

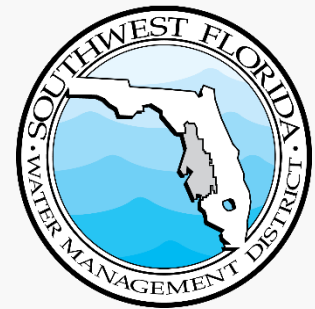
# USING AUTOMATION TO IMPROVE DRAINAGE OPERATIONS AND REDUCE FLOOD RISK

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**Sammy Huey, PE, Engineer III**  
**Pasco County**

**Scott Shannon, PE, Principal**  
**Woodard & Curran**

**Florida Stormwater Association**  
**June 16, 2022**



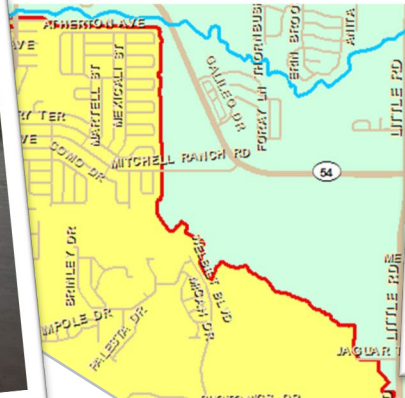
# Case Study: Duck Slough Watershed



# Impacts of Flooding



Trinity Oaks flooding<sup>50</sup>

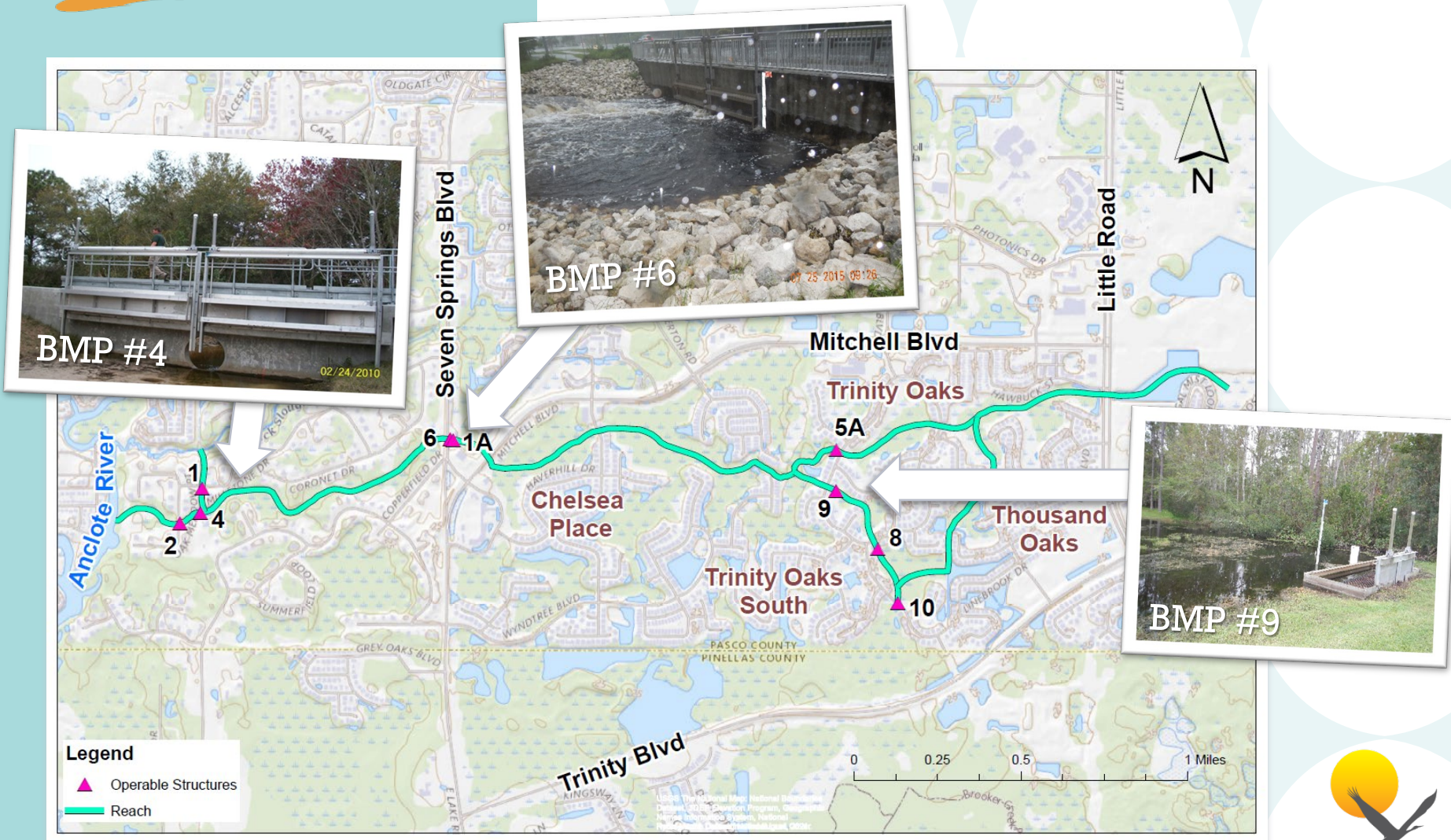


Little Road under water





# BMP Structures in Duck Slough





# BMP Structures in Duck Slough





# Operations Prior to Automation

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# Onsite Improvements



Lighting

Surveillance

Motors &  
Transducers

Power

Communications





# Control Center Improvements



VT SCADA

Surveillance

Cable Internet

User Manual

IT Department & Support





# Remote Operability (SCADA)

**Camera Site View**

Light Pole On/Off

Light Pole On Light Pole Off

Open BMP9 Camera View

**Gate 1 Controls (North)**

Water Level **IN REMOTE** Gate Controls

27'  
21.3'  
15.5'

48" BC

Level	*, * FT
Below 21 FT = Dry Channel	
Gate Position	25

Open Close Stop

**Gate 2 Controls (South)**

Water Level **IN REMOTE** Gate Controls

27'

Level	*, * FT
Below 21 FT = Dry Channel	
Gate Position	25

Open Close Stop

**Level Trend**

26  
24  
22  
20  
18  
16

10:10 10:20 10:30 10:40 10:50 11:00 11:10 11:20 11:30 11:40 11:5

**Gate 1 Position Trend**

10:10 10:20 10:30 10:40 10:50 11:00 11:10 11:20 11:30 11:40 11:5

**Gate 2 Position Trend**

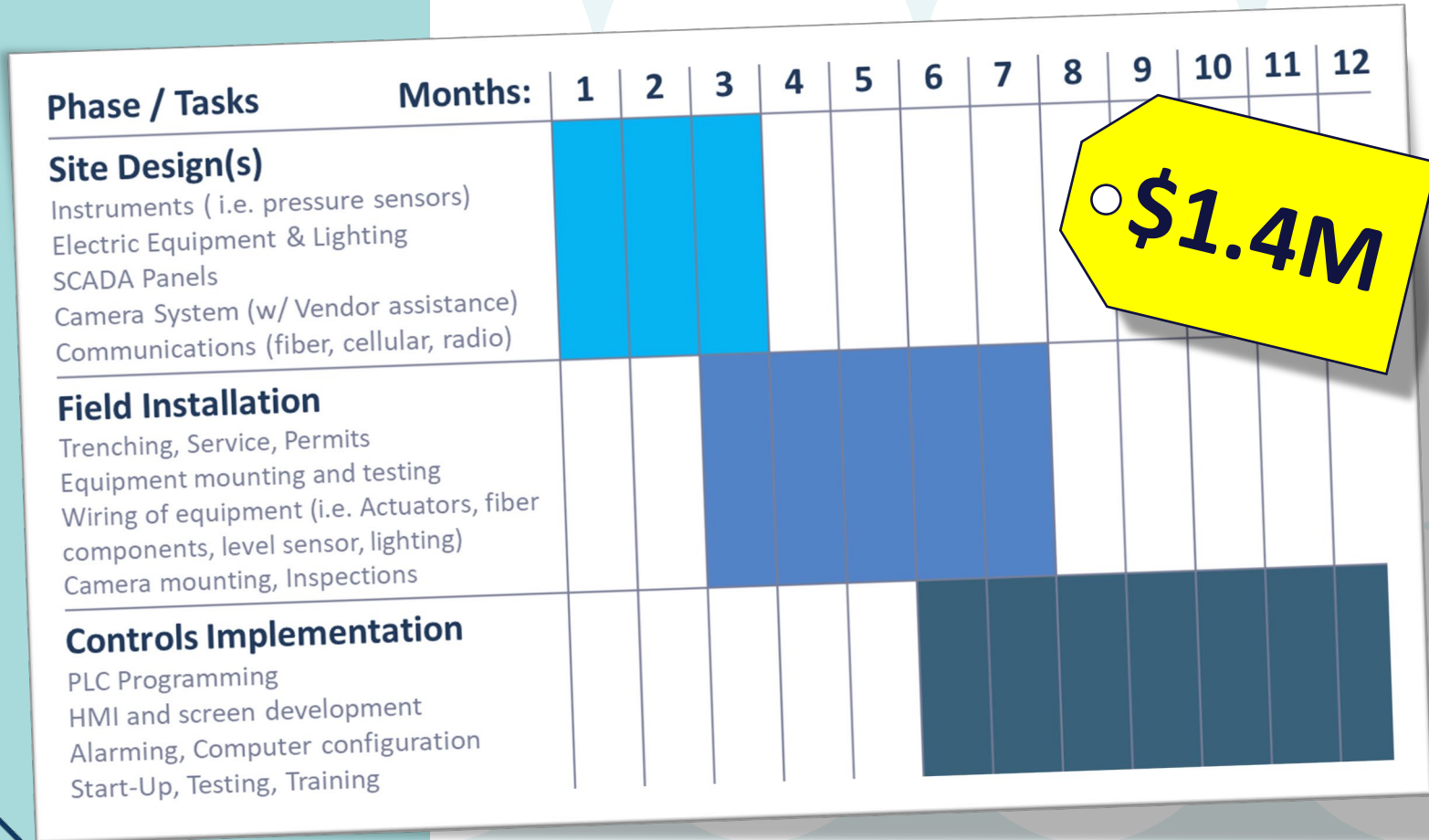
10:10 10:20 10:30 10:40 10:50 11:00 11:10 11:20 11:30 11:40 11:5

Overview Site Setpoints Site Alarms

BMP 9 - 1440 Kinsmere Drive



# Project Timeline and Cost



**\$1.4M**





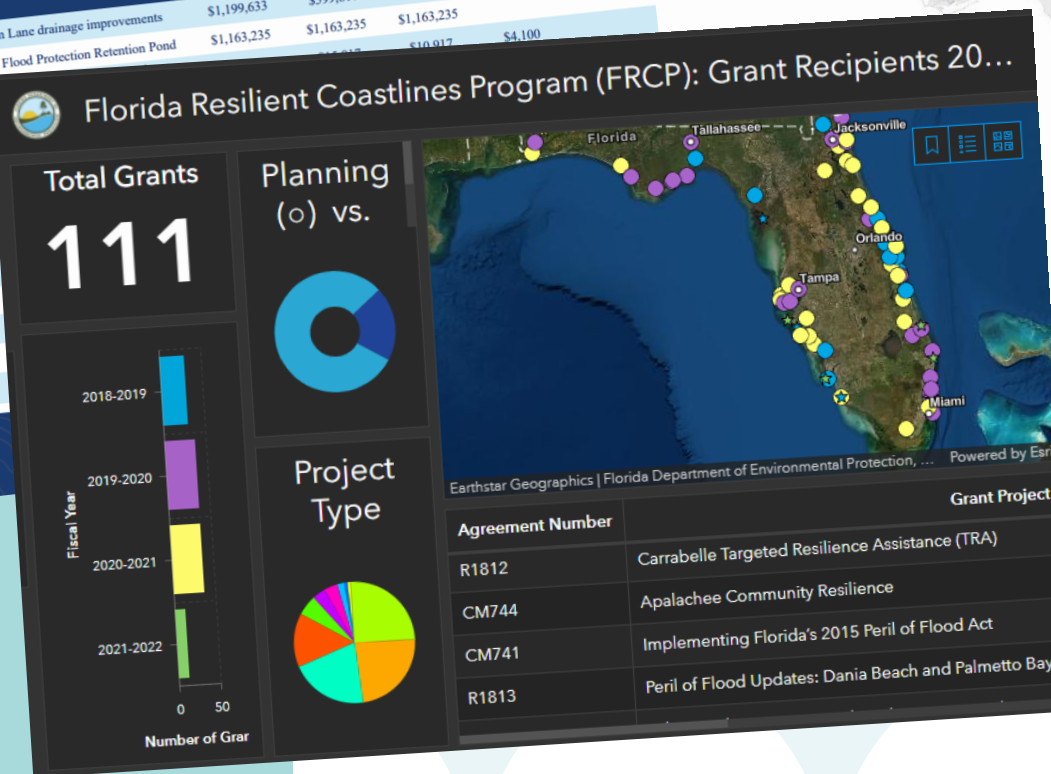
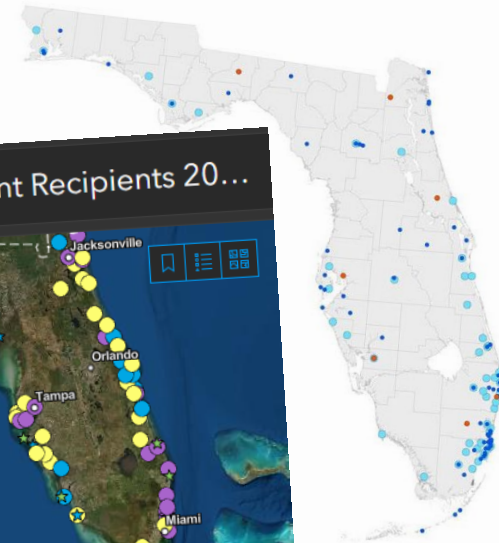
# Expan\$ion Opportunities



## 2022-23 Statewide Flooding and Sea Level Rise Resilience Plan

Project Sponsor	County	Project Title	Approximate Total Project Cost (dollars)	Estimated Requested Funding Total (dollars)	Year 1 Funding	Year 2 Funding	Year 3 Funding
Alachua County	Alachua	Robin Lane drainage improvements	\$1,199,633	\$599,817	\$599,817		
City of Parker	Bay	Inland Flood Protection Retention Pond	\$1,163,235	\$1,163,235	\$1,163,235		
Brevard County Mosquito Control	Brevard				\$10,017	\$4,100	
Broward County Aviation Department	Broward						
City of North Lauderdale	Broward						
City of Sunrise	Broward						
City of North Lauderdale	Broward						
City of Lauderdale Lakes	Broward						
Broward County	Broward						
City of Oakland Park	Broward						
City of Oakland Park	Broward						
City of Oakland Park	Broward						
Broward County Aviation Department	Broward						

Projects funded by the Resilient Florida Program for fiscal year 2021-22 and 2022-23



# Lessons Learned

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1. Get all stakeholders involved early in the process
2. Determine whether the telemetry system will be dependent on an outside or internal source
3. Ensure proposed system is compatible to your IT security standards
4. Consider the degree to which backup systems are warranted
5. Consider the need to protect electronics onsite with solar shielding





# Public Engagement

