



The Florida Senate

Local Funding Initiative Request - Fiscal Year 2018-2019

1. **Title of Project:** Florida State University High-resolution Soil Moisture and Irrigation Recommendations

2. **Senate Sponsor:** Bobby Powell

3. **Date of Submission:** 11/15/2017

4. **Project/Program Description:**

To develop and validate through a pilot study the capability of using readily available real-time radar data to map soil moisture and saturation (including projected saturation) on a high-resolution scale. This can be scaled up to provide such data and forecasts statewide. The output will provide decision makers with highly accurate soil moisture information without the high-cost and maintenance of in-situ monitoring networks. In this way they can share soil moisture data with users to reduce over-irrigation, save water and protect the environment.

5. **State Agency Contacted?** Yes

a. If yes, which state agency? Department of Environmental Protection

b. If no, which is the most appropriate state agency to place an appropriation for the issue being requested?

6. **Amount of Non-recurring Requested for fiscal year 2018-19:**

Amount Requested for Operations	Amount Requested for Fixed Capital Outlay	Total Amount of Requested State Funds
1,000,000		1,000,000

7. **Type, amount and percent of matching funds available for this project for fiscal year 2018-19:**

Type	Amount	Percent
Federal	0	0.0%
State (excluding the amount of this request)	0	0.0%
Local	0	0.0%
Other	0	0.0%
TOTAL	0	0.0 %

8. **Total Project Cost for fiscal year 2018-19 (including the Total Amount of Requested State Funds):** 1,000,000

9. **Previous Year Funding Details:**

a. Has funding been provided in a previous state budget for this activity? No

b. In the previous 5 fiscal years, how many years was funding provided? (Optional)

c. What is the most recent fiscal year the project was funded?



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- d. Were the funds provided in the most recent fiscal year subsequently vetoed?
e. Complete the following Worksheet.

FY:	Input Prior FY Appropriation for this project for FY 2017-18 (If appropriated in FY 2017-18 enter the appropriated amount, even if vetoed.)		
Column:	A	B	C
Funds Description:	Prior Year Recurring Funds *	Prior Year Nonrecurring Funds *	Total Funds Appropriated (Column A + Column B)
Input Amounts:			

10. Is future-year funding likely to be requested?

No

11. Program Performance:

a. What is the specific purpose or goal that will be achieved by the funds requested?

To use already available radar data and modeling to derive highly-localized rainfall and soil moisture readings calibrated with field data to improve urban water management.

b. What are the activities and services that will be provided to meet the intended purpose of these funds?

The development and sharing of important soil moisture and rainfall information by public works and other state and local groups to citizens on a daily basis so they can reduce over-irrigation, save water and protect the environment.

c. How will the funds be expended?

Spending Category	Description	Amount
Administrative Costs		
<input checked="" type="checkbox"/> Executive Director/Project Head Salary and Benefits	Manage and direct the program. Responsible for results in line with purpose and goals of project	98,000
<input type="checkbox"/> Other Salary and Benefits		
<input type="checkbox"/> Expense/Equipment/Travel/Supplies/Other		
<input type="checkbox"/> Consultants/Contracted Services/Study		



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Operational Costs		
<input checked="" type="checkbox"/> Salary and Benefits	Software professionals - enhancement of previously-developed models and algorithms; Meteorologists and hydrologists - radar reflectivity integration and interpolation, water levels, saturation; Engineers - system design and integration; Field technicians - implementation of hardware for validation; Researchers - radar reflectivity translation to localized rainfall, saturation and duration	578,600
<input checked="" type="checkbox"/> Expense/Equipment/Travel/Supplies/Other	Travel, expenses, O&M and misc. and data acquisition, calibration instrumentation, research/validation equipment	323,400
<input type="checkbox"/> Consultants/Contracted Services/Study		
Fixed Capital Construction/Major Renovation		
<input type="checkbox"/> Construction/Renovation/Land/Planning Engineering		
TOTAL		1,000,000

d. What are the direct services to be provided to citizens by the appropriations project?

Soil moisture is vital for understanding hydrologic cycles, maintaining optimal plant growth and nutrient absorption and minimizing pollution from superfluous irrigation. Citizens in the pilot study would have access to high-resolution soil moisture and rainfall estimates along with suggested irrigation recommendations.

e. Who is the target population served by this project? How many individuals are expected to be served?

This project is expected to serve residents of a water drainage district as part of the pilot study. If the study meets expectations, the system could be scaled and implemented on a county-by-county or statewide scale.

f. What is the expected benefit or outcome of this project? What is the methodology by which this outcome will be measured?



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This data resource would benefit environmental protection, public works, urban planners, and most of all citizens with lawns by providing real-time, high-resolution soil moisture on a daily basis. The outcome would be measured by water usage and water quality data.

- g. What are the suggested penalties that the contracting agency may consider in addition to its standard penalties for failing to meet deliverables or performance measures provided for in the contract?**

If the Department determines that the performance is unsatisfactory, the Department can send notification of the deficiency, which correction shall be made within a reasonable time-frame. A corrective action will be provided to the Department. If the corrective plan is not met a non- performance retainage equivalent to 5% of the invoice amount will be initiated. The retainage will be held until the deficiency is resolved.

- 12. The owner(s) of the facility to receive, directly or indirectly, any fixed capital outlay funding. Include the relationship between the owner(s) of the facility and the entity.**

n/a

- 13. Requestor Contact Information:**

- a. Name:** Ming Cai
- b. Organization:** Florida State University
- c. Email:** mcai@fsu.edu
- d. Phone Number:** (850)644-1894

- 14. Recipient Contact Information:**

- a. Organization:** Florida State University
- b. County:** Palm Beach
- c. Organization Type:**
 - ☐ For Profit
 - ☐ Non Profit 501(c) (3)
 - ☐ Non Profit 501(c) (4)
 - ☐ Local Entity
 - ☐ University or College
 - ☒ Other (Please specify) State Agency Owned (University)
- d. Contact Name:** Ming Cai
- e. E-mail Address:** mcai@fsu.edu
- f. Phone Number:** (850)644-1894

- 15. If there is a registered lobbyist, fill out the lobbyist information below.**

- a. Name:** Christopher Coker
- b. Firm:** Coker Consulting, llc
- c. Email:** chris@cokerconsultingfl.com
- d. Phone Number:** (850)570-5432

- 16. Have you applied for alternative state funding?**



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- ☐ Wastewater Revolving Loan
- ☐ Drinking Water Revolving Loan
- ☐ Small Community Wastewater Treatment Grant
- ☐ Other (Please describe)
- ☒ N/A

17. What is the population economic status?

- ☐ Financially Disadvantaged Community (ch. 62-552, F.A.C)
- ☐ Financially Disadvantaged Municipality (ch. 62-552, F.A.C)
- ☐ Rural Area of Economic Concern
- ☐ Rural Area of Opportunity (s. 288-0656, Florida Statutes)
- ☒ N/A

18. What is the status of construction?

n/a

19. What percentage of construction has been completed?

n/a

20. What is the estimated completion date of construction?

n/a