

PALM BEACH COUNTY  
BOARD OF COUNTY COMMISSIONERS  
AGENDA ITEM SUMMARY

Meeting Date: November 1, 2022       Consent       Regular  
     Workshop       Public Hearing

Department: Planning, Zoning & Building  
 Submitted By: Building Division  
 Submitted For: Building Division

I. EXECUTIVE BRIEF

**Motion and Title: Staff recommends motion to:**

A) **approve** an Agreement with Florida Atlantic University (FAU) to develop a Watershed Master Plan (WMP) in the amount not to exceed Five Hundred Thousand and 00/100 Dollars (\$500,000) for drainage basin and hydraulic analyses for Unincorporated Palm Beach County, and any additional related work pursuant to the agreement for the period November 1, 2022, to October 31, 2027. The first year will be in the amount of \$210,000 for FAU's support on the WMP. The work will not start until the Florida Department of Emergency Management (FDEM) grant agreement has been executed.

B) **authorize** the County Administrator or designee to execute the contract, amendments thereto, task orders and any other necessary documents related to the Watershed Master Plan with Florida Atlantic University.

**Summary:** Developing a WMP is a prerequisite for all communities to achieve a Class 4 or higher CRS (Community Rating System) rating and is important to understanding floodplain management and the ways in which water travels in a community. FAU staff have assisted a number of other communities in developing a WMP and is currently encouraging several municipalities to collaborate with the County in developing a WMP, potentially affecting the total scope of work required. On April 8, 2022, FDEM announced a Watershed Master Plan grant opportunity for CRS communities to aid them in the development of a WMP to help improve their CRS ratings. This opportunity was for a 75% federal match for a total reimbursement amount of \$210,000. On May 17, 2022, the Board of County Commissioner (BCC) approved the preparation and execution of a Watershed Master Plan grant application with FDEM and on September 16, 2022, the County was awarded the FDEM grant. The County is currently waiting for FDEM to provide a grant agreement for execution. Development of the County's WMP may not commence until the County has executed the FDEM grant agreement.  
Unincorporated (RM)

**Background and Policy Issue:** The CRS is a national program developed by FEMA. The CRS program is voluntary and designed to incentivize participating communities to achieve significant discounts for NFIP policyholders on flood insurance premiums for their properties. CRS ratings rank from 1 (highest rating/discount) to 10 (lowest rating/discount).

Continued on page 3

**Attachment(s):**

- 1) FAU Master Research Agreement (C-22-229)
- 2) Scope of work
- 3) FDEM/FEMA- Watershed Master Planning Award Notification – 4337-004-Pi

Recommended By:       \_\_\_\_\_  
    Department Director      Date

Approved By:       10/17/22  
    Assistant County Administrator      Date

**II. FISCAL IMPACT ANALYSIS**

**A. Five Year Summary of Fiscal Impact:**

Fiscal Years	2023	2024	2025	2026	2027
Capital Expenditures	0	0	0	0	0
Operating Costs	\$500,000	0	0	0	0
External Revenues	0	0	0	0	0
Program Income(County)	0	0	0	0	0
In-Kind Match(County)	0	0	0	0	0
NET FISCAL IMPACT	*\$500,000	0	0	0	0
#ADDITIONAL FTE POSITIONS (CUMULATIVE	0	0	0	0	0

Is Item Included In Current Budget? Yes  No

Does this item include the use of federal funds? Yes  No

Budget Account No.: Fund: 1400 Department: 600 Unit: 6115 Object: 3401

Fund: \_\_\_\_\_ Department: \_\_\_\_\_ Unit: \_\_\_\_\_ Object: \_\_\_\_\_

**B. Recommended Sources of Funds/Summary of Fiscal Impact:**

\*Funding for this project will be paid out of the Building MSTD Fund. However, up to \$210,000 shall be covered by FDEM grant approved on September 16, 2022. Subsequent agenda will be brought to the BOCC with grant agreement.

C. Departmental Fiscal Review: *A. Colman*

**III. REVIEW COMMENTS**

**A. OFMB Fiscal and/or Contract Dev. and Control Comments:**

*Luz Mante* 10/6/2022  
 MG 10/6 OFMB JA 10/10

*Dr. J. Jacob* 10/13/22  
 Contract Dev. and Control

**B. Legal Sufficiency:**

*[Signature]*  
 Assistant County Attorney

**C. Other Department Review:**

\_\_\_\_\_  
 Department Director

**Background continued from page 1**

The county has had a Class 5 rating for almost 10 years. A Class 5 rating allows policyholders in the County to receive discounts of up to 25% from the standard NFIP premiums. A Class 4 rating or higher would achieve discounts of 30% or more. Working in coordination with the County Emergency Management Division CRS Coordinator, as well as other County Agencies, County staff work continuously to maintain and improve the County's CRS rating and achieve greater discounts for County property owners. Once in the program, there are annual updates. Participating in the program allows insurable properties in the community to be eligible for reduced flood insurance premiums through the NFIP. A WMP is important to understand floodplain management and the way in which water travels. Providing this information to FEMA and to the community is essential for improving the current CRS rating. There are nearly 38,000 active NFIP policies in the County valued at more than 12 Billion dollars. Improving the CRS rating will have a substantial impact on the flood insurance premiums for County property owners.

**FLORIDA ATLANTIC UNIVERSITY  
MASTER RESEARCH AGREEMENT  
AGREEMENT # C-22-229**

This Agreement is made by and between FLORIDA ATLANTIC UNIVERSITY Board of Trustees, having its business address at 777 Glades Road, P.O. Box 3091, Boca Raton, Florida 33431-0991(hereinafter "UNIVERSITY") and Palm Beach County, a government applicant, having its business address at 2300 N. Jog Road, West Palm Beach, FL 33411 (hereinafter "SPONSOR").

**SUBJECT**

The purpose of this Agreement is to Further the research objectives of UNIVERSITY and SPONSOR. Specifically, the parties contemplate that PROJECTS (hereinafter defined) will include: 1) UNIVERSITY assisting SPONSOR to produce a Watershed Master Plan (WMP) for credit under the Community Rating System (CRS) using the Phase 1 guidance materials created by UNIVERSITY and 2) UNIVERSITY finalizing the process by receiving approval from ISO/CRS that the created WMP is sufficient to receive credits under CRS 452.b.

**IT IS AGREED:**

**Article 1.0 RESEARCH PROJECT**

- 1.1 UNIVERSITY agrees to undertake certain research (hereinafter "PROJECT") specifically described in Task Orders issued by SPONSOR to UNIVERSITY. TASK ORDERS will be incorporated in the form attached hereto as Appendix A. Each TASK ORDER will at a minimum include this information:
  - a) A unique and sequential identification number.
  - b) A Statement of Work (SOW) providing sufficient and reasonable details of the work.
  - c) Period of Performance of the identified SOW.
  - d) Deliverables and due dates for the deliverables.
  - e) Amount of financial support being provided to UNIVERSITY.
- 1.2 The PROJECT and all work assignments shall be carried out under the direction of a designated PROJECT DIRECTOR (hereinafter "PROJECT DIRECTOR") while employed by UNIVERSITY, and by others (e.g. technician, graduate student, postdoctoral fellow, or faculty member, hereinafter collectively referred to as PERSONNEL), as assigned by PROJECT DIRECTOR.
- 1.3 UNIVERSITY agrees that there shall be no change of PROJECT DIRECTOR without prior written approval of SPONSOR.

**Article 2.0 TERM**

- 2.1 The term of this Agreement extends for a period beginning on November 1, 2022, and continuing through October 31, 2027.
- 2.2 It is understood that each TASK ORDER will have its own TERM, but the period of performance must be within the TERM of the Master Agreement. The Master Agreement may be extended for additional periods of time under terms mutually agreed upon in writing in a duly executed amendment to this agreement.

**Article 3.0 FACILITIES AND EQUIPMENT**

- 3.1 UNIVERSITY agrees to furnish such available laboratory facilities and equipment as it shall determine necessary for the PROJECT, other than that specifically provided by SPONSOR under this Agreement.
- 3.2 Parties agree that all equipment and supplies purchased with funds obtained as a result of this Agreement become the property of the UNIVERSITY.

**Article 4.0 PAYMENT**

- 4.1 This Master Agreement does not authorize UNIVERSITY to perform work nor to spend any funds. The funding will be noted and authorized in each TASK ORDER and a payment schedule will be specified for each TASK ORDER. The total amount for all payments made for work performed to develop a WMP for credit under the Community Rating System (CRS) using the Phase 1 guidance materials created by UNIVERSITY shall not exceed Two Hundred and Ten Thousand Dollars and 00/100 cents (\$210,000.00). The total amount for all payments made for work performed pursuant to this Master Agreement shall not exceed Five Hundred Thousand Dollars and 00/100 cents (\$500,000.00).

The foregoing payment by SPONSOR is acknowledged to be full and complete compensation for all work and obligations assumed under this Agreement.

Checks will be made payment to: Florida Atlantic University

Mail checks to: Florida Atlantic University  
P.O. Box 198660  
Atlanta, GA 30384-8660

**Article 5.0 REPORTS**

- 5.1 The PROJECT DIRECTOR shall furnish SPONSOR with written reports and/or deliverables according to the schedule outlined in each TASK ORDER.

## **Article 6.0 PUBLICATION**

- 6.1 SPONSOR recognizes that under University policy, the PROJECT results are non-confidential and agrees that PERSONNEL engaging in the PROJECT shall be permitted to present or publish at their own choosing, methods and results of the PROJECT, provided, however, that SPONSOR shall have been furnished copies of any proposal presentation or publication thirty (30) days in advance for review for patentable items or items deemed confidential as defined in article 7.0.
- 6.2 If SPONSOR believes that any planned publication contains a patentable development and wishes UNIVERSITY to file a patent application, upon written notice to UNIVERSITY, submission of such manuscript for publication shall be delayed for a reasonable time, not to exceed sixty (60) days, to permit the filing of a patent application(s) by UNIVERSITY.
- 6.3 Nothing in this Agreement shall entitle UNIVERSITY to disclose to others or publish any information disclosed to UNIVERSITY by SPONSOR which is confidential within the meaning of article 7.0 without the prior written approval of SPONSOR.

## **Article 7.0 CONFIDENTIALITY**

- 7.1 UNIVERSITY acknowledges that SPONSOR may wish to disclose information which sponsor considers confidential, in furtherance of the PROJECT. SPONSOR acknowledges that UNIVERSITY has no mechanism to maintain or guarantee the confidentiality of information and cannot sustain liability for inadvertent or other disclosure of confidential information. These considerations notwithstanding, if any such information is disclosed by SPONSOR it shall be clearly marked "confidential information" and furnished in writing only to the PROJECT SUPERVISOR or orally disclosed to the PROJECT SUPERVISOR and reduced to writing by the SPONSOR within thirty (30) days of disclosure. Confidential information shall remain the property of the SPONSOR and for a period of three (3) years from the end of the Agreement shall not be used or disclosed to others except in furtherance of this Agreement. The foregoing obligation of non-use and non-disclosure shall not apply to:
  - a) Information which at the time of disclosure is in the public domain;
  - b) Information which after disclosure is published or otherwise becomes part of the public domain through no fault of the PROJECT SUPERVISOR;
  - c) Information which was in the possession of the PROJECT SUPERVISOR at the time of disclosure and was not acquired from SPONSOR under an obligation of confidentiality; or
  - d) Information which SPONSOR provides written permission to disclose.



**Article 8.0 PATENT AND OTHER RIGHTS AND LICENSE OPTIONS**

- 8.1 UNIVERSITY agrees to notify sponsor of any invention made by UNIVERSITY hereunder within thirty (30) days after receipt of an invention disclosure from the inventor.
- 8.2 UNIVERSITY shall retain all rights to inventions or discoveries, patentable or not, conceived solely by UNIVERSITY and shall prepare and prosecute all related patent applications. SPONSOR shall retain all rights to inventions or discoveries, patentable or not, conceived solely by SPONSOR. Inventions or discoveries, patentable or not, made jointly by SPONSOR and UNIVERSITY shall be jointly owned by SPONSOR and UNIVERSITY, and UNIVERSITY shall prepare and prosecute all related patent applications and SPONSOR shall reimburse UNIVERSITY for one-half of the expense of all filing, prosecution and maintenance costs for all such patent applications and all issued patents. UNIVERSITY grants SPONSOR an option to secure an exclusive license to UNIVERSITY'S rights to said jointly-owned inventions and discoveries. The provisions of article 8.3, 8.4, 8.5, 8.6 and 8.7 shall apply to such an option.
- 8.3 SPONSOR shall indicate to UNIVERSITY in writing, within thirty (30) days of receipt of invention disclosure, whether it wishes UNIVERSITY to file a patent application on the invention, if applicable, or whether it wishes UNIVERSITY to register a copyrightable material.
- 8.4 UNIVERSITY agrees to grant and hereby grants SPONSOR an option to secure a royalty-bearing license under reasonable terms, with the right to make, use and sell, have made and have used, the claimed invention of any patent which is based on any invention conceived and reduced to practice during the term of this Agreement. Such option shall be in effect and exercisable for ninety (90) days from the date of filing of a U.S. patent application under this Agreement or for ninety (90) days from the date of receipt of notice of such a filing by SPONSOR whichever date is earlier.
- 8.5 The license, which will be exclusive, will include a royalty rate in an amount to be negotiated in good faith by both UNIVERSITY and SPONSOR at the time SPONSOR decides to exercise its option. SPONSOR shall have the rights under the license to sublicense and shall have the sole right to designate the terms of any sublicense, provided that UNIVERSITY shall receive, at a minimum, the royalty rate expressed in the license between UNIVERSITY and SPONSOR, and fifty percent (50%) of any other remuneration received by SPONSOR from sub-licensees.
- 8.6 At the time of exercise of the option, SPONSOR shall indicate in which foreign countries it wants a patent application filed. Rights to such foreign countries shall be included in the patent rights under any license between UNIVERSITY and SPONSOR.
- 8.7 SPONSOR shall reimburse UNIVERSITY for all filing, prosecution and maintenance costs for all patent applications and all issued patents filed at the request of SPONSOR.

Any such patent applications shall become part of the patent rights in any license between UNIVERSITY and SPONSOR. SPONSOR shall also reimburse UNIVERSITY for all filing, prosecution and maintenance costs for all other patent applications and issued patents which become part of the patent rights in any license Agreement between UNIVERSITY and SPONSOR.

**Article 9.0 TERMINATION**

- 9.1 Either party may terminate this Master Agreement prior to the designated term by giving thirty (30) days written notice to the other. Terminating this Master Agreement will also terminate all TASK ORDERS that are still active unless the parties agree that the active Scopes of Work will be completed in which event those active projects will be completed under the terms of this Agreement and no further work will be accepted.
- 9.2 Upon early termination of this Master Agreement and TASK ORDERS, SPONSOR shall pay all costs accrued by UNIVERSITY as of the date of termination including non-cancelable obligations for the term of the Agreement, which shall include all appointments of research staff incurred prior to the effective date of the termination.

**Article 10.0 LIABILITY AND NEGATION OF WARRANTY**

- 10.1 Each party will be responsible for its own negligent acts or omissions, and the negligent acts or omissions of its officers, employees, servants, and agents when acting within the scope of their employment or agency, and each party agrees to be liable for any damage or injury resulting from said negligent acts or omissions, subject to the limitations provided under Section 768.28 of the Florida Statutes. Nothing contained herein, or in any term or to any party any remedy or defense available to such party under the laws of the State of Florida; (2) consent by a party to be sued except as authorized under Section 768.28 of the Florida Statutes; (3) a waiver of sovereign immunity; or (4) constituting a hold harmless agreement.
- 10.2 UNIVERSITY makes no representation other than those specified in this Agreement. UNIVERSITY makes no express or implied warranties of merchantability of fitness for any particular purpose of data or technical information derived from this RESEARCH PROJECT.

**Article 11.0 ASSIGNMENT**

- 11.1 This Agreement may not be assigned by SPONSOR without the prior written Agreement of UNIVERSITY.

**Article 12.0 PUBLICITY**

- 12.1 Neither party will use the name or logo of the other, or of any member of the other's



personnel, in any publicity, advertising, or news release without the other's prior written approval.

**Article 13.0 NOTICES**

13.1 Notices, invoices, payments and other communications hereunder shall be deemed to have been made when delivered, sent by telex or telegram, or when mailed first class, postage prepaid, and addressed to the party at the address given below, or such other address as may hereafter be designated by notice in writing:

**SPONSOR:**  
**Name:** Palm Beach County  
**Address:** 2300 N. Jog Road  
West Palm Beach, FL 33411  
**Phone:** 561-233-5192  
**e-mail:** [DWise@pbcgov.org](mailto:DWise@pbcgov.org);  
[AMaharaj@pbcgov.org](mailto:AMaharaj@pbcgov.org)

**FLORIDA ATLANTIC UNIVERSITY**

**For Administrative matters:**  
Miriam Campo  
Assistant VP for Research  
Office of Sponsored Programs  
Division of Research  
Florida Atlantic University  
777 Glades Road, ADM 310  
Boca Raton, FL. 33431-0991  
[campom@fau.edu](mailto:campom@fau.edu)

**For Technical matters:**  
Principal Investigator Frederick Bloetscher  
Address 777 Grades Load  
Boca Raton, FL 33431  
(239) 250-2423  
[fbloetsc@fau.edu](mailto:fbloetsc@fau.edu)

**Article 14.0 MISCELLANEOUS**

14.1 UNIVERSITY and SPONSOR agree that the PROJECT SUPERVISOR AND PERSONNEL are acting as employees of UNIVERSITY and not as agents or employees of SPONSOR.

14.2 This Agreement shall be binding upon and inure to the benefit of the respective parties and their successors.

- 14.3 This Agreement shall be governed by and construed according to the laws of the State of Florida.
- 14.4 This Agreement may not be assigned by either party without the written permission of the other.
- 14.5 This Agreement embodies the entire understanding of the parties and supersedes all prior agreements, oral or written, and all other communications between the parties relating to the subject matter hereof.
- 14.6 No amendment or modification of this Agreement shall be valid or binding upon the parties unless made in writing and signed by their duly authorized employees.
- 14.7 Upon termination of this Agreement, neither party shall have any liability to the other, except for any provisions of this Agreement which by their nature extend beyond the termination or expiration until fulfilled and shall bind the parties and their legal representatives, successors and assigns.
- 14.8 The parties shall abide by the Financial Conflict of Interest (FCOI) federal regulations (42 CFR Part 50 Subpart F and 45 CFR Part 94) revised effective September 26, 2011.

**Article 15.0 E-VERIFY**

15.1 UNIVERSITY represents that it is a public employer under section 448.095, Florida Statutes and that it is registered with the E-Verify System (E-Verify.gov), and beginning at least January 1, 2021, uses the E-Verify System to electronically verify the employment eligibility of all newly hired workers. UNIVERSITY agrees that it will comply with the obligations for public employers under section 448.095, Florida Statutes in its performance under this Agreement.

The parties hereto have caused this Agreement to be executed by duly authorized representatives effective as of the later date indicated below:

**SPONSOR**

**FLORIDA ATLANTIC UNIVERSITY**

\_\_\_\_\_

Miriam Campo

Name: Robert S. Weinroth

Name: Miriam Campo

Title: Mayor

Title: Assistant VP for Research

Date: \_\_\_\_\_

Date: October 3, 2022

**APPROVED AS TO FORM  
AND LEGAL SUFFICIENCY**

7

  
\_\_\_\_\_  
**COUNTY ATTORNEY**

APPENDIX A

**FLORIDA ATLANTIC UNIVERSITY  
MASTER RESEARCH AGREEMENT  
TASK ORDER NO. XX**

This TASK ORDER is issued under Master Research Agreement No. C-22-229, between Florida Atlantic University and the Palm Beach County.

TO Issue Date:

Principle Investigator:

Project Title:

Period of Performance:

Funding Amount for this Task: \$

Payment Schedule:

Deliverables:

The Statement of Work, line item budget and a budget justification are attached.

All the terms and conditions of the Master Research Agreement between UNIVERSITY AND SPONSOR shall apply in full to this TASK ORDER.

IN WITNESS WHEREOF, the parties have agreed and do hereby enter into this TASK ORDER.

**SPONSOR**

**FLORIDA ATLANTIC UNIVERSITY**

Name: \_\_\_\_\_  
Title: County Administrator or designee  
Date: \_\_\_\_\_

Name: Miriam Campo  
Title: Assistant VP for Research  
Date: \_\_\_\_\_

**Scope of Work:**

For Phase 2, FDEM will coordinate with Sub-recipients to produce a Watershed Master Plan (WMP) for credit under the Community Rating System (CRS). In Phase 1, a pilot project was completed that consisted of research, the creation of a framework and guidance documents that ensure a consistent statewide approach to WMP development.

Sub-recipients under the Watershed Planning Initiative will use the Phase 1 guidance materials to produce a Watershed Master Plan for credit under CRS. Phase 1 materials can be found at: <https://www.floridadisaster.org/dem/mitigation/watershed-planning-initiative> or <https://www.fau.edu/engineering/research/cwr3/clearinghouse/>. The Sub-recipient will finalize the process by receiving approval from ISO/CRS that the created WMP is sufficient to receive credits under CRS 452.b. Tasks necessary to the completion of a Phase 2 include:

Task 1 – Creation of preliminary scope of work, initial flood modeling & submission of draft WMP to CRS officials for approval. The flood modeling should consider evaluations of the watershed's runoff response from design storms under current and predicted future conditions and assessments of the impacts of sea level rise and climate change. Preliminary modeling should include 10-, 25- & 100-year storm events. This initial scope of work and WMP draft should include preliminary modeling of the 10-, 25- and 100-year storm events, an inventory of the ground characteristics and data availability, existing regulations and plans in place, a description of vulnerable areas or areas of interest, a list of potential solutions, and a brief description of future actions plans.

Task 2 – Submit final WMP & CRS approval. After receiving feedback and approval on the sub-recipient's scope of work and flood modeling submission in Task 1 from FDEM and CRS officials, the sub-recipient will finalize the flood modeling process and complete their WMP. At a minimum, the modeling and WMP must include 10, 25 & 100 year storm events—or model sea level rise—to receive credit through CRS element 452.b. The sub-recipient will update their CRS plan and submit the updated prospective point total to CRS to receive points for element 452.b. The sub-recipient will submit the updated CRS plan to CRS for approval at the same time as they submit their final WMP to CRS for approval. If revisions are necessary. The subrecipient will correct and re-submit for CRS approval.

FDEM’s grant process includes the previously stated Task 1 and Task 2. Task 1 for the subrecipient grant includes the following sub-Tasks 1-6 which will be performed by FAU under subcontract.

FAU Contractual Budget – Palm Beah County		
Classification	Cost	Effort
Faculty Salary + Fringe	\$36,411	2.3 Months
Postdoc Salary + Fringe	\$80,000	12 Months
Project Coordinator Salary + Fringe	\$5,625	0.6 Months
IT Personnel Salary + Fringe	\$7,546	0.6 Months
Research Assistant - MS	\$19,630	20 hours/Week
Research Assistant - Ph.D.	\$24,545	20 hours/week

Tuition	\$15,307	
Computer Hardware/Software	\$5,500	
Travel and Supplies	\$500	
Graduate Student Training	\$4,936	
<b>Total Direct Cost</b>	<b>\$200,000</b>	
<b>Indirect Cost (5%)</b>	<b>\$10,000</b>	
<b>Total</b>	<b>\$210,000</b>	

Task 1- Background Information Gathering

Task 2- Policy Documentation for HUICS

Task 3- Risk Models for HUICS

**First 1/3 Payment Due (\$66,667)**

Task 4- Identifying Critical Areas/Solutions in HUICS

Task 5- Action Plan

Task 6 - Submit for Staff Review

**Second 1/3 Payment Due (\$66,667)**

Task 7 - Submit to NFIP for Review

Task 8 – Update CRS submission

Task 9 - Commission Approval

Task 10 – Progress reports to FDEM

**Last 1/3 Payment Due (\$66,666)**

Interim documentation will be provided for submission for initial commentary at the 75% stage of Tasks 1 to 5. FAU will complete Tasks 1-5 based on feedback from NFIP reviewers as a part of Subrecipient Task 2 in the FDEM RFP and provide support for sub-Tasks 7 to 9 which are a part of the Task 2 in the FDEM guidance. Each work task is outlined in the following paragraphs.

#### **Task 1 - Background Information**

Watershed Master Plans (WMPs), as conceived by the National Flood Insurance Program (NFIP) Community Rating System (CRS) program, provide an outline for communities to reduce local flood risk. According to the CRS Coordinator’s Manual 2021 Addendum (FEMA, 2021), “the objective of watershed master planning is to provide communities within a watershed with a tool they can use to make decisions that will reduce flooding from development on a watershed-wide basis.” Successful watershed master plans (WMPs) consist of the following activities (Association of State Floodplain Managers, 2020):

1. Evaluation of the watershed’s runoff response from specific design storms under current and predicted future conditions
2. Assessment of the impacts of sea level rise and climate change
3. Identification of wetlands and other natural areas throughout the watershed
4. Protection of natural channels

5. Implementation of regulatory standards for new development such that peak flows and volumes are sufficiently controlled
6. Specific mitigation recommendations to ensure that communities are resilient in the future
7. A dedicated funding source to implement the mitigation strategies recommended by the plan

The process begins by first characterizing the watershed. A balanced approach is needed to obtain watershed-related information with the relevant precision. For example, groundwater is relevant when the ground and surface waters are directly connected, and the soil may lack capacity for infiltration storage. Geology, hydrogeology, land use, canals and other water bodies, and historical changes to the surface may be relevant to create the watershed description. A summary of the local communities involved in each HUC will be developed. Topographic features, uplands, wetlands, and shorelines will be delineated along with current flood maps. Other requirements are growth projections and mitigation strategies at the various scales (watershed, regional, and local) to limit increasing flood risk. FAU will collect the necessary data to be able to generate the mapping products needed for watershed master planning activities.

DELIVERABLE: Chapters 1 and 2 of the Watershed plan

### **Task 2 - Policy Documentation for HUCs**

A Watershed Master Plan should be cognizant of applicable regulatory guidelines, ordinances, and public policies that relate to water management within the study area. It is important that the WMP identify the control actions, management practices, and regulations as well as the agencies that have authority and jurisdiction, as applicable to the study area. These will include regulatory standards for new development such that peak flows and volumes are sufficiently controlled and regulations that prohibit development, alteration, and modification of existing natural channels are in place. The universe of existing regulations includes federal, state, tribal, regional, and local rules. FAU with assistance from the communities in the study area will identify the necessary documents including the Local Mitigation Strategy (LMS) plan and previous CRS credit reviews, as well as minimum flows and levels and flow volumes, as applicable.

DELIVERABLE: Chapter 3 of the Watershed plan

### **Task 3 - Risk Models for HUCs**

Modeling and assessment of vulnerability focused on the combination of a high water table, low soil storage, heavy rains, flat topography, and impervious conditions that can lead to localized nuisance flooding events. Modeling at the screening level is needed to identify areas of the watershed that are at risk. FAU will use a screening tool to identify regions with elevated risk of inundation based on multiple collected datasets and hydrological modeling. The screening tool utilizes topographic data from various sources, water table elevations, tidal information for coastal areas obtained from the NOAA Current & Tides website, soil maps obtained from the USDA, and other key datasets. Figure 2.1 shows how the GIS layers interface in the tool, and how they are combined for spatial analysis. The model chosen for this screening tool is Cascade 2001, which is a multi-basin hydrologic/hydraulic routing model developed by the South Florida Water Management District. The model permits the investigator to analyze different storm events and flooding scenarios. The following data layers collected during Task 1 activities are processed to develop the input files for Cascade 2001.



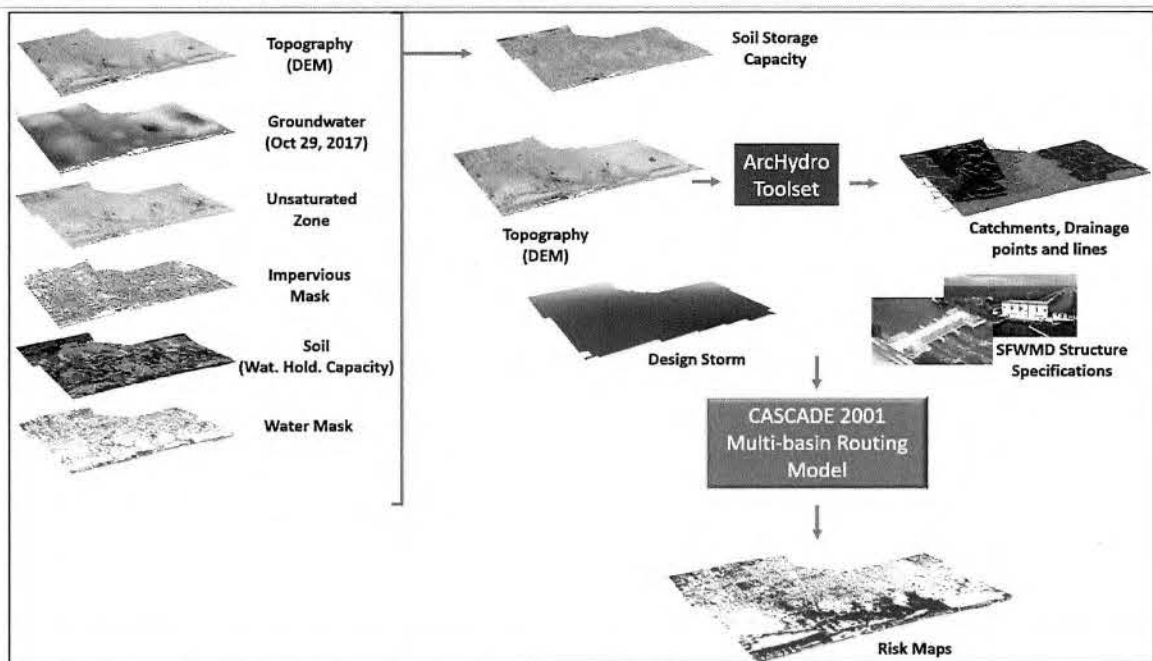


Figure 2.1. Screening tool methodology for creating flood risk maps

FAU will conduct map development activities that address the required design storms including 5-, 10-, 25- and 100-year floods, plus the 3-day, 25-year storm event, with 1, 2, 3, 4 and 5 ft of sea level rise and king tides, as applicable. At a minimum, the modeling and WMP must include 10-, 25- & 100-year storm events—or model sea level rise—to receive credit through CRS element 452.b. Note that understanding build-out and the impacts build-out has on drainage are factors that must be considered in modeling which must come from the underlying local communities. This is the watershed master planning assessment.

DELIVERABLE: Chapter 4 of the Watershed plan with all applicable modeling scenarios for the HUC and relationship to involved HUCs; drilldown to community issue modeling

#### Task 4- Identifying Critical Areas/Solutions in the HUCs

Once areas at risk have been identified in the watershed master planning assessment, Task 4 is designed to identify potential mitigation measures to improve community resilience and flood protection. The process starts with narrowing down the feasible engineering alternatives using threshold criteria and quantifiable selection criteria that include measures of effectiveness, cost, and added benefit to the community. At the center of these planning efforts should also exist the provision for an adequate drainage system, designed to accommodate an increased volume of water and/or increased peak flows. Current capital plans, stormwater master plans, capital projects etc. will be identified. Local governments have these documents which will be secured in Task 2.

For this document, 35 solutions referred to as the "Periodic Table" menu of green and grey infrastructure technologies (Figure 2.2) will be referenced as applicable. Improvements like pump stations, changing weir elevations, larger pipes and coastal sea walls are major hardening efforts that can be modeled in Cascade 2001.

## Menu of Green and Grey Infrastructure Technologies

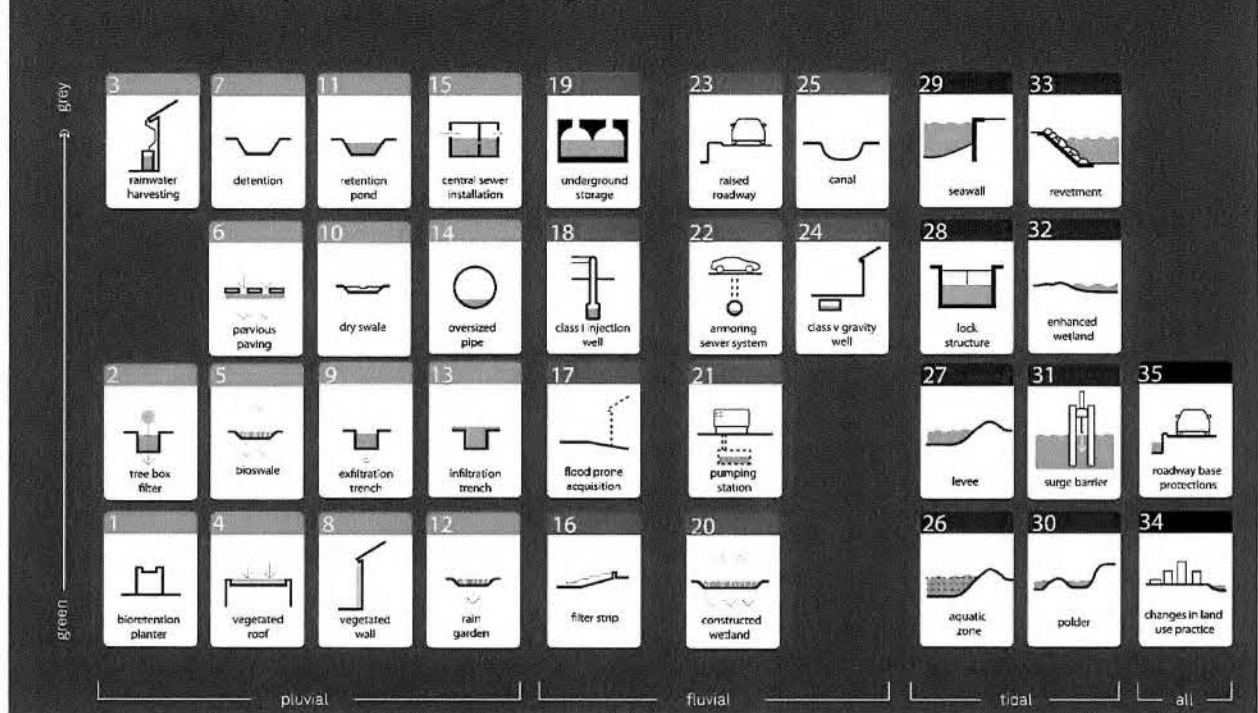


Figure 2.2. “Periodic table” menu of green and grey infrastructure technology options. The menu is organized to address various flooding types, from *pluvial* (rainfall and runoff mitigation in upland areas), *fluvial* (runoff, high ground water, and surface water management in low-lying flood prone areas), *tidal* (flooding associated with storm surge, high ground water, and tidally influenced), and *all* (applies across the spectrum).

DELIVERABLE: Update and completion of Chapter 4 and Chapter 5 of the Watershed plan with applicable modeling scenarios for the HUC

### Task 5- Action Plan

The key components of the implementation phase are: 1) the implementation team, 2) information/education, 3) capital improvement projects, 4) maintenance, 5) monitoring, and 6) evaluation and adjustments. A watershed implementation team made up of key stakeholder partners from the planning team, particularly those whose responsibilities include making sure tasks are being implemented, reviewing monitoring data, ensuring technical assistance in the design and installation of management measures, finding new funding sources, and communicating results to the public.

DELIVERABLE: Chapter 6 of the Watershed plan – this should complete the planning document

### Task 6 – Submit Draft Plan to Staff for Review

FAU will submit the draft WMP to staff for review and comments. Feedback will be addressed in a timely fashion, prior to Task 7.

DELIVERABLE: Delivery and receipt of comments from staff of the planning document



Task 8-Update CRS submission

Staff w FAU  
support

Task 9- Commission Approval

Staff w FAU  
support



**Affette McIntosh R.**

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**From:** Watershed Planning <watershedplanning@em.myflorida.com>  
**Sent:** Friday, September 16, 2022 3:37 PM  
**To:** Kenneth Todd Jr  
**Cc:** Affette McIntosh R.; Laura Dhuwe; Kristin Lentz; Watershed Planning  
**Subject:** 4337-004-Pi FEMA Award Notification

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**This Message Is From an External Sender**

This message came from outside your organization.

Good afternoon Ken,

**REF: 4337-004-Pi, Phase 2 FDEM Watershed Planning Grant, Watershed Master Planning Initiative – FEMA APPROVAL**

The Florida Division of Emergency Management (FDEM), Mitigation Bureau, Hazard Mitigation Grant Program is pleased to inform you that the above referenced project has been approved for funding from the Federal Emergency Management Agency (FEMA), for the above referenced project and given FEMA Project number **4337-004-Pi**. You will need to reference this FEMA number in all email subject line and in all documents submitted to FDEM.

We are in the process of developing and preparing a contract for you to review and approve, which we will email to you.

***Remember, no work can commence until the contract has been executed by both parties.***

The project was approved for the amounts below and will be managed by FDEM, Mitigation Bureau. As the Point of Contact, you will be responsible for the management of this project. In the meantime, **please review all information provided in this email to make sure that everything is still applicable, and notify me as soon as possible, if this information has changed** or if you have any questions regarding this process. **Please also provide the financial remittance address for your reimbursements.**

**Point of Contact (POC):**

Name, Title: Ken Todd, Senior Professional Engineer  
Sub-Recipient: Palm Beach County  
Address: 2300 N Jog Rd West Palm Beach, FL 33411  
Email: ktoddjr@pbcgov.org  
Telephone: 561-681-3922

**Budget**

Project Costs: \$280,000.00  
Federal Share: \$210,000.00  
Local Share: \$70,000.00

**Procurement under Federal Awards:**

Utilize the link for information on FEMA's website per the contract. FEMA has developed helpful resources for subrecipients related to compliance with the Federal procurement standards in 2 C.F.R. §§200.318 through 200.327 and required contract provisions in Appendix II to 2 C.F.R. Part 200.