TASK ORDER

TASK ORDER: _1778-01_   CONSULTANT: W.F. Baird & Associates Ltd Incorporated

ACCOUNT: _3904-601-Z010-3401_   CONTRACT: R2019-1778
[Fiscal approval of Budget Availability: __see attached BAS__]

PROJECT MANAGER: __Jeremy McBryan__   PHONE: _561-355-4600_

CONTRACT MANAGER: _Juan Cueto_   PHONE: _561-233-2431_

PROJECT NAME: Review and Evaluation of FEMA's Coastal Flood Risk Study

LOCATION/DISTRICT #: Districts 1, 2, 3, 4, 5 and 7

TASK DESCRIPTION (use additional pages if necessary): The Consultant shall provide professional engineering services to review and evaluate the methods used by the Federal Emergency Management Agency (FEMA) and its contractors for the preparation of coastal flood hazard maps within unincorporated Palm Beach County, as described in the attached Baird proposal dated January 8, 2020.

DELIVERABLES: See attached scope of work dated January 8, 2020.

TASK ORDER TYPE: FIXED PRICE   DUE DATE: 4/24/2020

TOTAL AMOUNT $98,404.00

(Check where appropriate)
for Contract and Subcontract Amounts:

	Black	Hispanic	Women	Other (specify)	White Male
M/WBE(State) ☐	$_____	$_____	$_____	$_____	
SBE-M/WBE* ☐	$_____	$_____	$_____	$_____	
SBE ☐	$_____	$_____	$_____	$_____	$_____

*certified as both an SBE and a State MBE

TOTAL SBE-M/WBE PARTICIPATION: $0.00

CONSULTANT REP: _____ DATE: 1/9/2020
Gordon Thomson, Vice President

ERM DIRECTOR: _____ DATE: 1-72-2020
Deborah Drum

CONTRACT REVIEW COMMITTEE: _____ DATE: 1/15/2020

(vertical text over signatures: APPROVED BY THE CONTRACT REVIEW COMMITTEE)

c: Holly Knight, P.E.
Roadway Production

OEBO SCHEDULE 1

LIST OF PROPOSED CONTRACTOR/CONSULTANT AND SUBCONTRACTOR/SUBCONSULTANT PARTICIPATION

SOLICITATION/PROJECT/BID NAME: FEMA's Coastal Flood Risk Study

SOLICITATION/PROJECT/BID No.: Task Order No. 1778-01

NAME OF PRIME RESPONDENT/BIDDER: W.F. Baird & Associates Ltd Inc.

ADDRESS: 5014 NW 24th Circle, Boca Raton, FL 33431

CONTACT PERSON: David Swigler, P.E.

PHONE NO.: 772-285-8282   **E-MAIL:** dswigler@baird.com

DEPARTMENT: Environmental Resources Management

SOLICITATION OPENING/SUBMITTAL DATE:

PLEASE LIST THE DOLLAR AMOUNT OR PERCENTAGE OF WORK TO BE COMPLETED THE PRIME CONTRACTOR/CONSULTANT ON THIS PROJECT. PLEASE ALSO LIST THE DOLLAR AMOUNT OR PERCENTAGE OF WORK TO BE COMPLETED BY ALL SUBCONTRACTORS/SUBCONSULTANTS ON THE PROJECT.

Name, Address and Phone Number	(Check all Applicable Categories)		SBE	M/WBE		DOLLAR AMOUNT OR PERCENTAGE OF WORK				
	Non-SBE	M/WBE Minority/Women Business	Small Business			Black	Hispanic	Women	Caucasian	Other (Please Specify)
1. W.F. Baird & Associates Ltd Incorporated	✔	✔	☐	☐					86664	
2. Moffat & Nichol	☐	☐	☐	☐					11740	
3.	☐	☐	☐	☐						
4.	☐	☐	☐	☐						
5.	☐	☐	☐	☐						
				Total					98404.	

(Please use additional sheets if necessary)

Total Bid Price $ 98,404.00

Total SBE - M/WBE Participation $0.00

Note:
1. The amount listed on this form for a Subcontractor/subconsultant must be supported by price or percentage listed on the properly executed Schedule 2 or attached signed proposal.
2. Firms may be certified by Palm Beach County as an SBE and/or and M/WBE. If firms are certified as both an SBE and/or M/WBE, please indicate the dollar amount under the appropriate category.
3. Modification of this form is not permitted and will be rejected upon submittal.

REVISED 12/31/2018

OEBO LETTER OF INTENT – SCHEDULE 2

A completed Schedule 2 is a binding document between the Prime Contractor/consultant and a Subcontractor/subconsultant (for any tier) and should be treated as such. The Schedule 2 shall contain bolded language indicating that by signing the Schedule 2, both parties recognize this Schedule as a binding document. All subcontractors/subconsultants, including any tiered subcontractors/subconsultants, must properly execute this document. Each properly executed Schedule 2 must be submitted with the bid/proposal.

SOLICITATION/PROJECT NUMBER: Task Order No. 1778-01

SOLICITATION/PROJECT NAME: Review and Eval. of FEMA's Coastal Flood Risk Study

Name of Prime: W.F. Baird & Associates Ltd Incorporated

(Check box(es) that apply)
☐SBE ☐WBE ☐MBE ☐M/WBE ☑Non-S/M/WBE   Date of Palm Beach County Certification (if applicable):_____

The undersigned affirms they are the following (select one from each column):

Column 1   **Column 2**

☑Male ☐Female   ☐African-American/Black ☐Asian American   ☑Caucasian American
                                   ☐Hispanic American   ☐Native American

S/M/WBE PARTICIPATION – S/M/WBE Primes must document all work to be performed by their own work force on this form. Failure to submit a properly executed Schedule 2 for any **S/M/WBE** participation may result in that participation not being counted. Specify in detail, the scope of work to be performed or items supplied with the dollar amount and/or percentage for each work item. S/M/WBE credit will only be given for the areas in which the S/M/WBE is certified. A detailed proposal may be attached to a properly executed Schedule 2.

Line Item	Item Description	Unit Price	Qty./Units	Contingencies/ Allowances	Total Price/Percentage
	Professional engineering services				$98,404.00

The undersigned Subcontractor/subconsultant is prepared to self-perform the above-described work in conjunction with the aforementioned project at the following total price or percentage: $98,404.00

If the undersigned intends to subcontract any portion of this work to another Subcontractor/subconsultant, please list the business name and the amount below accompanied by a separate properly executed Schedule 2.

Moffat & Nichol   Price or Percentage: $11,740.00
Name of 2ⁿᵈ/3ʳᵈ tier Subcontractor/subconsultant

W.F. Baird & Associates Ltd Inc.   _____
Print name of Prime   Print name of Subcontractor/subconsultant

By: _G. Thomson_____   By: _____
Authorized Signature   Authorized Signature

Gordon Thomson   _____
Print name   Print name

Vice President   _____
Title   Title

Date: 1/10/20   Date: _____

Revised 12/31/2018

OEBO LETTER OF INTENT – SCHEDULE 2

A completed Schedule 2 is a binding document between the Prime Contractor/consultant and a Subcontractor/subconsultant (for any tier) and should be treated as such. The Schedule 2 shall contain bolded language indicating that by signing the Schedule 2, both parties recognize this Schedule as a binding document. All subcontractors/subconsultants, including any tiered subcontractors/subconsultants, must properly execute this document. Each properly executed Schedule 2 must be submitted with the bid/proposal.

SOLICITATION/PROJECT NUMBER: Task Order No. 1778-01

SOLICITATION/PROJECT NAME: Review and Eval. of FEMA's Coastal Flood Risk Study

Name of Prime: W.F. Baird & Associates Ltd Incorporated

(Check box(s) that apply)
☐SBE ☐WBE ☐MBE ☐M/WBE ☑Non-S/M/WBE   Date of Palm Beach County Certification (if applicable): _____.

The undersigned affirms they are the following (select one from each column):

Column 1	Column 2

☑Male ☐Female

☐African-American/Black ☐Asian American ☑Caucasian American
☐Hispanic American ☐Native American

S/M/WBE PARTICIPATION – S/M/WBE Primes must document all work to be performed by their own work force on this form. Failure to submit a properly executed Schedule 2 for any S/M/WBE participation may result in that participation not being counted. Specify in detail, the scope of work to be performed or items supplied with the dollar amount and/or percentage for each work item. S/M/WBE credit will only be given for the areas in which the S/M/WBE is certified. A detailed proposal may be attached to a properly executed Schedule 2.

Line Item	Item Description	Unit Price	Qty./Units	Contingencies/ Allowances	Total Price/Percentage
	Professional engineering services				$11,740.00

The undersigned Subcontractor/subconsultant is prepared to self-perform the above-described work in conjunction with the aforementioned project at the following total price or percentage: $11,740.00

If the undersigned intends to subcontract any portion of this work to another Subcontractor/subconsultant, please list the business name and the amount below accompanied by a separate properly executed Schedule 2.

_____
Name of 2ⁿᵈ/3ʳᵈ tier Subcontractor/subconsultant

Price or Percentage: _____

W.F. Baird & Associates Ltd Inc.
Print name of Prime

By: _G. Thomson_____
Authorized Signature

Gordon Thomson
Print name

Vice President
Title

Date: 1/10/20

Moffat & Nichol
Print name of Subcontractor/subconsultant

By: _J.R. Blankenship_____
Authorized Signature

J. K. BLANKENSHIP
Print name

BUSINESS UNIT LEADER
Title

Date: 1/10/2020

Baird.

W.F. Baird & Associates Ltd.

Office | 5014 NW 24th Circle, Boca Raton, FL 33431, USA
Phone | +1 561 400 7820 Email | gulfstates@baird.com

Mr. Jeremy McBryan
Water Resources Manager | Palm Beach County
301 North Olive Avenue, 11th Floor
Palm Beach, FL 33401

via email to jmcbryan@pbcgov.org

Status: Final
January 8 2020

Dear Jeremy,

Reference # P13134.200 (PBC Task Order #1778-01)
RE: REVIEW AND EVALUATION OF FEMA'S COASTAL FLOOD RISK STUDY

W.F. Baird & Associates Ltd.'s (CONSULTANT) following scope includes the review and evaluation of data and methods used by FEMA and its contractor(s) for the preparation of coastal flood hazard maps within unincorporated Palm Beach County (County). In addition, the impacts of not using the County's 2016 topographic data will be assessed and recommendations on future FEMA coordination will be developed.

Introduction and Background

In Fiscal Year 2013, the Federal Emergency Management Agency (FEMA) initiated the Coastal Flood Risk Study Project for the South Florida Study Area (Coastal Study). The results of the Coastal Study will be incorporated into updated digital Flood Insurance Rate Maps (FIRMs) and Flood Insurance Study (FIS) reports for Broward, Miami-Dade, Monroe and Palm Beach Counties. BakerAECOM, a FEMA contractor, is implementing the Coastal Study.

FEMA has stated that the Coastal Study is needed due to the previous flood risk study being based on outdated modeling and data; for example, the previous surge analysis is 30 to 40+ years old. FEMA has also stated that the Coastal Study is intended to better define flood risk within South Florida by utilizing updated ground elevation or topographic data, new climatological data, improved computing resources, updated coastal hazard methodologies and modeling, and improvements in geographic information system (GIS) technologies to improve coastal mapping accuracy.

Coastal Study outreach meetings with County floodplain administrators and permitting officials began with a Discovery Meeting in June 2014. Technical Update Meetings were held in May 2016 and May 2017. Then, a Storm Surge Analysis Update Meeting was held in April 2018. In August 2019, FEMA representatives held a Flood Risk Review Meeting with stakeholders in the County to provide a brief overview of FEMA's coastal flood mapping methodology and provide the draft work maps for review. The preliminary FIRMs are expected to be issued by December 2019 and a briefing for local officials and public open houses for residents are being planned for February 4-5, 2020.

The topographic dataset used by FEMA for the County's barrier islands was reported to be 2016 U.S. Army Corps of Engineers topography/bathymetry Light Detection and Ranging Data (LIDAR). The topographic dataset used for the County's inland areas was reported to be 2007 Florida Division of Emergency Management (FDEM) LIDAR data. FEMA stated that updated LIDAR data, acquired in 2016 and delivered to the County in November 2018, was not able to be used as overland modeling for the Coastal Study had already started. Detailed information, documents and presentations related to the Coastal Study are available at: http://www.southeastcoastalmaps.com/Pages/Projects/South-Florida.aspx?_sm_au_=iVVrr1tZNT7MZvqH

This focus of this project is on approximately 57 of the 80 panels associated with the Coastal Study which include unincorporated County lands.

Objectives

The objectives of this work effort are to review and evaluate the data and methods used by FEMA and its contractor(s) for the preparation of coastal flood hazard maps within the County, identify technical issues or concerns with flood modeling and mapping methodologies and provide recommendations regarding future coordination with FEMA.

The specific objectives of this study are as follows:
- Review and evaluate Coastal Study data and documents
- Summarize key information and methods used to prepare coastal flood hazard maps
- Determine potential impacts of FEMA not using the 2016 County topographic data
- Evaluate the application of methodologies used by FEMA and identify technical issues or concerns (if any)
- Provide recommendations regarding future coordination with FEMA
- Provide recommendations on submitting comments to FEMA on preliminary FIRMs and FIS Reports
- Provide recommendations to the County on a potential appeal process (if any)

Scope of Work

All submittals shall consist of one (1) electronic copy and one (1) bound hard copy. All technical references used in completing the work shall be documented by the CONSULTANT. Depending on the deliverable, the CONSULTANT shall provide in Microsoft (MS) Word, MS Excel, MS Access, AutoCAD, ArcGIS, or metadata format compatible with County software versions. The CONSULTANT shall provide reports in a completed format with all tables and figures included in the file of the report. Appendices can be provided as a separate file but all figures and tables within that appendix must be included in that same file. Additionally, the CONSULTANT shall provide full reports and figures as Adobe PDF files.

The CONSULTANT shall provide the project management and coordination for the activities performed under this scope of services. The CONSULTANT shall monitor labor utilization, project schedule, and project budget on a regular basis. It shall be the ongoing responsibility of the CONSULTANT Project Manager (CONSULTANT PM) to manage task budgets and schedules to meet milestones and deliverable due dates. The CONSULTANT PM shall be fully responsible for the performance of the CONSULTANT's team, including sub-consultants, for this Scope of Services. The CONSULTANT PM shall communicate with the County PM on a weekly or other agreed upon schedule and summarize key decisions in deliverables, as relevant.

Task 1 – Project Management and Work Plan Development

Within one (1) week of the Notice to Proceed, the CONSULTANT shall attend and facilitate a half-day informal kick-off meeting at County offices in West Palm Beach, Florida. The objective is to confirm project objectives,

review the scope of work and schedule, establish lines of communications for data sharing, review available data and information, and clarify project requirements. The CONSULTANT shall not be required to provide a formal presentation at the Kick-Off meeting.

The CONSULTANT shall develop a Work Plan outlining key project delivery milestones, coordination objectives, proposed strategies and approaches, and key issues, constraints, requirements, etc. The County will review the Draft Work Plan and provide comments to the CONSULTANT. The CONSULTANT shall address County comments and submit a Final Work Plan.

Task 1 Deliverables:
- 1.1: CONSULTANT shall attend and facilitate a Kick-Off Meeting with County staff and prepare and submit a **Kick-Off Meeting Summary**.
- 1.2: CONSULTANT shall prepare and submit a **Draft Work Plan**.
- 1.3: CONSULTANT shall prepare and submit a **Final Work Plan** incorporating input and comments on the Draft Work Plan provided by the County.

Task 2 – Topographic Elevation Data Evaluation

The CONSULTANT shall review the topographic data used by FEMA to prepare the preliminary FIRMs and FIS Reports, review the 2016 County LIDAR-derived topographic data. GIS spatial analysis tools will be utilized to provide representative technical comparison of the topographic data, including summarizing observed differences between the topographic data used by FEMA and the 2016 County topographic data. Overlays in GIS will be reviewed for comparison of elevation data.

The CONSULTANT shall also review, summarize and assess to the practical extent possible the appropriateness of the methodologies used by FEMA to combine or "stitch together" topographic data from the multiple sources and collection dates into a seamless digital elevation model (DEM).

Task 2 Deliverables:
- 2.1: CONSULTANT shall prepare and submit a **Topographic Elevation Data Technical Memorandum** that summarizes and assesses the appropriateness of FEMA's methods in generating and utilizing topographic elevation datasets to generate the preliminary FIRMs and FIS Reports.

Task 3 – FEMA and Stakeholder Coordination

A key objective of this study is to coordinate with FEMA and their contractors to understand the approaches, procedures, assumptions, and tools utilized to develop the coastal flood hazard maps. The CONSULTANT shall coordinate with FEMA and its coastal flood risk study contractors, as needed.

In addition, the CONSULTANT shall coordinate with stakeholders and local governments within the County (and their consultants) to understand compatible work efforts that are underway by others and to develop complementary strategies, if appropriate and feasible. This effort will be limited by the available lump sum budget as execution of the work progresses in order to allocate budgetary resources to other portions of the work.

The CONSULTANT shall attend the Community Consultation Officer (CCO) Meeting and Open House (OH) scheduled for February 4-5, 2020.

The CONSULTANT shall summarize and/or document relevant communications with and information obtained from FEMA and its contractors, County staff, stakeholders, and local governments within the County (and their

consultants), as appropriate, and prepare and submit a FEMA and Stakeholder Coordination Technical Memorandum.

Task 3 Deliverables:

- 3.1: CONSULTANT shall coordinate with FEMA and their contractors, local governments and other stakeholders and attend up to 5 formal meetings (including the Community Consultant Officer Meeting and Open House) with FEMA and County stakeholders and prepare and submit a **FEMA and Stakeholder Coordination Technical Memorandum**. Each meeting is estimated at two (2) hours.

Task 4 – Review and Summarize Coastal Study Documents and Data

The CONSULTANT shall review relevant reports, documents, data, maps and/or supporting Risk Mapping, Assessment and Planning (Risk MAP) products related to the Coastal Study, specifically as it relates to unincorporated County areas. Some of the relevant files to be reviewed are available at the following website:

http://www.southeastcoastalmaps.com/Pages/Projects/South-Florida.aspx?_sm_au_=iVVrr1tZNT7MZvqH

This task also includes the review of preliminary FIRMs and FIS Reports for unincorporated County that are relevant to the Coastal Flood Risk Study, which expected to be available for public review starting in December 2019.

The CONSULTANT shall prepare a Data and Documents Review Technical Memorandum that summarizes the key information obtained from the review of all relevant Coastal Flood Risk Study documents and data.

Task 4 Deliverables:

- 4.1: CONSULTANT shall prepare and submit a **Data and Documents Review Technical Memorandum**.

Task 5 – Storm Surge, Wave Model and Flood Map Evaluation

The CONSULTANT shall review and evaluate to the practical extent possible the appropriateness of the methodologies and assumptions utilized by FEMA and its contractor to conduct storm surge, wave and erosion modeling to generate the preliminary FIRMs and FIS Reports. This may include the following at select locations:

- The SWAN+ADCIRC and WHAFIS modeling to understand key factors and parameterization techniques and to identify technical issues or concerns, if any.
- Erosion and attenuation factors such as vegetation, buildings, open and inland fetch, and Primary Frontal Dune (PFD) designations, where appropriate.
- The intersections of flood zones to verify consistency between model results and preliminary flood maps.
- The proposed FIRMs for consistency with FEMA mapping standards.

This task does not attempt to replicate FEMA's analysis, but rather is intended to evaluate select locations, technical inputs, analyses, model results, and maps in order to provide recommendations, if issues or concerns are identified. Modeling, replication of model simulations, or sensitivity analysis of model parameters/inputs is not included herein.

Task 5 Deliverables:

- 5.1: CONSULTANT shall prepare and submit a **Storm Surge, Wave Model and Flood Map Evaluation Technical Memorandum** summarizing key factors, appropriateness, reasonableness and technical issues or concerns, if any, with FEMA's modeling and flood maps.

Task 6 – Final Summary

The CONSULTANT shall provide a Final Summary Technical Memorandum documenting the key findings and conclusions of Tasks 1-5. The memorandum will provide potential forward paths and recommendations regarding future coordination with FEMA, which may include providing comments to FEMA on the preliminary FIRMs and FIS Reports and proceeding with an appeal process, if appropriate and desired by the County.

Task 6 Deliverables:

- 6.1: CONSULTANT shall prepare and submit a **Final Summary Technical Memorandum** that summarizes the key findings of Tasks 1-5 and provides potential forward paths and recommendations for future coordination with FEMA and local governments and other stakeholders.

Project Schedule

FEMA's 90-day public review/appeal period starts following FEMA's Community Consultation Officer (CCO) Meeting and Open House (OH), which is scheduled for February 4-5, 2020. The CONSULTANT plans to complete the above scope of work within 75 days of the start date of the public review period, which is unknown at this time. This will allow approximately two weeks for the County to plan/coordinate prior to the end of FEMA's public review period.

A notice to proceed (NTP) date of February 3, 2020 was assumed for the project schedule outlined below (Table 1). The NTP date assumes that FEMA's public review period starts on the date of the CCO Meeting. Issuance of an NTP prior to this date will not affect the overall completion of the work. Issuance after this date may delay the overall completion of the work and result in the CONSULTANT not being present at FEMA's CCO Meeting.

The project schedule is for planning purposes. The execution of the scope of work outlined above may be affected by the start date of FEMA's public review period and receiving study related documents and information from FEMA and its contractor(s), which are beyond the CONSULTANT's control. For example, the start of the review period may affect when information is publicly released and timing of FEMA and stakeholder coordination. This information may include, but is not limited to, DEMs, list of datums utilized, fieldwork notes, ADCIRC-SWAN storm surge stillwater elevation (SWEL) rasters and offshore extraction nodes, transect extraction point coordinates, joint probability method (JPM) scenarios, WHAFIS inputs and outputs, and runup calculations. The CONSULTANT will keep the County PM informed as to the progression of the work and will notify the County PM if it becomes aware of delays to the overall completion of the work.

Table 1: Project Schedule

Deliverables	Completion Date from Notice-to-Proceed (NTP)
1.1	7 calendar days from NTP
1.2	12 calendar days from NTP
1.3	19 calendar days from NTP
2.1	45 calendar days from NTP
3.1	75 calendar days from NTP
4.1	60 calendar days from NTP
5.1	60 calendar days from NTP
6.1	75 calendar days from NTP
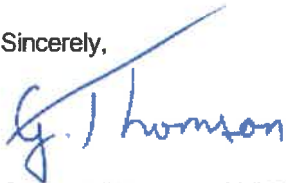
Project Budget

The CONSULTANT plans to provide the above scope of work for a lump sum cost of $98,404 ✓ USD. A breakdown of the estimated costs is detailed in Exhibit A.

Moffatt Nichol, Inc. (SUBCONSULTANT) has been identified to assist in execution of the work. The SUBCONSULTANT's contribution to the work and lump sum costs are detailed in Exhibit B. The SUBCONSULTANT's costs have been included in the CONSULTANT's lump sum costs presented herein.

We appreciate the opportunity to submit this proposal and look forward to assisting Palm Beach County on this work.

Sincerely,

Gordon Thomson | Vice President
Baird & Associates
E: gthomson@baird.com
M: 561-400-7820

CC: David Swigler, PE (Baird)

Exhibit A

Palm Beach County
Review and Evaluation of FEMA's Coastal Flood Risk Study
Exhibit A
Date: December 31, 2019

Task Description	Task Subtotal	Baird Labor (hours)										Baird Expenses	
		Principal	Senior Prof III	Senior Prof II	Senior Prof I	Staff Prof. III	Staff Prof. II	Staff Prof. I	Senior Tech.	Staff Tech.	Support	Direct	Sub-Consultant
1 Project Management & Work Plan Development	$6,654.00		2			44							$460
2 Topographic Elevation Data Evaluation	$12,722.00		2			12	20		4		3		$7,830
3 FEMA & Stakeholder Coordination	$15,916.00		10			96					3		$920
4 Review & Summarize Coastal Study Documents & Data	$22,564.00		6	8	12	28	80	40	8		3		$920
5 Storm Surge, Wave Model & Flood Map Evaluation	$33,578.00		6	10	20	28	120	80	24		3		$690
6 Final Summary	$6,970.00		4			24	16				3		$920
Subtotal (hours):		0	30	18	32	232	236	120	36	0	15		
Rate Schedule 2019:		$280	$215	$162	$140	$131	$111	$94	$100	$90	$90		
Subtotal:		$0	$6,450	$2,916	$4,480	$30,392	$26,196	$11,280	$3,600	$0	$1,350	$0	$11,740

Baird Labor:	$86,664.00
Baird Expenses:	$0.00
Subconsultants:	$11,740.00
Total:	$98,404.00

Exhibit B

Baird.

January 8, 2020

Mr. Dave Swigler
Baird & Associates
5014 NW 24th Circle
Boca Raton, FL USA 33431

Via email: dswigler@baird.com

RE: Review and Evaluation of FEMA's Coastal Flood Risk Study, Palm Beach County, Florida

Dear Mr. Swigler:

Pursuant to our recent discussion, this is to submit a scope of services for consulting services relative to the FEMA Coastal Flood Risk Study (Project) for Palm Beach County. Moffatt & Nichol (M & N) has reviewed the scope of work provided by the County and has compiled the following work tasks to support Baird & Associates as a subconsultant on this Project.

EXHIBIT "A" – SCOPE OF SERVICES

Task 1 – Project Management and Work Plan Development

Moffatt & Nichol will attend the kick-off meeting as scheduled with the County, and review comments will be provided to Baird on the draft and final Work Plan deliverables.

Task 2 – Topographic Elevation Data Evaluation

M&N shall review the topographic data used by FEMA to prepare the preliminary FIRMs and FIS Reports, review the 2016 County LIDAR-derived topographic data. GIS spatial analysis tools will be utilized to provide representative technical comparison of the topographic data, including summarizing observed differences between the topographic data used by FEMA and the 2016 County topographic data. Overlays in GIS will be reviewed for comparison of elevation data.

M&N will work with Baird to review, summarize and assess the appropriateness (to the practical extent possible) of the methodologies used by FEMA to combine or "stitch together" topographic data from the multiple sources and collection dates into a seamless digital elevation model (DEM).

Task 2 Deliverable:
M&N will work with Baird to prepare and submit a **Topographic Elevation Data Technical Memorandum** that summarizes and assesses the appropriateness of FEMA's methods in generating and utilizing topographic elevation datasets to generate the preliminary FIRMs and FIS Reports.

Task 3 – FEMA and Stakeholder Coordination

A key objective of this study is to coordinate with FEMA and their contractors to understand the approaches, procedures, assumptions, and tools utilized to develop the coastal flood hazard maps. Baird will coordinate with FEMA and its coastal flood risk study contractors, as needed.

In addition, Baird shall coordinate with stakeholders and local governments within the County (and their consultants) to understand compatible work efforts that are underway by others and to develop complementary strategies, if appropriate and feasible. M&N will attend the Community Consultation Officer (CCO) Meeting and Open House (OH) scheduled for February 4-5 2020. M&N will review the draft Coordination Technical Memorandum drafted by Baird and provide comments.

Task 4 – Review and Summarize Coastal Study Documents and Data

Baird shall review all relevant reports, documents, data, maps and/or supporting Risk Mapping, Assessment and Planning (Risk MAP) products related to the Coastal Study, specifically as it relates to unincorporated County areas. This task also includes the review of preliminary FIRMs and FIS Reports for unincorporated County that are relevant to the Coastal Flood Risk Study, which expected to be available for public review starting in December 2019, and Letters of Final Determination. Baird shall prepare a Data and Documents Review Technical Memorandum that summarizes the key information obtained from the review of all relevant Coastal Flood Risk Study documents and data. M&N will review this document and provide comments. Conference calls and/or meetings via WebEx may be required.

Task 5 – Storm Surge, Wave Model and Flood Map Evaluation

Baird shall review and evaluate the appropriateness of the methodologies and assumptions utilized by FEMA and its contractor to conduct storm surge, wave and erosion modeling to generate the preliminary FIRMs and FIS Reports. Baird shall evaluate erosion and attenuation factors such as vegetation, buildings, open fetch and inland fetch, where appropriate. Baird shall also evaluate and summarize Primary Frontal Dune (PFD) designations and methodologies applied by FEMA. M&N will provide comments on the Storm Surge, Wave Model, and Flood Map Evaluation Technical Memorandum.

Task 6 – Final Report

Baird shall provide a Final Report summarizing the key findings and conclusions of Tasks 1-5 and providing potential forward paths and recommendations regarding future coordination with FEMA, including how best to provide comments to FEMA on the preliminary FIRMs and FIS Reports and how best to proceed with an appeal process, if desired by the County. M&N will provide technical comments on this document to support Baird in the compilation of the report.

General

Professional Fees
Summarized in the attached Table 1. Fees are Lump Sum.

Contract
This scope of services is subject to the subconsultant agreement between Baird and M&N referenced to the professional services agreement between Baird and the County.

We look forward to working with you on this project for Palm Beach County. Should have any questions regarding this proposal, please do not hesitate to contact Lynette Cardoch (786) 725-4189 or lcardoch@moffatthnichol.com or me at (305) 873-3326 or tblankenship@moffattnichol.com.

Sincerely,
MOFFATT & NICHOL

T. K. Blankenship, P.E.
Business Unit Leader

TKB:tb

Enclosures

Moffatt & Nichol
Fee Proposal Worksheet

Project Number: P190262
Project Title: Palm Beach County HMA Map Review
Project Manager: Tynette Canfield
Project Principal: Tim Blankenship

Date: 12/30/19

Sub Mark-up: 0%
ODC Mark-up: 0%

I. MAN-HOUR BUDGET

Phase	Task	Title	Principal/Environmental Mngr P-9, P-8 $230.00	Supervisory Eng./Sci P-7 $205.00	Sr. Eng/Environmental P-6 $175.00	Eng III/Environmental P-5 $155.00	Eng/Environmental P-4 $125.00	Eng/Sci P-3 $100.00	Staff Eng. P-1, P-2 $95.00	Senior Tech. I-6 $145.00	Designer I-4 $100.00	CADD II I-3 $95.00	CADD I I-2, I-1 $85.00	Word Processor A-4, A-3 $65.00	General Clerical A-1, A-2 $55.00	HOURS	LABOR TOTAL
	1	Project Management and Work Plan Development	2.00													2.0	$460.00
	2	Topographic Elevation Data Evaluation					10.00	10.00			36.00	16.00				72.0	$7,830.00
	3	HMA and Stakeholder Coordination	4.00													4.0	$920.00
	4	Review and Summarize Coastal Study Documents and Data	4.00													4.0	$920.00
	5	Storm Surge, Wave Model and Flood Map Evaluation	3.00													3.0	$690.00
	6	Final Report	4.00													4.0	$920.00
																	$0.00
																	$0.00
																	$0.00
																	$0.00
																	$0.00
																	$0.00
																	$0.00
																	$0.00
																	$0.00
																	$0.00
																	$0.00
																	$0.00
																	$0.00
TOTAL MAN-HOURS			17.00	0.00	0.00	0.00	10.00	10.00	0.00	0.00	36.00	16.00	0.00	0.00	0.00	89.0	
M&N LABOR			$3,910.00	$0.00	$0.00	$0.00	$1,250.00	$1,000.00	$0.00	$0.00	$3,960.00	$1,520.00	$0.00	$0.00	$0.00		$11,740.00

III. OTHER COSTS

A. Subconsultants

	Markup	Total
1.	$0	$0
2.	$0	$0
3.	$0	$0
4.	$0	$0
5.	$0	$0
6.	$0	$0
7.	$0	$0
8.	$0	$0
9.	$0	$0
10.	$0	$0
Total Subconsultants:	$0	$0

B. Other Direct Costs

	Markup	Total
Airfare	N/A	$0
Lodging	N/A	$0
Meals	N/A	$0
Mileage/Rental Car	N/A	$0
Outside Reproduction	$0	$0
Postage/Delivery	$0	$0
Telephone/Fax	$0	$0
I&R/Diving Equipment	N/A	$0
Other	$0	$0
	$0	$0

IV. PROJECT SUMMARY

Total M&N Labor	$11,740
Total Subconsultant Cost:	$0
Total Other Direct Costs:	$0
Mark-up on Subconsultants:	$0
Mark-up on ODCs:	$0
Total Project Estimate	**$11,740**

BUDGET AVAILABILITY STATEMENT

REQUEST DATE: 01/03/2020   REQUESTED BY: Jeremy McBryan   PHONE: 561-355-4600

PROJECT TITLE: <u>Review and Evaluation of FEMA Coastal Flood Risk Study</u>
<div align="center">(Same as CIP or IST, if applicable)</div>

ORIGINAL CONTRACT AMOUNT: $ $98,404.00

REQUESTED AMOUNT: $

CSA or CHANGE ORDER NUMBER:

LOCATION:

BUILDING NUMBER:

DESCRIPTION OF WORK/SERVICE LOCATION: Districts 1, 2, 3, 4, 5, and 7

PROJECT/W.O. NUMBER: ERM Task Order 1778-01

CONSULTANT/CONTRACTOR: W.F. Baird and Associates LTD.

IST PLANNING NO.:

BCC RESOLUTION#:

DATE:

PROVIDE A BRIEF STATEMENT OF THE SCOPE OF SERVICES TO BE PROVIDED BY THE CONSULTANT/CONTRACTOR:

REVIEW OF THE PRELIMINARY COASTAL FLOOD MAPS DISTRICTS 1, 2, 3, 4, 5, AND 7

CONSTRUCTION	$	
PROFESSIONAL SERVICES	$	$98,404.00
STAFF COSTS*	$	
EQUIP. / SUPPLIES	$	
CONTINGENCY	$	
TOTAL	$	98,404.00

* By signing this BAS your department agrees to these CID staff charges and your account will be charged upon receipt of this BAS by FD&O. Unless there is a change in the scope of work, no additional staff charges will be billed. If this BAS is for construction costs of $250,000 or greater, staff charges will be billed as actual and reconciled at the end of the project. If the project requires Facilities Management or ESS staff your department will be billed actual hours worked upon project completion.

<u>**BUDGET ACCOUNT NUMBER(S)** *(Specify distribution if more than one and order in which funds are to be used)*</u>:

FUND: 3904   DEPT: 601   UNIT: Z010   OBJ: 3401

IDENTIFY FUNDING SOURCE FOR EACH ACCOUNT: (check <u>**and**</u> provide detail for <u>***all***</u> that apply)

☐ Ad Valorem (Amount $_____)   ☐ Infrastructure Sales Tax (Amount $_____)

☐ State (source/type: _____ Amount $_____)   ☐ Federal (source/type: _____ Amount $_____)

☐ Grant (source/type: _____ Amount $_____)   ☐ Impact Fees: (Amount $_____)

☑ Other (source/type: Bldg. Div. Capital Amount $ 98,404.00)

Department: Planning, Zoning & Building- Building Division

BAS APPROVED BY: _[signature]_   DATE 01/06/2020

ENCUMBRANCE NUMBER: _____

CONTRACT HISTORY
W.F. Baird & Associates Ltd Incorporated
Continuing Contract for Coastal and Marine Engineering Services

Contract R2019-1778 dated November 19, 2019 for a period of two years, expires on November 18, 2021.
SBE Goal 25.0% (20% SBE/White Male; 5% SBE/Woman)

Task Order summary:

TASK NUMBER	TOTAL/ SBE and/or MWBE AMOUNT	TASK DUE DATE	TASK DESCRIPTION	APPROVED BY/DATE
1778-01	98,404.00 0.00	4/24/2020	Review and Evaluation of FEMA's Coastal Flood Risk Study	CRC

Total: 98,404.00
SBE-M/WBE: 0.00
SBE-M/WBE Participation: 0.0%
Report Date & Filename: 01/09/20   T:\eer\engser\Consultants\Baird 2019-2021\[history_1778.xls]Sheet1