

**CITY OF MARATHON, FLORIDA
RESOLUTION 2021-12**

A RESOLUTION OF THE CITY OF MARATHON, FLORIDA, APPROVING A SUPPLEMENTAL AGREEMENT TO THE APPROVED AGREEMENT BETWEEN THE CITY OF MARATHON, FLORIDA AND WOODS HOLE GROUP INITIATED FOR REVIEW AND APPEAL OF THE LATEST PROPOSED UPDATE TO THE FEMA NFIP RATE MAPS; SAID MAPS NOW AVAILABLE FOR PUBLIC COMMENT; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City approved an Agreement with Woods Hole Group to review the current proposed FEMA National Flood Insurance Program Rate Maps; and

WHEREAS, based on the review provided by Woods Hole Group at the City Council meeting held July 14, 2020, the City Council directed staff to work with Woods Hole Group to craft an appeal of the maps when they became officially available for public review and comment; and

WHEREAS, the maps are now available for public review as noticed in the Federal Register; and

WHEREAS, Woods Hole Group has provided staff with a proposed Supplemental Agreement which will assist in the additional review required and in the ultimate appeal of the latest updated FEMA NFIP Rate Maps; and

WHEREAS, staff indicates that it is the best interest of the City to approve the Supplemental Agreement in the interest of bettering its appeal of the maps,

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF MARATHON, FLORIDA, THAT:

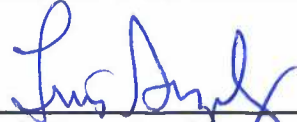
Section 1. The above recitals are true and correct and incorporated herein.

Section 2. The attached Supplemental Agreement provided as Attachment "A" is hereby approved and may be executed by the City Manager.

Section 3. Effective Date. This Resolution shall become effective immediately upon the signature by both parties.

PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF MARATHON, FLORIDA, THIS 9TH DAY OF FEBRUARY, 2021.

THE CITY OF MARATHON, FLORIDA



Luis Gonzalez, Mayor

AYES: Bartus, Zieg, Cook, Senmartin, Gonzalez
NOES: None
ABSENT: None
ABSTAIN: None

ATTEST:



Diane Clavier, City Clerk

(City Seal)

APPROVED AS TO FORM AND LEGALITY FOR THE USE AND RELIANCE OF THE CITY OF MARATHON, FLORIDA ONLY:



Steve Williams, City Attorney

ATTACHMENT "A"
SUPPLEMENTAL AGREEMENT
WOODS HOLE GROUP

December 16, 2020

Job No. 2019-0199

George Garrett
City Manager
City of Marathon
9805 Overseas Highway
Marathon, FL 33050

Sent Via Email: garrettg@ci.marathon.fl.us

Re: Supplemental FEMA Review and Support – City of Marathon, FL

Mr. Garrett,

The Woods Hole Group is pleased to provide you with the following supplemental proposal for technical review and appeal services related to the new Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) being developed for Monroe County and the City of Marathon.

As you are aware, Woods Hole Group is currently supporting the City of Key West, Monroe County and the Village of Islamorada in reviewing the coastal storm surge and wave height analyses conducted by FEMA as part of the Risk MAP development process.

In conducting our review and evaluating the statistical analysis of water levels, we have found that our restudy of FEMA's analysis would benefit from having a hindcast of 2017 Hurricane Irma to further validate the storm surge model.

Using Irma as a validation storm would provide the following benefits to the study:

- Provide more data comparisons in the Keys to evaluate the model skill and uncertainty that is applied in the analysis.
- Provide more high-water mark (HWM) measurements in the Keys to better evaluate measurement error
- Exclude Hurricane Andrew as a validation storm for which there were no measurement comparisons in the Keys

This will give more credence to our study as being an improvement to FEMA's analysis and a more accurate assessment of flood risk for the Keys. Additionally, if we can reduce the model uncertainty there will be lower 1% water levels.

A hindcast of Irma was recently completed as part of our work for the County, however, it used different wind input data and resulted in an overprediction of surge along the Keys. Therefore, we recommend conducting a hindcast of Irma using "best winds" data.



In addition, Woods Hole Group recently submitted an appeal for the City of Sanibel, FL. In response to our appeal submittal, FEMA requested that in addition to the 100-year overland wave models, we also provide updated 500-year overland wave models that include any revisions made to the 100-year overland wave models. This was not initially anticipated as results from the 500-year overland wave modeling are not reflected on the regulatory FIRMs that are subject to an appeal. However, FEMA is now requiring based on the 2019 *Guidance for Flood Risk Analysis and Mapping: Appeal and Comment Processing*. To satisfy this latest requirement to include the 500-year wave models to make an appeal submittal complete, we are recommending conducting this additional work.

The following supplemental tasks are proposed to conduct a hindcast of Irma using “best winds” data, to update the statistical water levels incorporating Irma HWM comparisons and a recomputed measurement error, and to produce an updated 500-year overland wave analysis as required by FEMA as part of an appeal.

If additional aspects of the study are identified that require further analysis, Woods Hole Group will notify the City of Marathon and provide an additional Scope and Fee for approval to address, as necessary.

Task 1: Hindcast of Hurricane Irma and Update Statistical Water Levels

Task 1.1 – Acquisition of Irma Wind and Pressure Fields

Woods Hole Group will acquire Irma wind and pressure fields from Oceanweather (OWI) for the time period of September 3rd 00 UTC to September 14th 00 UTC, 2017. Use of OWI wind and pressure fields is consistent with FEMA’s approach for the other validation storms

Task 1.2 – Model Simulation of Hurricane Irma

Hurricane Irma will be simulated using the updated ADCIRC+SWAN model. Model output of maximum surge will be reviewed to verify the model results. Comparisons will then be made with the HWM data available for Irma within Monroe County. An updated model skill term will then be calculated incorporating the Irma results and excluding Andrew. HWM measurement error will also be quantified with the additional Irma measurements.

Task 1.3 – Update of Statistical Water Levels

Using the updated model skill term and measurement error, the statistical water levels will be reanalyzed within the Keys. FEMA’s SURGE_STAT program will be rerun using our updated storm results so that the 1% water level can be determined. Maps showing the 1% water level and differences between FEMA’s 1% water level will be produced.

Task 2: Update 500-year Overland Wave Analysis

Once the statistical water levels are updated based on our reanalysis, this task will include updating FEMA’s 500-year CHAMP database and overland wave (WHAFIS) modeling to satisfy the requirement for providing a complete overland wave model update as part of an appeal package.



Deliverables and Proposed Schedule.

Deliverable	Delivery Date
Task 1 - Irma Model Simulation output and updated 1% water level	3 weeks from given Notice to Proceed
Task 2 – Update 500-year overland wave models	2 weeks from completion of 100-year overland wave models

Due to the nature of this work, there can be unforeseen delays related to computer model instabilities and computer downtime.

Woods Hole Group will give ample notification (minimum of 14 days) if there are any expected delays in planned delivery of work products. A new delivery date will be proposed and approved by the City.

All work products and digital model files developed for the City of Marathon will be delivered to the City and become the property of the City. Any future use of the delivered work products and data will require approval from the City. If there is an appeal submission to FEMA, files included with the Appeal Package will be in the public domain.

The following Table provides fixed fee (Not To Exceed) costs for Tasks 1 and 2 described above.

Woods Hole Group Fee Proposal.

Task	Cost
Task 1.1: Acquisition of Irma Wind and Pressure Fields	\$4,000
Task 1.2: Model Simulation of Hurricane Irma	\$5,000
Task 1.3: Update of Statistical Water Levels	\$3,500
Task 2: Update 500-year Overland Wave Analysis	\$12,000
Total:	\$24,500

We have been in contact with our other clients in the Florida Keys (Monroe County, City of Key West, and Village of Islamorada) about dividing the costs for the additional work based on the number of FEMA modeling transects in each area. The following table provides a breakdown of the number of transects and resulting costs for each party. Based on our discussions to date, all parties have agreed to fund their share of the additional work.

City/County	# of Transects	Percentage	Cost
Unincorporated Monroe	189	62%	\$15,190
City of Key West	32	11%	\$2,695
City of Marathon	37	12%	\$2,940
Village of Islamorada	46	15%	\$3,675



We appreciate the opportunity to work with the City of Marathon on this study. If you have any questions or require additional information, please let me know. I can be reached directly at (508)-495-6259 or mshultz@woodsholegroup.com.

Sincerely,

A handwritten signature in black ink that reads "Matt Shultz".

Matt Shultz, PE
Senior Coastal Engineer

A handwritten signature in black ink that reads "Leslie Fields".

Leslie Fields
Senior Coastal Geologist, CFM



December 16, 2020

Job No. 2019-0199

Re: Supplemental FEMA Review and Support – City of Marathon, FL

Signing the bottom of this letter proposal and returning it to the Woods Hole Group office will constitute a Notice to Proceed with **Tasks 1 & 2** detailed above for this project to be completed on a fixed fee basis.

Time of Performance: Work shall begin upon receipt of this signed Agreement and be completed in accordance with the specified schedule, unless an extension in time is agreed to in writing by both the City and Woods Hole Group. Woods Hole Group will give ample notification (minimum of 14 days) if there are any expected delays in planned delivery of work products.

Payment: Invoices for services rendered will be submitted monthly. Unless otherwise agreed to in writing, payment is due within 30 days following the date of our invoice. In case of refusal to address payment issues, Woods Hole Group retains the right to use all appropriate legal measures to obtain rightful payment. In the event of payments that are significantly or routinely late, Woods Hole Group retains the right to stop work until payment issues are redressed.

Termination or Suspension of Agreement for Cause: If the City of Marathon or the Woods Hole Group shall fail to fulfill or perform its duties and obligations under this Agreement, or if any party shall violate or breach any of the provisions of this Agreement, any party shall thereupon have the right to terminate or suspend this Agreement, by giving written notices to the other parties of such termination or suspension and specifying the effective date thereof. Such notice shall be given at least five (5) calendar days before such effective date. In the event of such termination or suspension of the Agreement, the Woods Hole Group shall be entitled to just and equitable compensation for satisfactory work completed in the performance of this Agreement up to and including the date of termination or suspension.

Modification of the Agreement: The City of Marathon and the Woods Hole Group may mutually agree in writing to a modification (including definition of scope, time of completion and budget for additional tasks as/if required) of the agreement at any time during the duration of this contract.

This document contains confidential information that is proprietary to the Woods Hole Group, Inc. Neither the entire document nor any of the information contained therein should be disclosed or reproduced in whole or in part, beyond the intended purpose of this submission without the express written consent of the Woods Hole Group.

Client

George Bassett
Name Date
2/9/2021

Representative of the Woods Hole Group, Inc.

R.P. Yonkoff Feb 25, 2021
Name Date