atkins cannot guarantee the issuance of any permit.
- Mitigation alternatives analysis for benthic habitat impacts, or mitigation plan development is not included in this scope of services.

B. SCHEDULE

Atkins will provide a detailed project schedule as part of Task 1 but anticipates the project to be completed in 24 months.

C. COMPENSATION

Atkins will perform this Task subject to the assumptions and qualifications on a time charge basis of One Hundred Twelve Thousand, One Hundred and Twenty-One Dollars **($112,121.00)**, rounded. By Phase: **$46,963.00 for Phase I** tasks; and, **$65,158.00 for Phase II** tasks.

The basis of the time charge fee is provided as **Attachment A**. 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.

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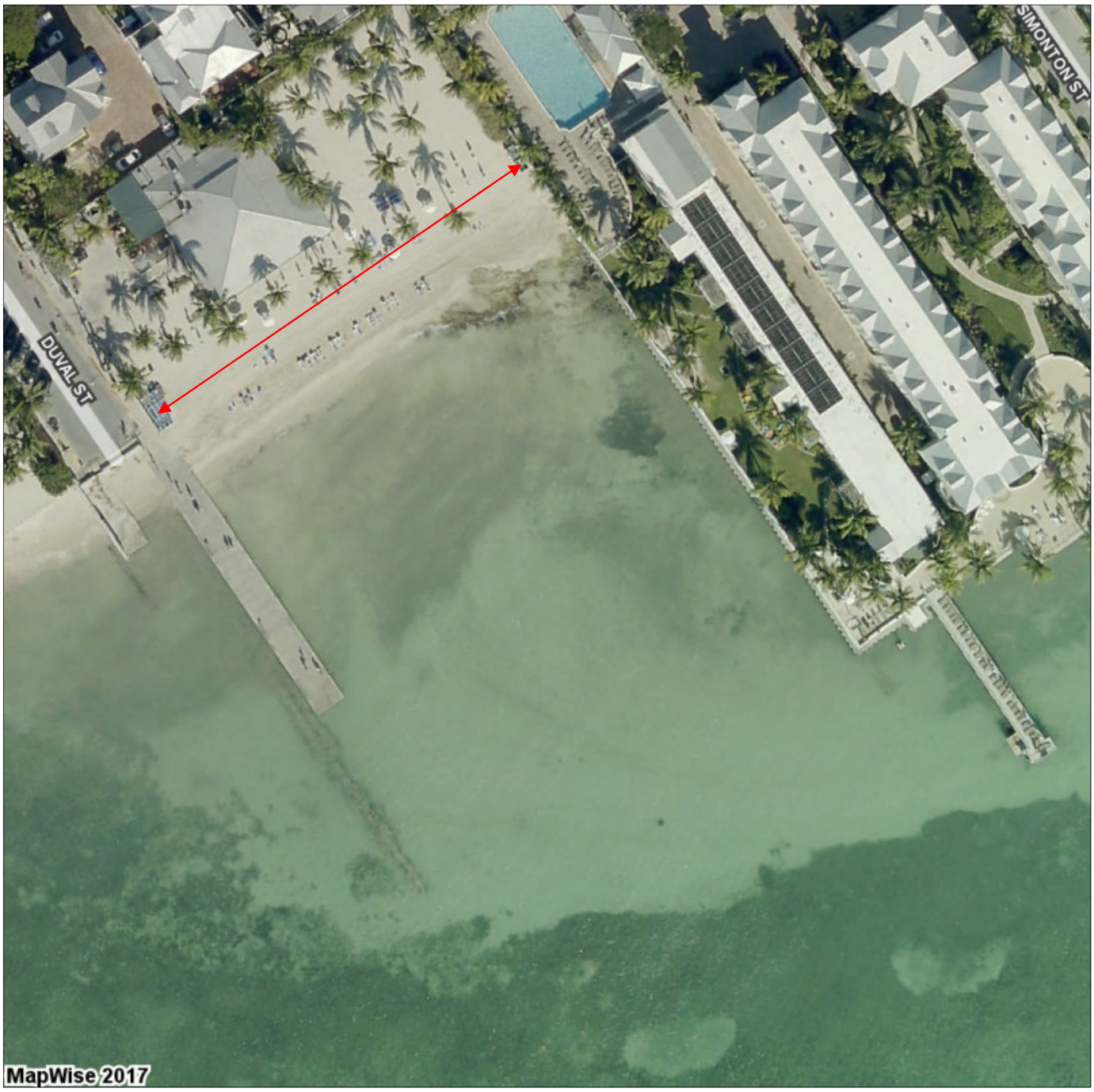
Figure 1

Task Order No. 13
Resolution No. 17-299
Beach Design and Permitting



Legend

Project Linear Width

N

0 62 124 186

	South Beach	**Figure 1**	Design and Permitting
	Nourishment Project	ATKINS 800 WATERFORD WAY MIAMI, FLORIDA 33126	Project Location Map

DESIGNED BY: WMH DATE: January 29, 2018
MODIFIED BY: DATE:
CHECKED BY: ARG

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Attachment A

Task Order No. 13
Resolution No. 17-299
Beach Design and Permitting

South Beach JCP
Resolution 17-299 Task Order #13

Category	Tech I	Tech II	Sr Tech I	Sr Tech II	PM/PG	Sr. Tech III	Sr Tech IV	PTP/Sr. Div Manager	Hours	Cost
Task	$65.00	$87.00	$109.00	$125.00	$149.00	$162.00	$195.00	$232.00		
PHASE I										
1.0 - Project Kick Off										
1.1 Project Scoping and Kick Off					16	2	2		20	$3,098.00
								Subtotal	***20***	***$3,098.00***
2.0 - Pre-Permit Site Assessment and Preliminary Design										
2.1 Benthic Habitat Assessment										
2.1.1 FKNMS Permitting					16	1		1	18	$2,778.00
2.1.2 Benthic Habitat Assessment			20	20	32	20			92	$12,688.00
2.1.3 Benthic Habitat Assessment Report				24	16	2		2	44	$6,172.00
2.2 Preliminary Beach Design										
2.2.1 Preliminary Design			20	60	16		3	4	103	$13,577.00
2.2.2 Coordination with City					24	16		2	42	$6,632.00
								Subtotal	***299***	***$41,847.00***
PHASE II										
3.0 - Baseline Hydrographic Data										
3.1 Topographic/Hydrographic Survey										
3.1.1 Survey QA/QC					8			1	9	$1,424.00
3.1.2 ECL package Submittal					24	8		2	34	$5,336.00
								Subtotal	***43***	***$6,760.00***
4.0 - Final Design										
4.1 Agency Coordination				16	8		1	1	26	$3,619.00
4.2 Topographic Survey Coordination (w/FKLS)					8				8	$1,192.00
4.3 Geotechnical Analysis				8	8		2		18	$2,582.00
4.4 Design and 100% Plan Set (Permit Drawings)			20	45	8	8		2	83	$10,757.00
								Subtotal	***135***	***$18,150.00***
5.0 - Environmental Permit Preparation										
5.1 Prepare JCP/DA Application Package, RAI Responses			16	40	80	8	4	3	151	$21,436.00
5.2 Public Process Recording of ECL					40		8	1	49	$7,752.00
								Subtotal	***200***	***$29,188.00***
								Total Labor	***697***	***$99,043.00***
								Total Expenses		***$13,077.52***
								Total		***$112,120.52***

Notes:
1) The categories and rates are derived from Resolution 17-299
2) Fees will be billed on a time charge basis.
3) Permit fees are an estimate and will be determined by the agencies upon permit application review.
4) Mitigation alternatives analysis, site assessments/determination, or plan preparation is not included in this scope of services
5) Acronyms:
FKNMS - Florida Keys National Marine Sanctuary
FDEP - Florida Department of Environmental Protection
USACE - U. S. Army Corps of Engineers
ECL - Erosion Control Line
JCP - Joint Coastal Permit
DA - Department of the Army
RAI - Request for Additional Information

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South Beach JCP
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Item	Unit	Unit Price	Task 1	Task 2	Task 3	Task 4	Task 5	
Per Diem [1]	day	$80.00	$80.00	$640.00			$320.00	
Mileage [2]	mile	$0.445	$170.88	$170.88			$341.76	
Tolls	Each	at cost						
Accommodations [3]	per/night	$209.00		$836.00			$418.00	
Snorkel Gear	day	$15.00		$120.00				
SCUBA Equipment	day	$40.00						
Geotech Sub [4]	Samples	At cost				$2,000.00		
Survey (FKLS) [5]	Each	At cost			$4,680.00			
Supplies/Shipping	Each	$100.00				$200.00	$100.00	
Permitting Fees	Each	At cost					$3,000.00	
Subtotal			***$250.88***	***$1,766.88***	***$4,680.00***	***$2,200.00***	***$4,179.76***	***$0.00***
						Total	$13,077.52	

Notes:

1) Meal Per Diem rate based on Florida Statute 112.061
   a) Task 1 - One person for 1 day for scoping meeting with City
   b) Task 2 - Four field persons for 2 days
   c) Task 5 - One person for 2 days to conduct pre-application site visit
   d) Task 5 - One person for 2 days to coordinate ECL public meeting
2) Mileage rate based on Florida Statute 112.061
3) Accommodations rate based on 2018 GSA rate for Key West (Max lodging for October)
   a) Task 2 - Four rooms for one night
   b) Task 5 - One room for one night to conduct pre-application site visit
   c) Task 5 - One room for one night ECL public meeting
4) Geotech Sub
   a) Task 4 - Analysis of native beach material. Estimated 18 sand samples at $100/sample plus shipping to laboratory.
5) Florida Keys Land Surveying (FKLS) - Sub
   a) Task 3 - Permit survey and ECL recording

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