PROPOSAL/STATEMENT OF WORK
PORT AND MARINE SERVICES

TASK 45: CITY MARINA AT GARRISON BIGHT

SURVEY, GEOTECHNICAL INVESTIGATION, DIVING & STRUCTURAL ASSESSMENT

Key West, FL

This proposal has been prepared in accordance with the current General Environmental Engineering Services Agreement between the City of Key West and Tetra Tech, Inc, dated March 24, 2020. The work described herein will be performed on a Time & Expense basis in accordance with the fee schedule established in this agreement. Fees shall be not-to-exceed unless approved in writing by the City of Key West. This proposal is valid for a period of 90 days from the date on this page.

Prepared by: TETRA TECH, Inc.
April 29, 2020

TETRA TECH, INC.

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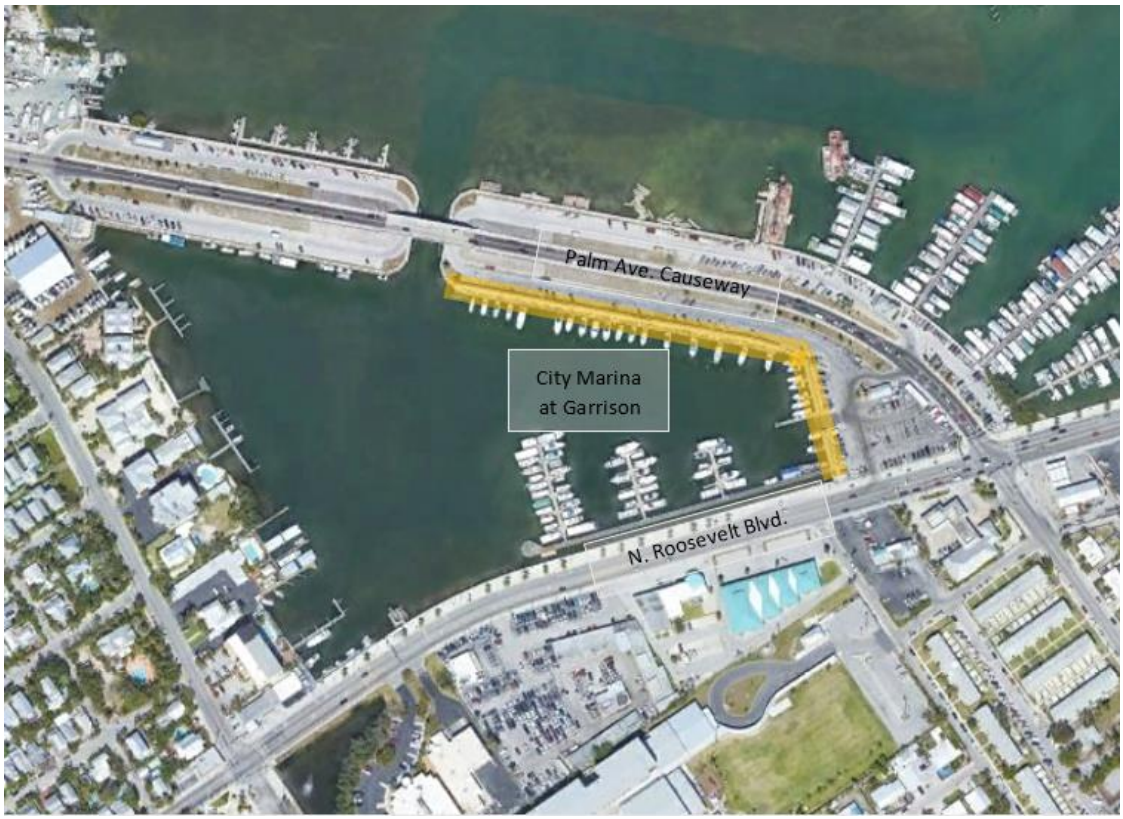
PROPOSAL / STATEMENT OF WORK

Tetra Tech will work with the City of Key West Port and Marine Services (City) to collect topographic survey and geotechnical investigations, conduct field investigations of seawall structural conditions and an engineering condition assessment of the visible elements of the seawall, for the approximately 980 LF segment of seawall located along the South side of Palm Avenue Causeway, north of North Roosevelt Blvd, and referred to as City Marina at Garrison in Key West, Florida

PROJECT LIMITS FOR SEAWALL IMPROVEMENTS TO FERRY TERMINAL SEAWALL



Insert 1: Limits of Field Surveys

Task 1.A – Field Survey (Topographic)

Tetra Tech proposes to work with a local surveyor, Florida Keys Land Surveying, (FKLS) for this project and has received a proposal to collect the topographic survey data. **A copy of the FKLS proposal is attached**. The topographic survey will illustrate the existing infrastructure adjacent to the existing seawall at Garrison Bight within the limits of the yellow area shown above. This survey shall assist not only with the assessment, but also with any future preparation of design documents and permit applications.

The topographic survey scope shall include the following:

1. Field locate all improvements, including but not limited to the seawall cap, concrete, asphalt, signs and overhang supports.
2. Field locate all above ground utilities in the said scope of work area. No underground utilities to be located.
3. Topographic data at the front and back of the top of cap, waterside at the toe of seawall and sea bottom elevation approximately 10’-15’ waterward of the existing seawall.

4. Horizontal coordinates will be referenced to grid north, based on the 2011 Adjustment of the North American Datum of 1983 (NAD 83/2011), of the Florida State Plane Coordinate System (Transverse Mercator Projection), East Zone.
5. Elevations will be in feet and based on the National Geodetic Vertical Datum of 1929 (NGVD 1929).
6. Calculate and draft all field data into a deliverable Survey.
7. Review and Certification of Deliverables

1.A / Survey Subtotal (Proposal from FKLS):	$ 7,365

Task 1.B – Field Survey (Geotechnical Investigation)

Tetra Tech proposes to work with Nutting Engineers, Inc. to collect limited geotechnical engineering information within the limits of the pier. **A copy of the Nutting proposal is attached**. The geotechnical investigation is necessary in case the proposed recommendation requires repair or replacement of the existing wall. This report will help us to conceptually determine the configuration of the proposed wall, the type of wall to be used, and its required embedment depth, among other considerations.

The geotechnical investigation will include the following:

1. Two (2) Standard Penetration Tests to a depth of 40 feet
2. Laboratory work (water content, organic content, sieve analysis)
3. Geotechnical engineering report that will include graphic logs of the test borings and a test boring location plan

1.B / Geotech Subtotal (Proposal from Nutting):	$ 6,950
1.C / Tetra Tech Admin Services:	$ 1,382
(1.A,B & C) Field Surveys Total:	**$ 15,697**

Task 2 & 3 – Diving Structural Inspection

Once the survey has been completed and the exact configuration of the seawall, pier, walkways, and seawall-toe conditions are known, the underwater structure inspection will be performed. To catalog the condition of the seawall, we are proposing to use a diving team to perform the structural assessment field work. An engineer will be present during the entire inspection to monitor the wall condition. The structural inspection is limited to the seawall and cap and does not include excavation of any tie-back rods or lateral supports. The inspection will also include the base of the boat ramp. The inspections does not include the adjoining marginal dock or finger piers, but will attempt to locate visible utilities passing through the seawall for future design coordination purposes.

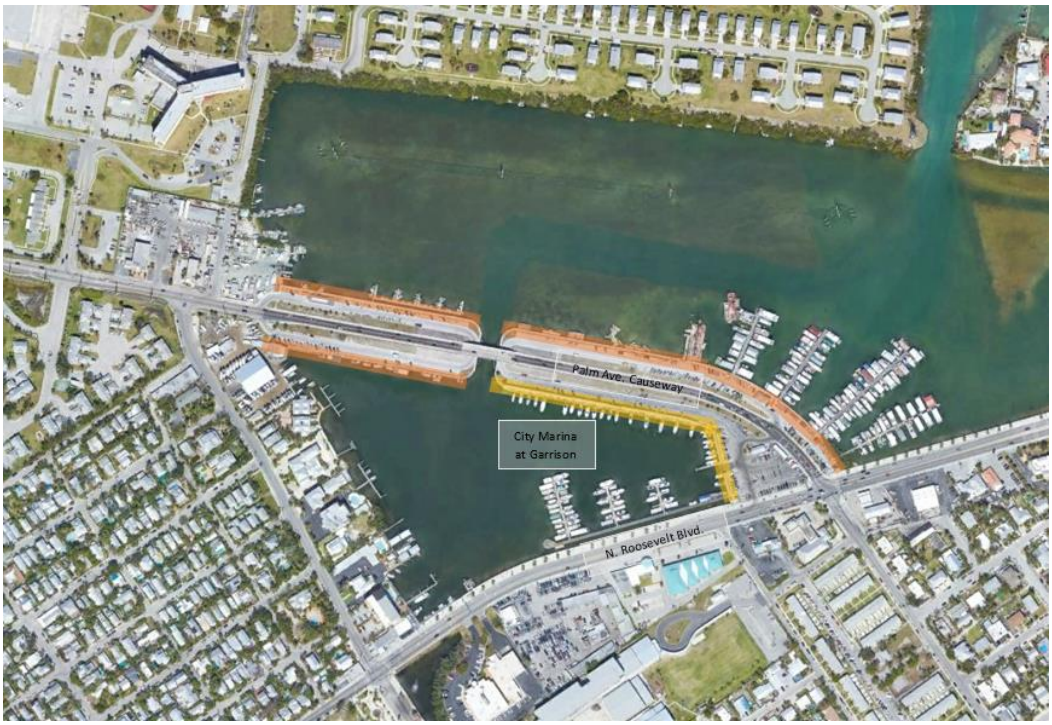
(2) Structural Diving Inspections:	**$ 28,400**

Task 3 – Engineering Assessment with Existing Conditions Drawings and Opinion of Probable Cost

Tetra Tech will provide a written engineering assessment of the wall conditions observed during the site survey, underwater structure inspection and the surface inspection. The intent of this report is to record the specific conditions of the wall segment to determine the exact locations, limits and extent of any

repairs that will be required. Tetra Tech will provide up to 2-3 conceptual repair options (if practical) with opinions of probable construction cost for each and will meet with Port & Marine Services to discuss, prior to finalizing the report.

Tetra Tech has budgeted a total of 3 days for in-water work plus travel time to and from Key West. If time and conditions permit, Tetra Tech will provide a swim-by video (without audio) of other seawalls within the vicinity, highlighted as orange in the image below. The City shall identify what, among the orange areas, is higher priority for this work if only a portion of this area may be filmed. The area beneath the bridge is omitted from this proposal for safety purposes. This video is intended to be brief, limited, and may not display all underwater views of the seawalls. No corals or defects will be mapped or stationed and no report will be furnished to accompany this video. Rather, the video is intended to give a general idea of the condition of the seawall in these areas. This video may provide insight and assist the City for future planning purposes.



Insert 2: Expanded Area (Orange) to be recorded with underwater video and provided to City.

The deliverables in this report will include:

1. Engineering Investigation/Assessment Report
   - Existing Condition of Wall
   - Wall Repair Design Options
   - Opinion of Probable Cost
   - Underwater videos of Orange-highlighted areas (if time permits)

2. Existing Conditions Report Drawings
   - Cover page with location and access
   - Existing conditions survey drawings

(4) Subtotal: $ 14,575

PROJECT EXCLUSIONS

The City shall be responsible for coordination and providing advanced notice of the inspection field work to City Marina businesses and patrons.

This proposal does not include:

- Benthic assessment or reporting
- Boundary or MHW Survey
- Modification to the Submerged Land Lease
- Permitting, or associated fees
- Coral relocation, mitigation, or associated fees
- Preparation of construction documents
- Final engineering
- Construction or Permitting level drawings
- Utility engineering
- Services During Construction

Task	Description	Amount
1	Project Survey and Geotechnical Investigation	$ 15,697
2	Structural Diving Inspection	$ 28,400
3	Engineering Assessment	$ 14,575
	TOTAL	**$ 58,672**

CITY OF KEY WEST (CLIENT 55111) CITY MARINA AT GARRISON BIGHT - ASSESSMENT			TASK 45.01 PROJECT SURVEY & GEOTECH		TASK 45.02 DIVING STRUCTURAL INSPECTION		TASK 45.03 ENGINEERING ASSESSMENT		TOTAL	
NAME	TITLE	UNIT RATE	QTY	PRICE	QTY	PRICE	QTY	PRICE	QTY	PRICE
TETRA TECH STAFF										
Canty, Lisa M. (Lisa)	Eng/Sci/Planner Staff V	$ 140.00							-	
Frodsham, David W (Dave)	Eng/Sci/Planner Senior Staff II	$ 175.00			8.0	$1,400	33.0	$5,775	41.0	$7,175
Boberg, Lori	Project Support Services I	$ 65.00	6.0	$390					6.0	$390
Martinez Rivera, Francisco J (F	Eng/Sci/Planner Staff II	$ 110.00			48.0	$5,280	80.0	$8,800	128.0	$14,080
Mc Donald, Ana P (Ana)	Project Support Services Manager	$ 172.00							-	
McGahee, Stuart E (Stuart)	Senior Principal	$ 245.00							-	
Mendoza, Michael (Mike)	Eng/Sci/Planner Staff II	$ 110.00			48.0	$5,280			48.0	$5,280
Polski, Dennis V (Dennis)	Eng/Sci/Planner Staff II	$ 110.00							-	
Warren, Caprice M. (Caprice)	Project Support Services III	$ 124.00	8.0	$992					8.0	$992
Zuloaga, Patrick (Patrick)	Eng/Sci/Planner Senior Staff IV	$ 195.00			40.0	$7,800			40.0	$7,800
TOTAL LABOR COST			**14.0**	**$1,382**	**144.0**	**$19,760**	**113.0**	**$14,575**	**271.0**	**$35,717**
INTERNAL SUBCONTRACTOR										
									-	
TOTAL INTERNAL SUBCONTRACTOR										
EXTERNAL SUBCONTRACTOR										
FKLS		$ 7,365.00	1.0	$7,365					1.0	$7,365
Nutting Engineers		$ 6,950.00	1.0	$6,950					1.0	$6,950
									-	
TOTAL EXTERNAL SUBCONTRACTOR				**$14,315**						**$14,315**
TRAVEL										
R/T Airfare		$ 500.00							-	
Mileage		$ 0.575			532.0	$306			532.0	$306
Rental Car w/Fuel		$ 80.00			12.0	$960			12.0	$960
Misc. Travel Costs (gas, parking, tolls)		$ 50.00			22.0	$1,100			22.0	$1,100
Lodging		$ 300.00			16.0	$4,800			16.0	$4,800
Per Diem		$ 67.00			22.0	$1,474			22.0	$1,474
TOTAL TRAVEL COSTS						**$8,640**				**$8,640**
OTHER DIRECT COSTS / RENTAL EQUIPMENT/LABORATORY										
Shipping		$ 10.00							-	
Reproduction - B&W		$ 0.08							-	
Reproduction - Color		$ 0.42							-	
Misc. Equip & Supplies		$ 100.00							-	
Laboratory Costs									-	
TOTAL OTHER DIRECT COSTS										
TETRA TECH OWNED EQUIPMENT										
Boat									-	
TOTAL TT EQUIPMENT										
GRAND TOTAL				**$15,697**		**$28,400**		**$14,575**		**$58,672**