



Corkscrew Watershed Initiative (CWI)

**Public Meeting #3
September 30, 2026**

Agenda

- Welcome and Project Team
- CWI Background and Overview
- Modeling and Performance Measures
- Alternatives Evaluation
- Questions and Public Comment





Welcome and Project Team

Project Team and Technical Working Group

Project Team:

- South Florida Water Management District (SFWMD)
- Consultant Team: J-Tech; an alliance of Jacobs and Tetra Tech



Technical Working Group:

- Corkscrew Swamp Sanctuary (CSS)
- Corkscrew Regional Ecosystem Watershed (CREW) Land & Water Trust
- Collier County
- Lee County
- Village of Estero
- City of Bonita Springs

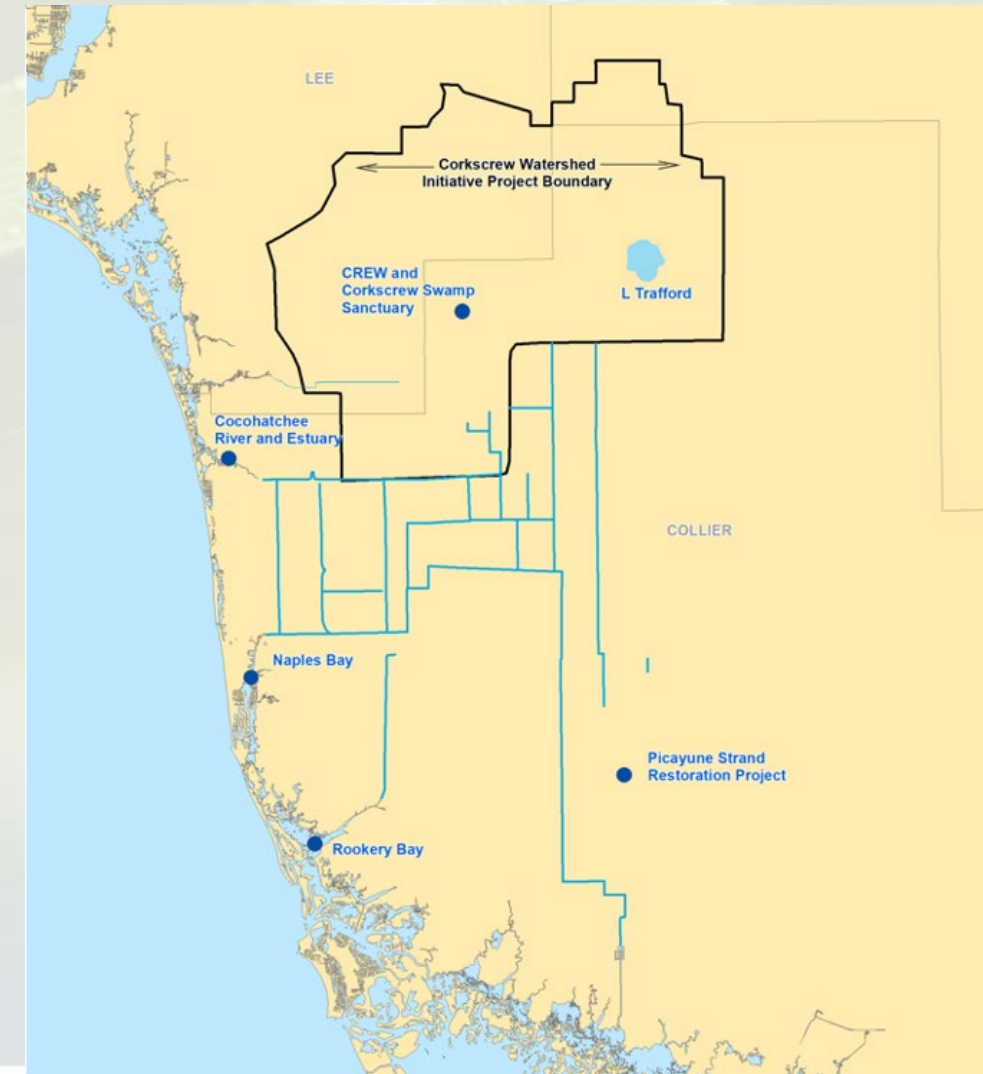




CWI Background and Overview

Corkscrew Watershed Initiative Objectives

- Comprehensive strategy to achieve ecological restoration of the Corkscrew system with an emphasis on hydrology
- Reduce flood risk where possible
- Maintain water supply
- Engage partners, stakeholders, and the public in planning
- Identify viable short- and long-term strategies and features for ecological restoration



Project Schedule

Official Kick-off with
TWG: March 1,
2024



2024: Final Work
Plan, Data
Collection,
Performance
Measures for
Project Goals, Draft
BCB Model
Refinement for
CWI Project Area



2025: Final BCB
Model Refinement,
Modeling of
Existing and Future
Baseline
Conditions, Initial
Restoration Project
List and Matrix

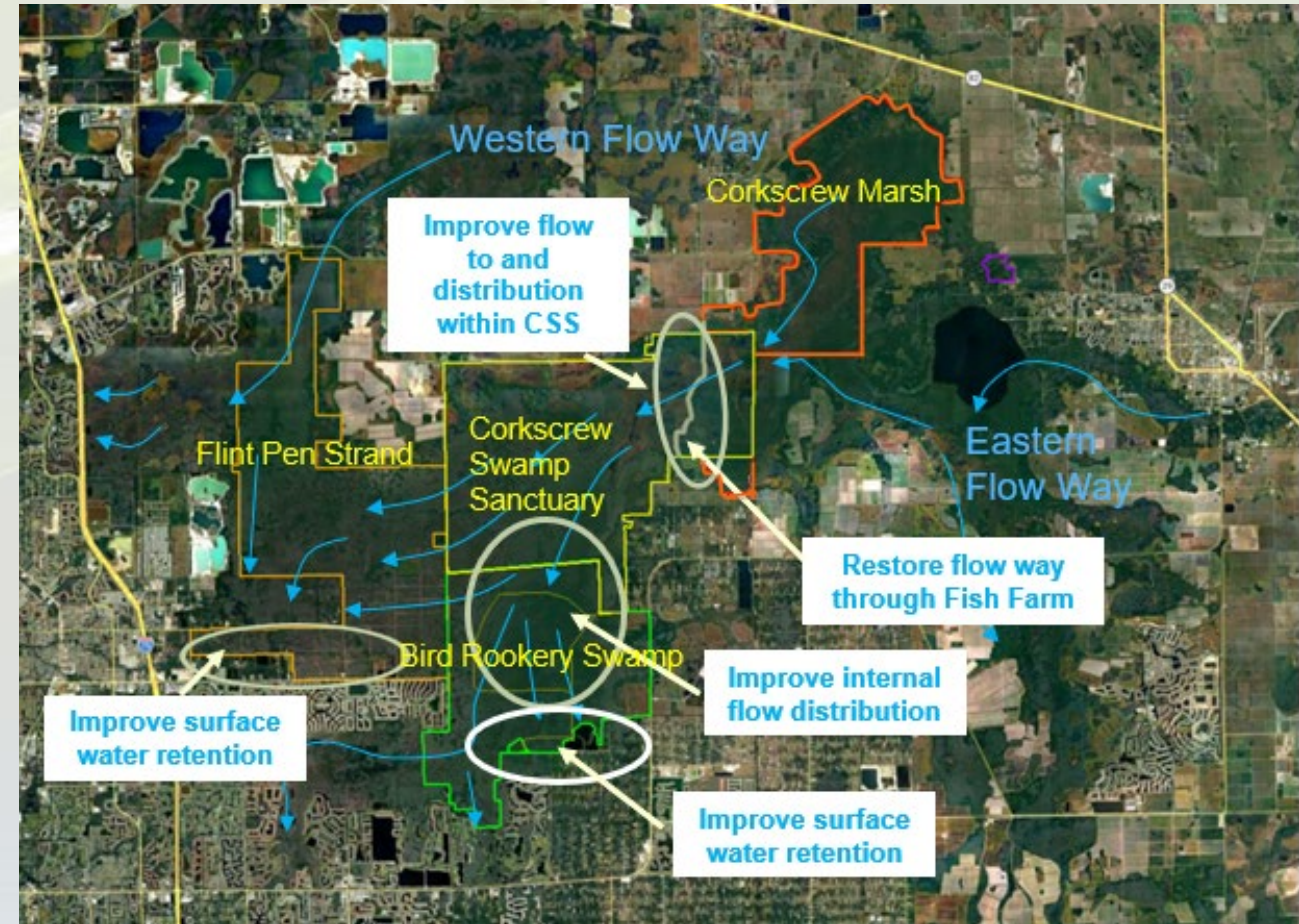


2026: Modeling of
Restoration
Projects, Identify
Projects that meet
CWI objectives,
Final Report and
Conceptual Plans,
Final Public
Meeting

Restoration Project Concepts- Refined

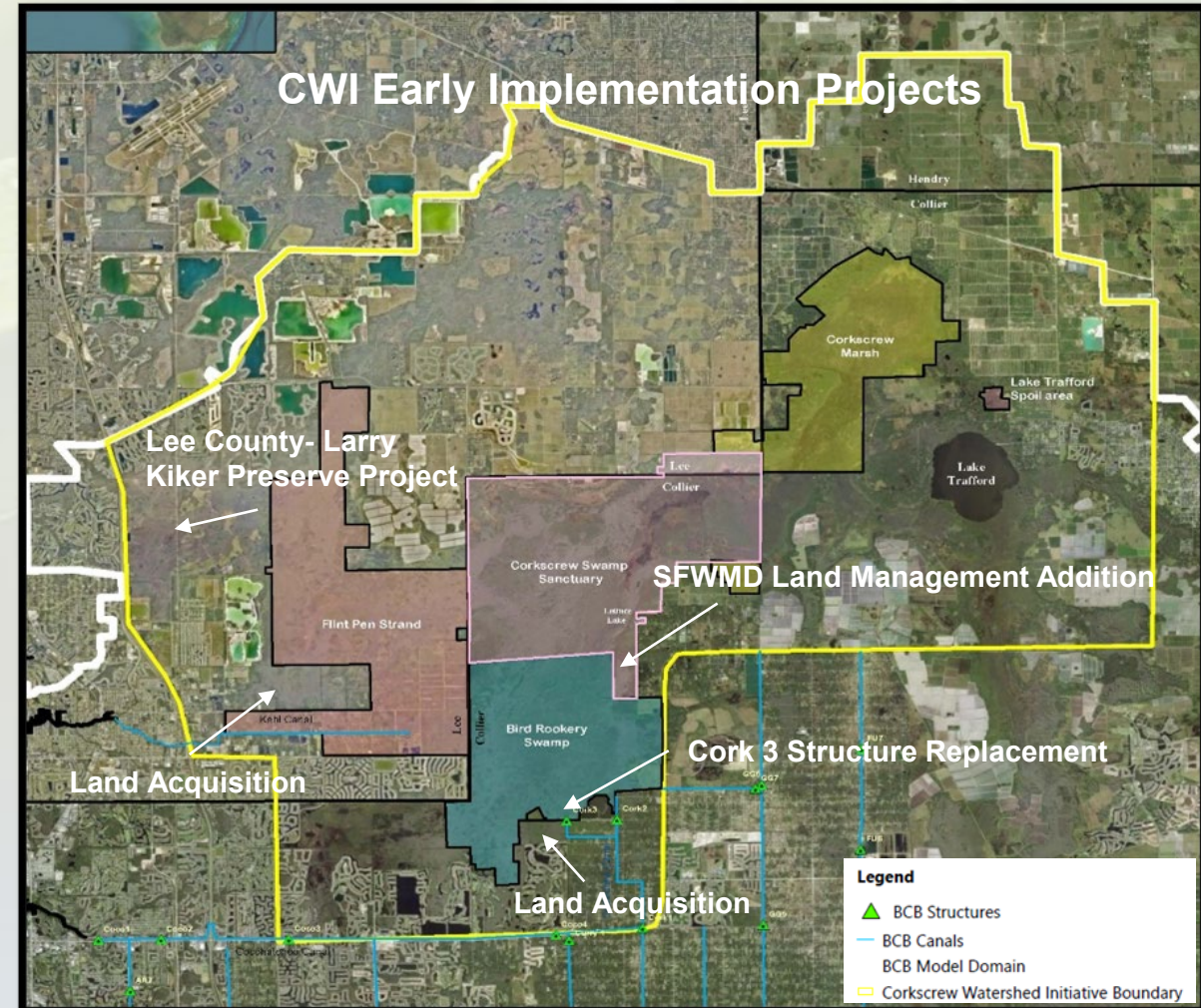
➤ Focus on four major areas to achieve project objectives

- **Restoration of Northeast-Southwest Flow Way:** Improve flow from Corkscrew Marsh to Corkscrew Swamp, better distribute flow entering and within CSS
- **Bird Rookery Swamp Hydrologic Improvements:** Provide a more natural surface and groundwater flow distribution. Increase hydroperiods and dry season water levels within southern CSS and Bird Rookery Swamp
- **Hydrologic Improvements along Shady Hollow Boulevard:** Improve surface water retention north of Shady Hollow Boulevard and Corkscrew Canal, and improve dry season water levels
- **Western Flow Way Improvements:** Improve surface water retention and dry season water levels, extend hydroperiods in southern Flint Pen Strand, and augment the effectiveness of the Kiker Preserve project



CWI Early Implementation Efforts

- SFWMD land management addition (“School Board” parcel); long-term lease amendment with Florida Department of Environmental Protection (FDEP) completed
- Lee County Kiker Preserve Project
- Land acquisition within Conservation Collier’s Red Maple Swamp Preserve
- Coordination on land acquisition within CWI project area
- Conceptual Plans for Cork 3 Replacement





Modeling and Performance Measures

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- DISCLAIMER**
This map was prepared for the purpose of providing information and does not constitute a warranty or guarantee of any kind. The map is provided as a reference only and should not be used for any other purpose. The map is not a legal document and should not be used for any legal purpose. The map is not a survey and should not be used for any surveying purpose. The map is not a map of any other kind and should not be used for any other kind of purpose. The map is not a map of any other kind and should not be used for any other kind of purpose.
- The map is a representation of the current state of the watershed. The map is not a legal document and should not be used for any legal purpose. The map is not a survey and should not be used for any surveying purpose. The map is not a map of any other kind and should not be used for any other kind of purpose.
- LEGEND**
 BCB Canals
 Corkscrew Watershed Initiative Boundary
 BCB Model Domain
 Corkscrew_Swamp_Sanctuary
 C.R.E.W. Management Area
- Scale**
 0 4 8 Miles
- North Arrow**
- Map Title**
 Corkscrew Watershed Initiative Project Boundary
- Map Date**
 Dec 2023
- Map Author**
 BIG CYPRESS BASIN SWIWD
 2660 Horseshoe Dr. N.
 Naples, Florida 34104
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Performance Goals and Metrics



- Hydrologic restoration of wetlands – Restore more historic hydroperiods and water depths in the wet and dry seasons
- Habitat restoration – Obtain more appropriate vegetative communities that support wildlife with a focus on protected species
- Flood protection – No impacts
- Water supply – No impacts
- Ease of implementation – Positive cost benefit analysis, low maintenance, and stakeholder support

Wetland Hydrologic Restoration Analysis

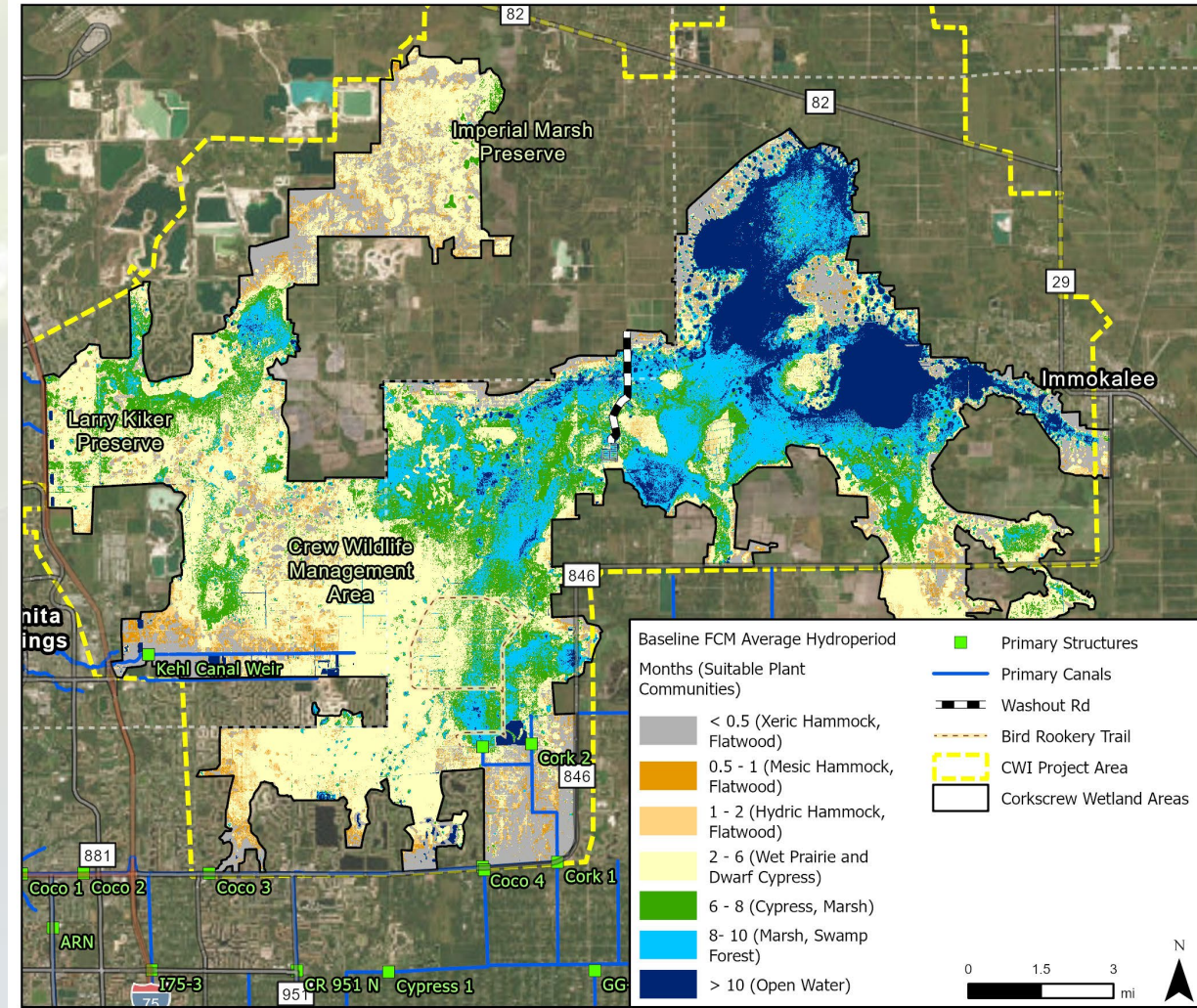
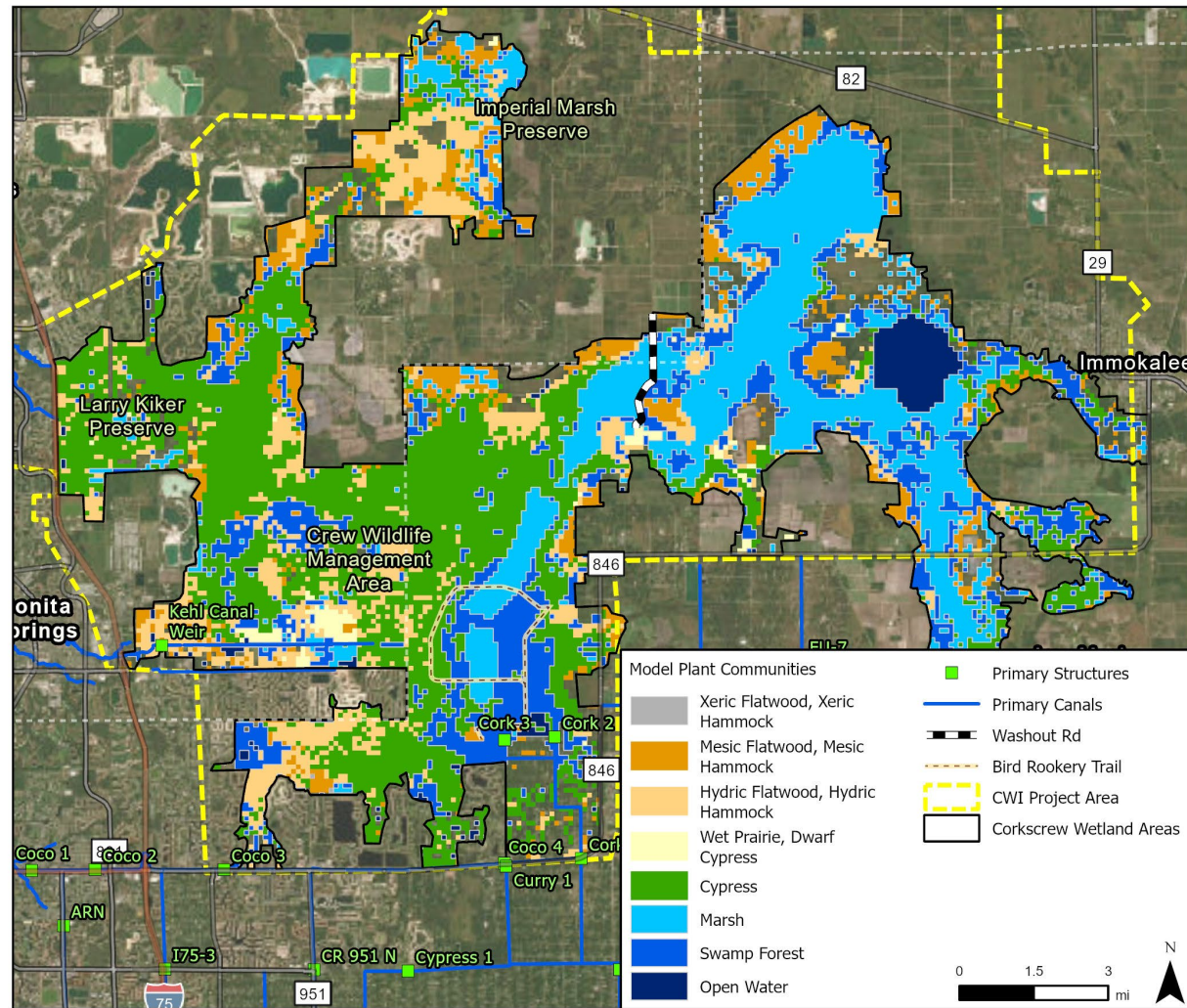
- Results averaged for each of the 5 years (2015-2020), focusing on:
 - Hydroperiod
 - Wet season median water depth
 - Dry season low (10%) water depth
- Results include maps of hydrologic changes and suitable habitats



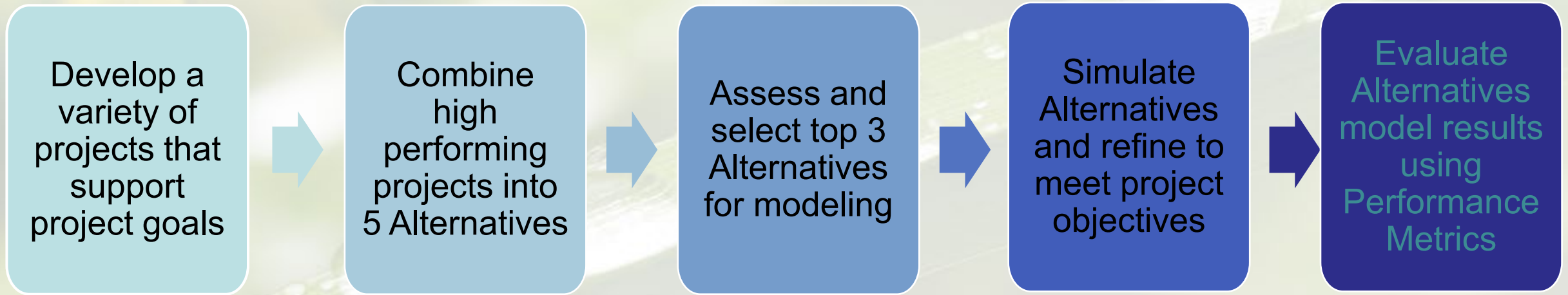


Land use source:
Existing Conditions Model, SFWMD 2014–2016 land use

Need for Restoration – Future Conditions Do Not Maintain Native Plant Communities



Alternative Development and Evaluation Process



Project 1: Washout Road Culvert Improvements

Project 2: Restoration of Former Fish Farm

Project 3: Bird Rookery Trail Berm

Project 4: Shady Hollow Boulevard Berm

Project 5: Corkscrew Canal Gate and Berm

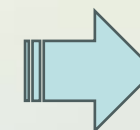
Project 6: Former Agricultural Area Restoration

Project 7: Kehl Canal Berm

Project 9: Kiker Preserve Berm Extension

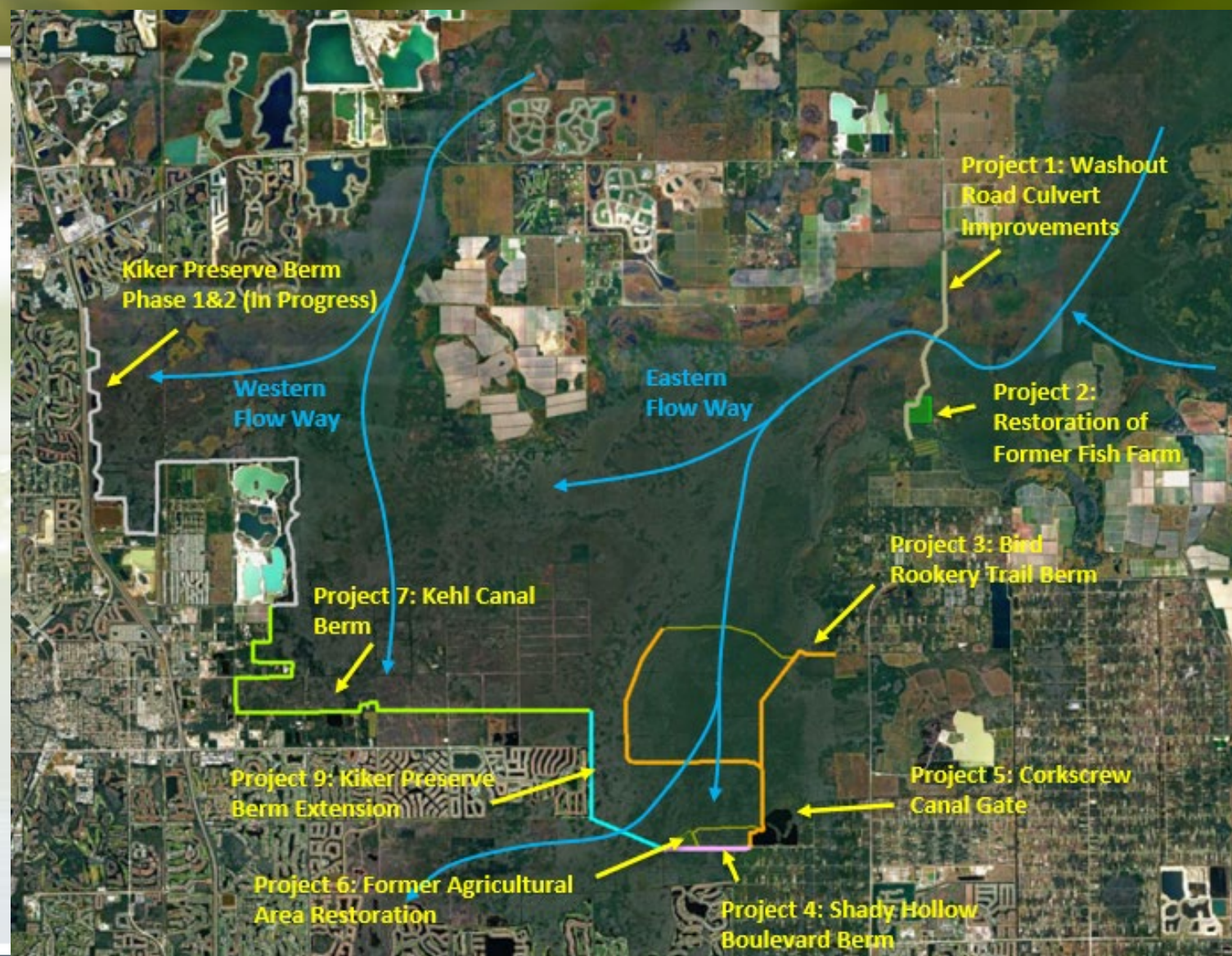


5 Alternatives



**Model Top 3 based
on Project Matrix**
Alternatives 1, 3, and 4
were modeled

CWI Project Locations



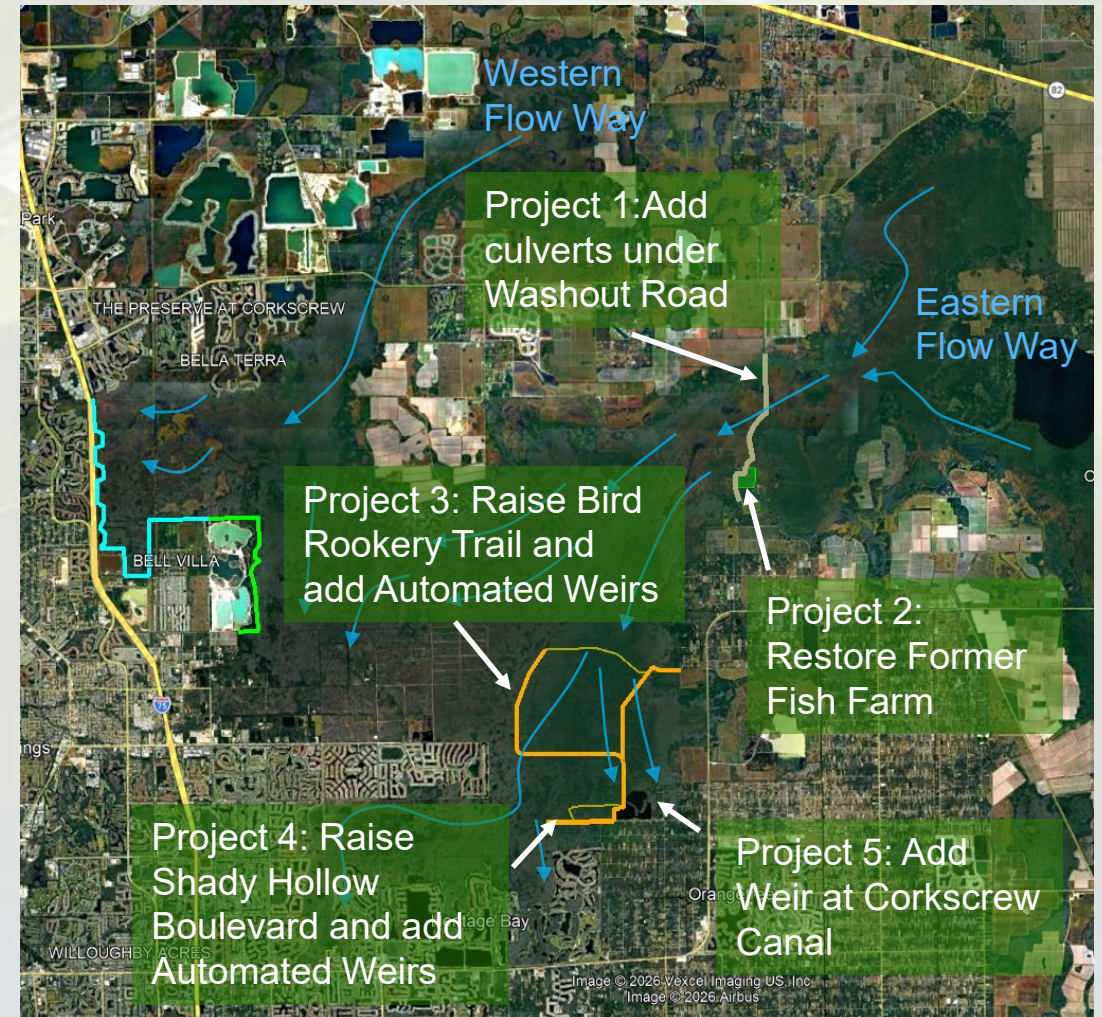
Restoration Projects and Modeled Alternatives

Projects	Entity Responsible	Timing	Alternative 1	Alternative 3	Alternative 4
Project 1: Washout Road Culvert Improvements	Audubon/Corkscrew Swamp Sanctuary	Short-term	X		X
Project 2: Restoration of Former Fish Farm	Audubon/Corkscrew Swamp Sanctuary	Short-term	X	X	X
Project 3: Bird Rookery Trail Berm	South Florida Water Management District	Short-term	X	X	X
Project 4: Shady Hollow Boulevard Berm	South Florida Water Management District	Long-term	X	X	X
Project 5: Corkscrew Canal Berm	South Florida Water Management District	Long-term	X	X	X
Project 6: Former Agricultural Area Restoration	Collier County	Short-term			X
Project 7: Kehl Canal Berm	Lee County	Long-term		X	X
Project 9: Kiker Preserve Berm Extension	South Florida Water Management District	Long-term		X	

Projects Included in Alternative 1

➤ Overview: Focuses on the Eastern Flow Way

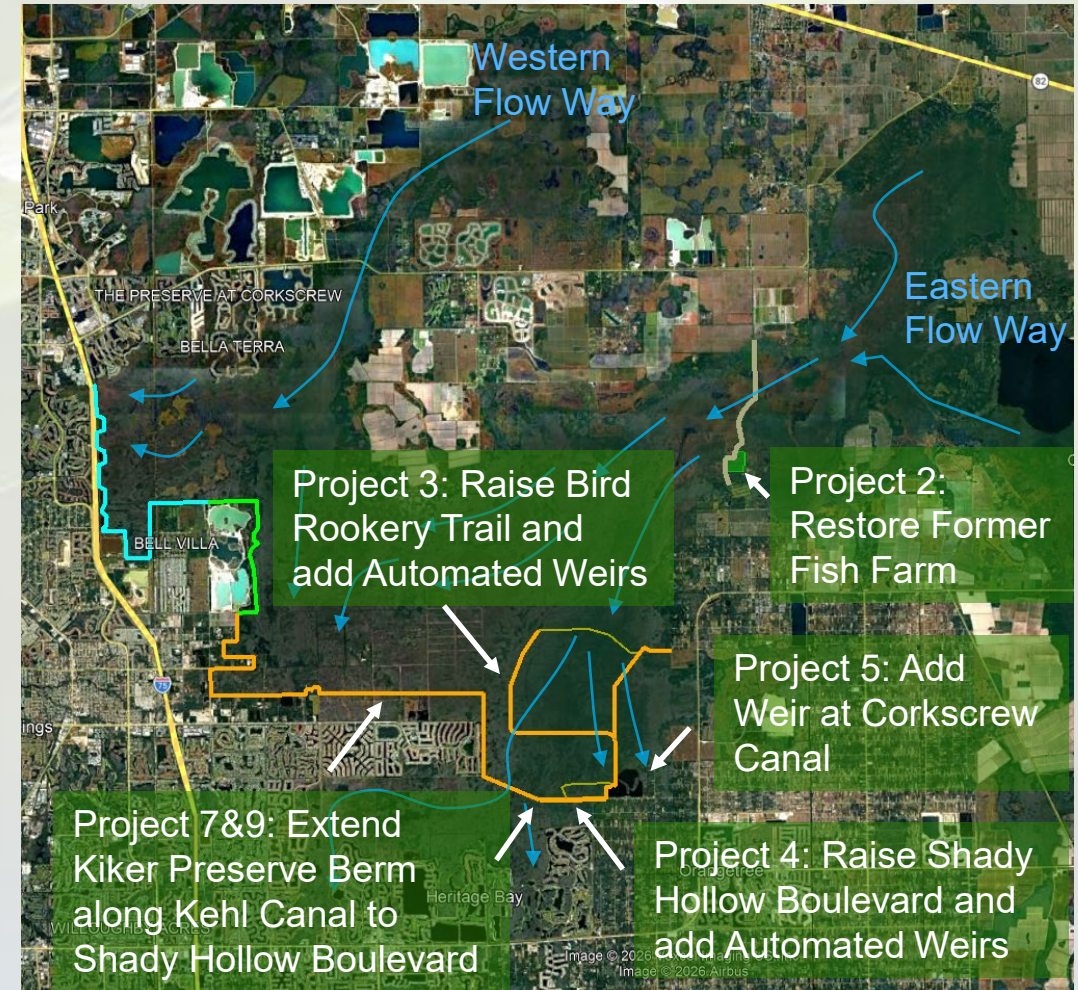
- Improves flow from north to south at Washout Road and the Former Fish Farm
- Improves hydrology in Bird Rookery using existing trail
- Improve surface water retention north of Shady Hollow Boulevard by raising the road
- 9 miles of berm, 7 operable structures



Projects Included in Alternative 3

➤ Overview: Focuses on the Eastern and Western Flow Ways

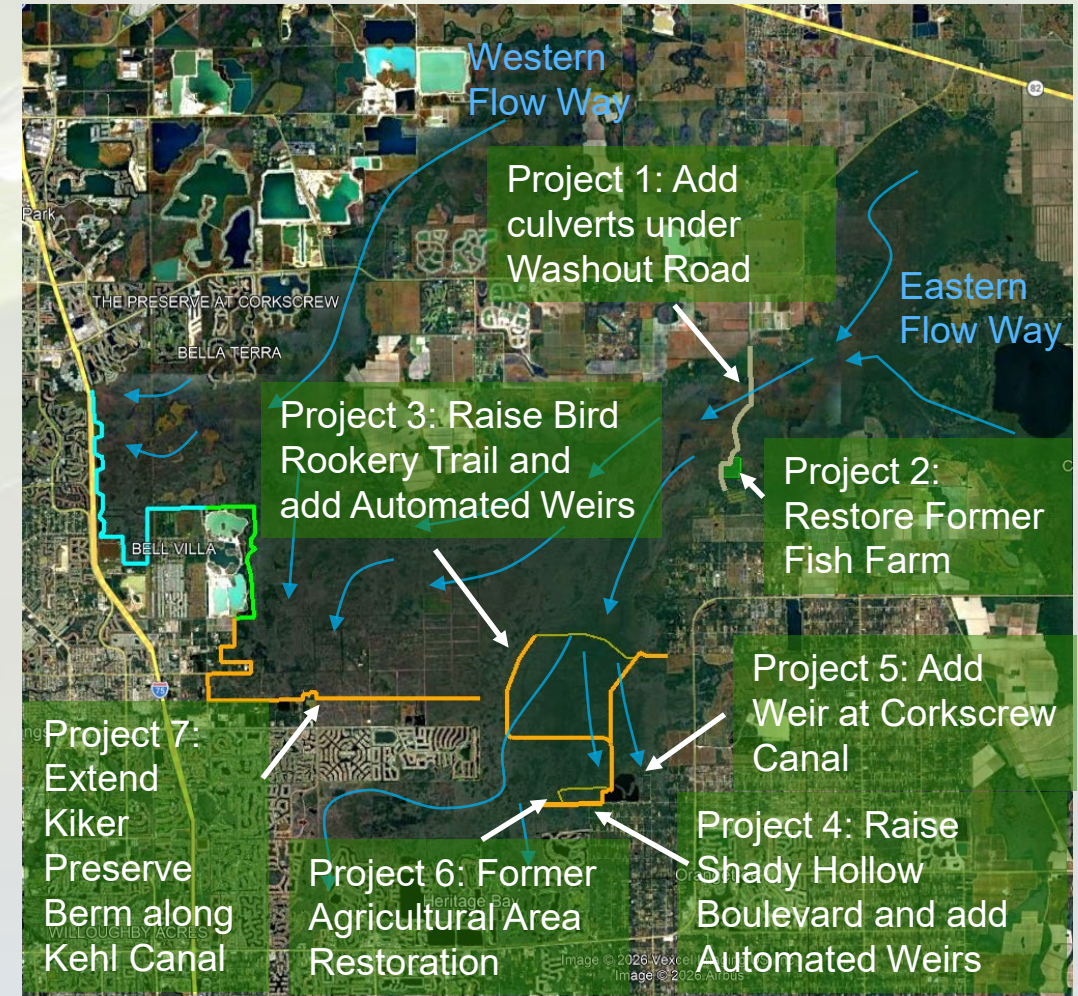
- Improves flow from north to south
- Improves hydrology in Bird Rookery
- Improves surface water retention north at Shady Hollow Boulevard
- Improve surface water retention north of Kehl Canal
- Results in a continuous berm
- 20.3 miles of berm, 15 operable structures



Projects Included in Alternative 4

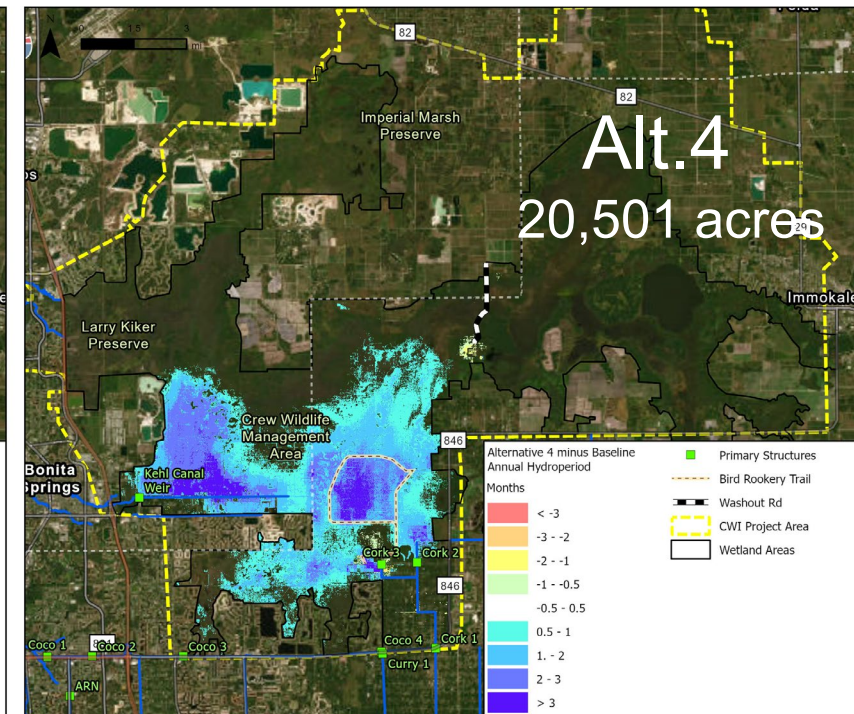
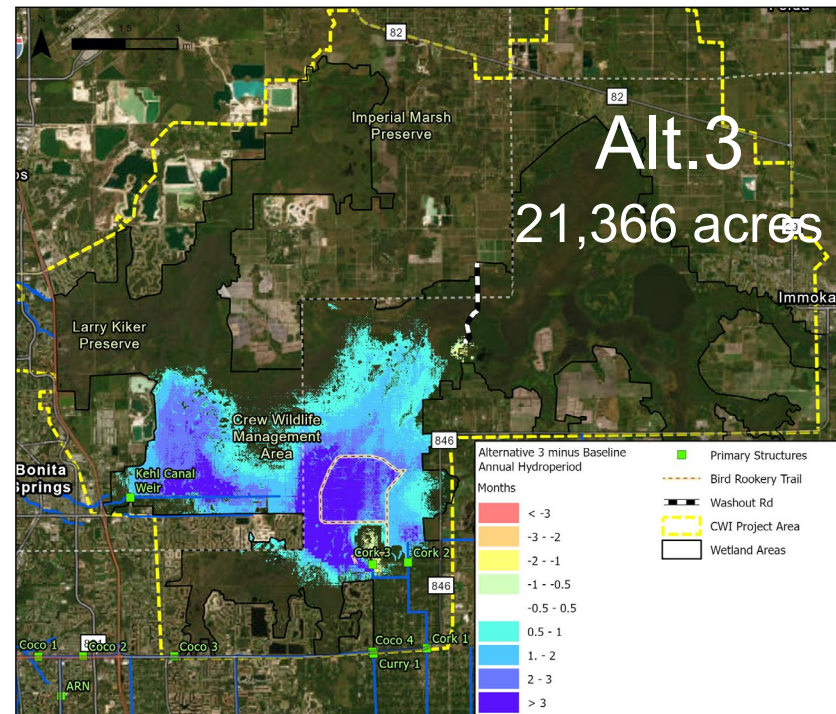
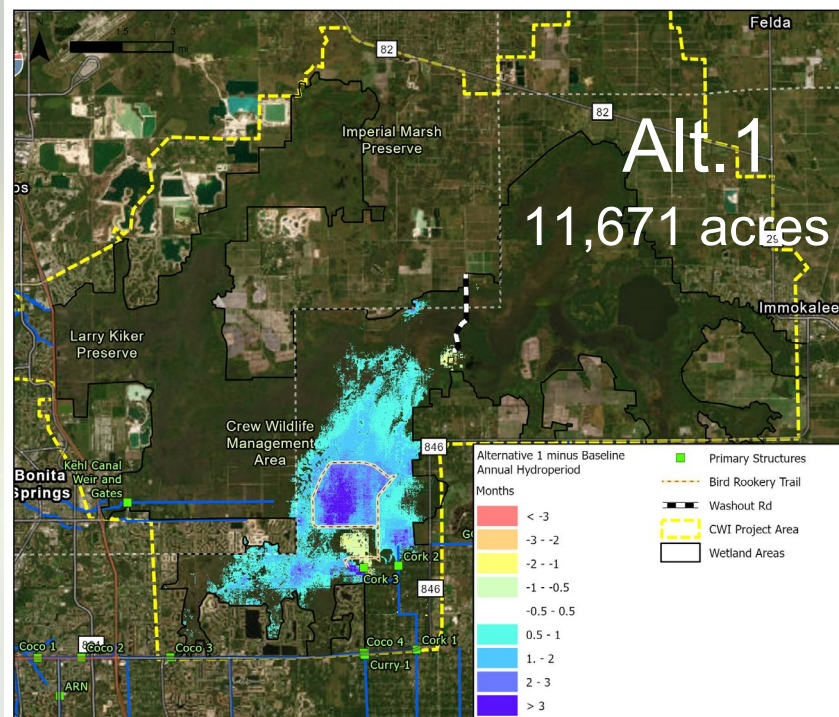
➤ Overview: Focuses on the Eastern and Western Flow Ways

- Improves flow from north to south
- Improves hydrology in Bird Rookery
- Improves surface water retention at Shady Hollow Boulevard
- Improves surface water retention at Kehl Canal
- 17.7 miles of berm, 12 operable structures



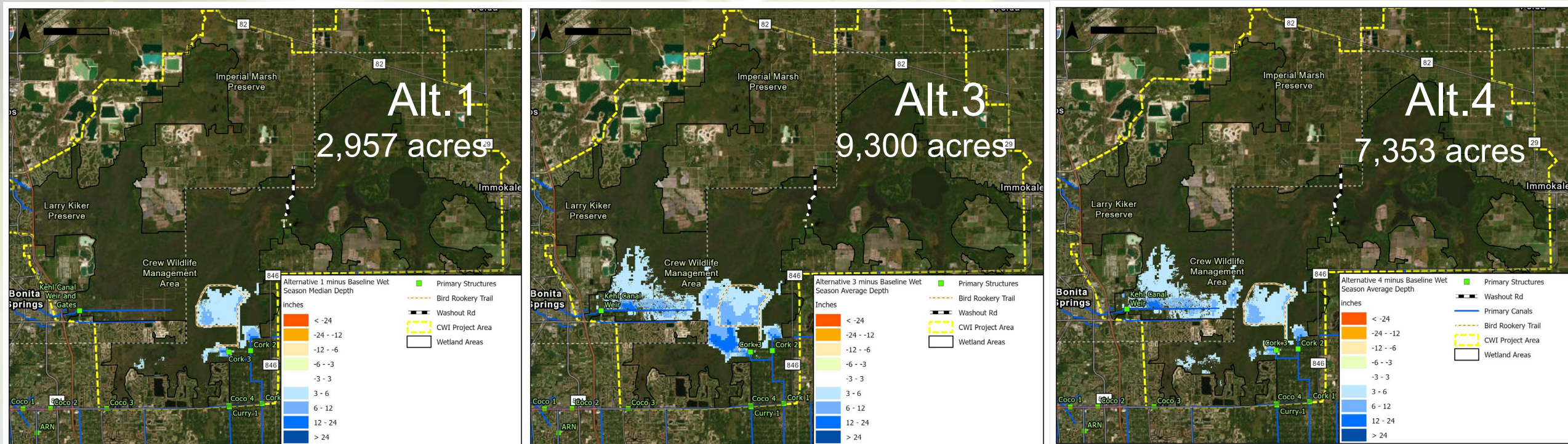
Alternative Model Results – Hydroperiod

➤ Hydroperiod differences with Projects



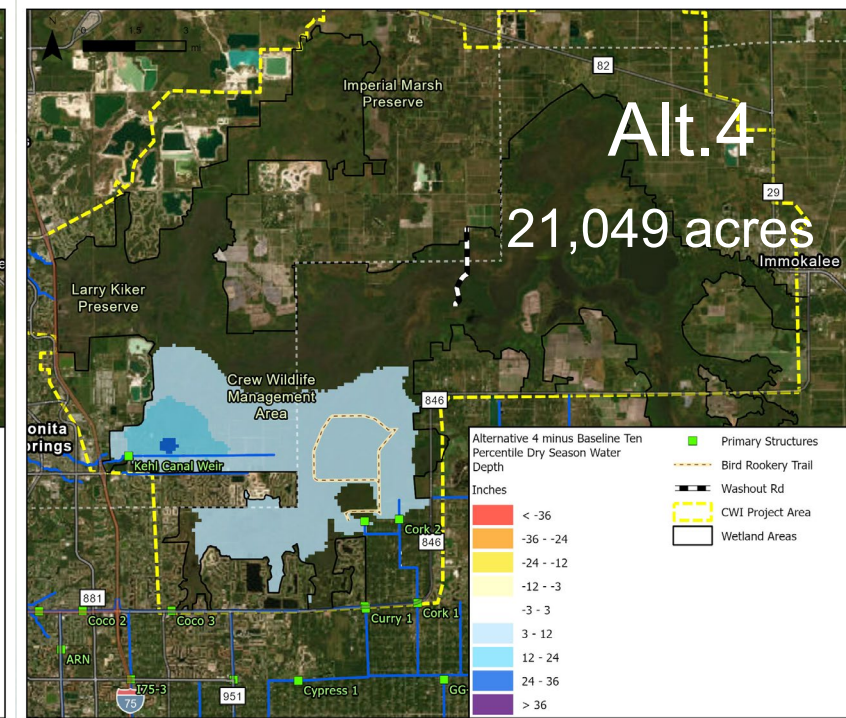
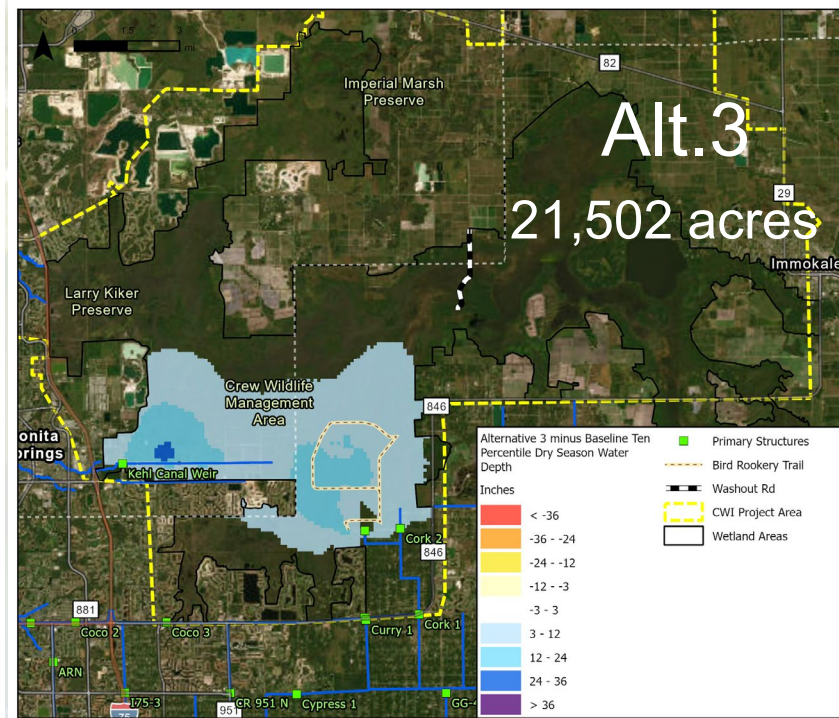
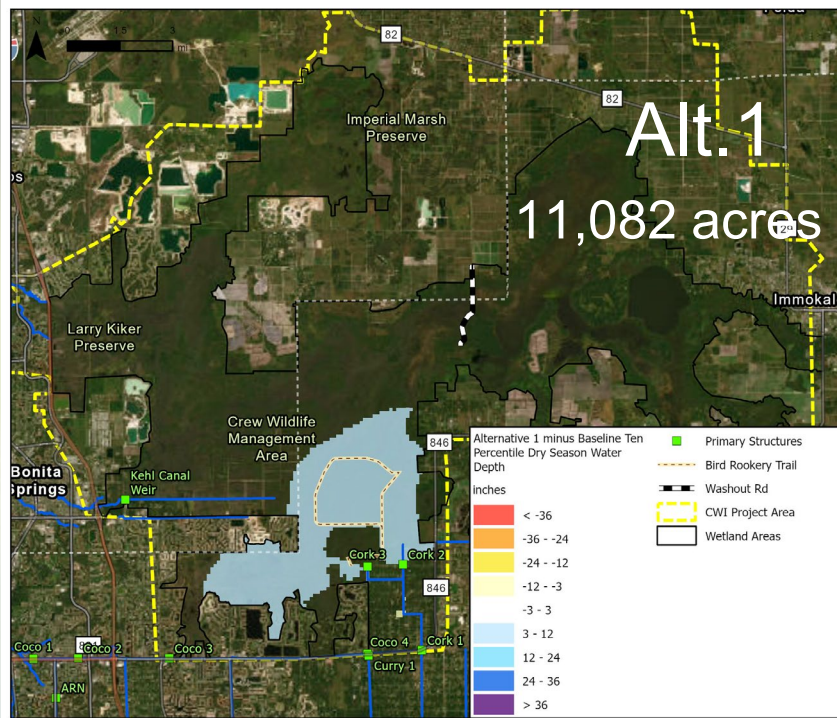
Alternative Model Results – Wet Season

➤ Wet season water depth differences with Projects



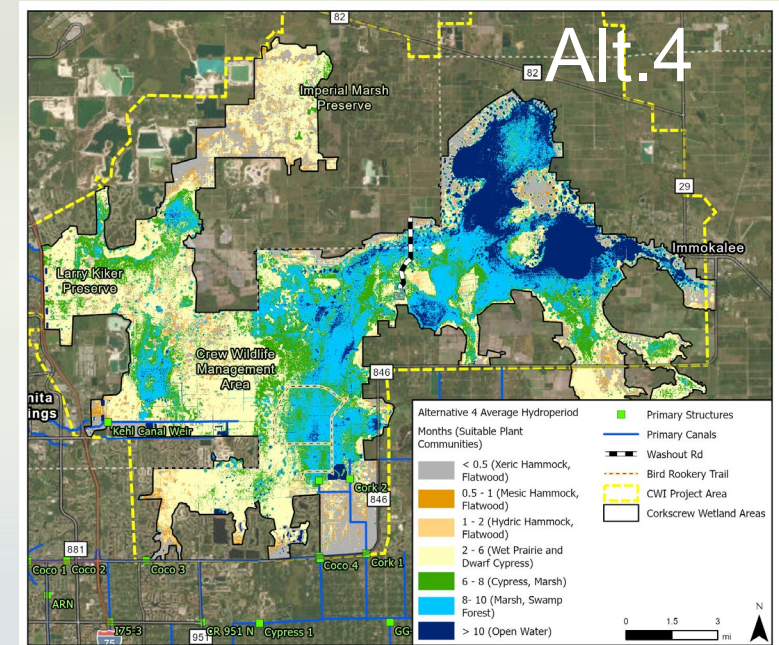
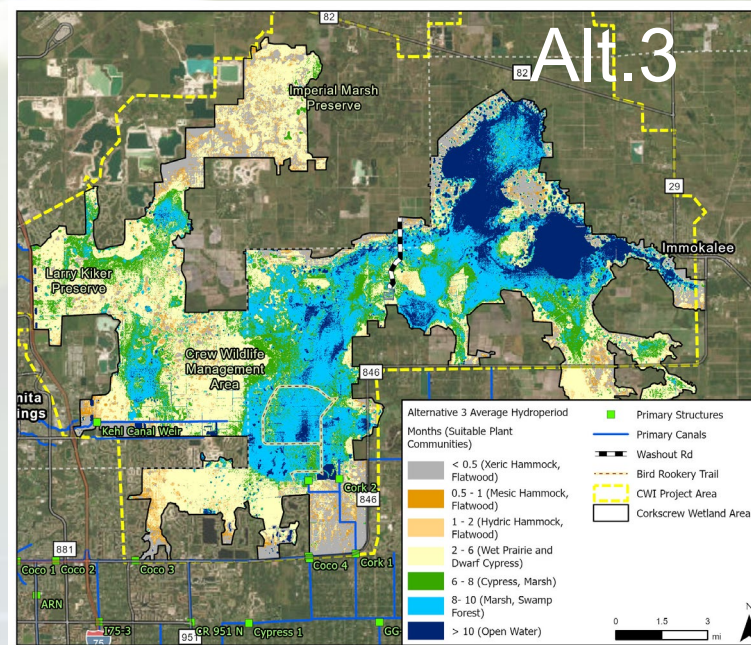
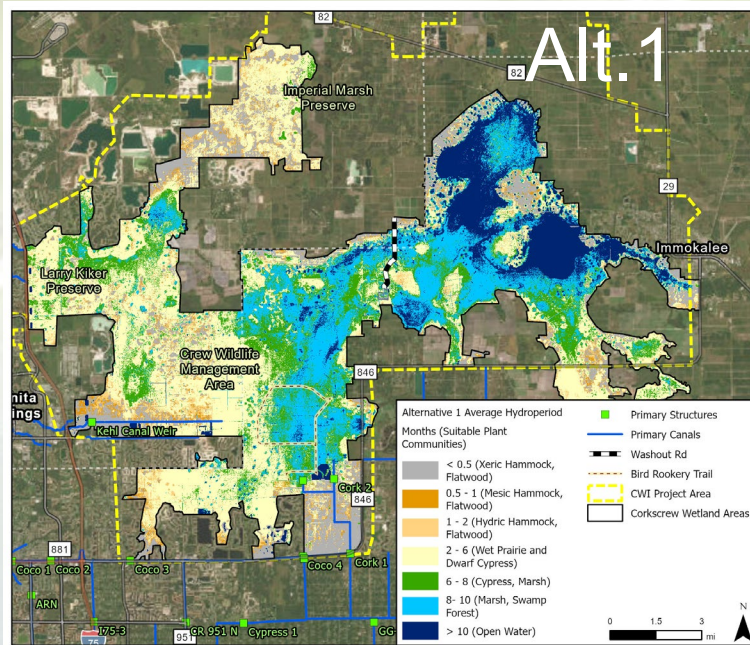
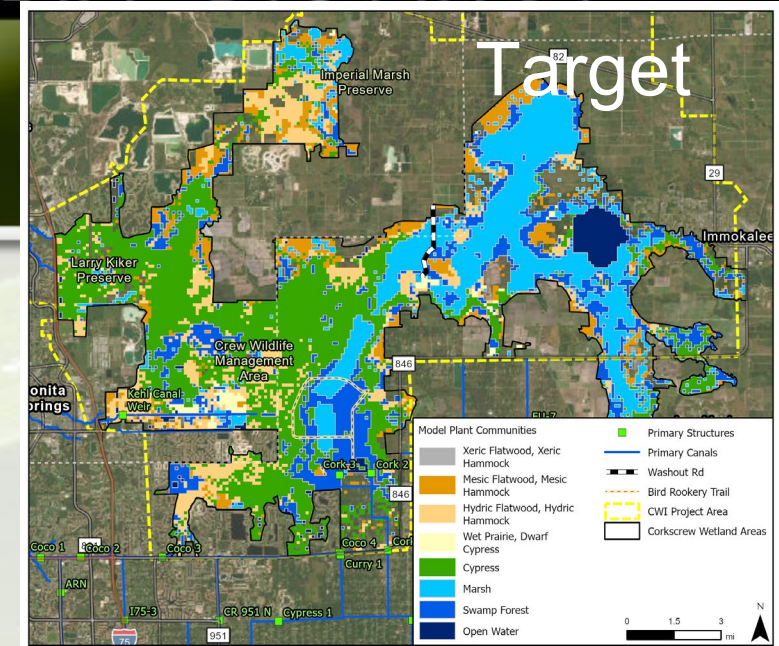
Alternative Model Results – Dry Season

- Dry season low (10%) water depth differences with Projects



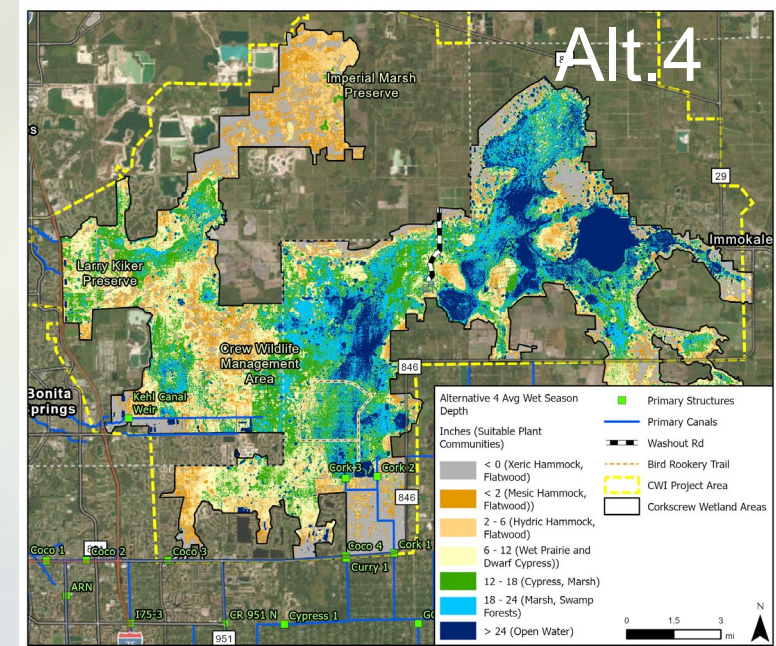
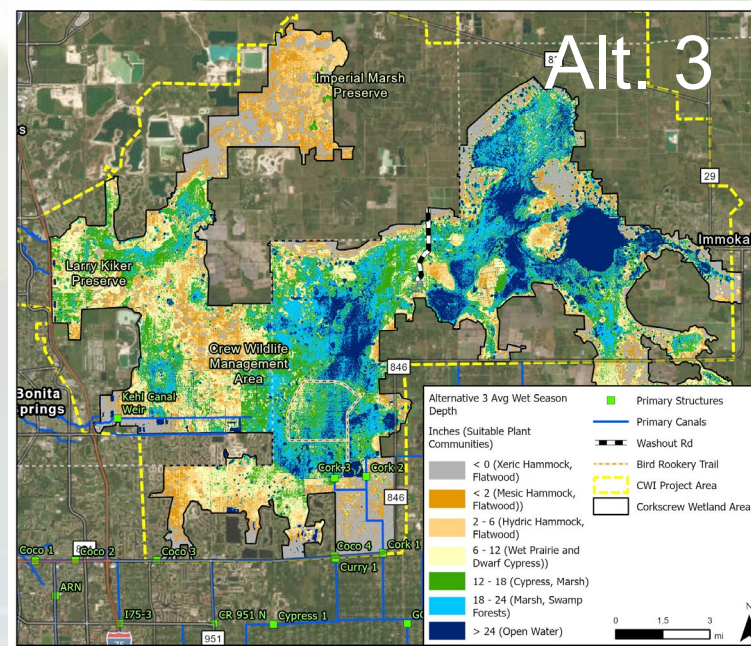
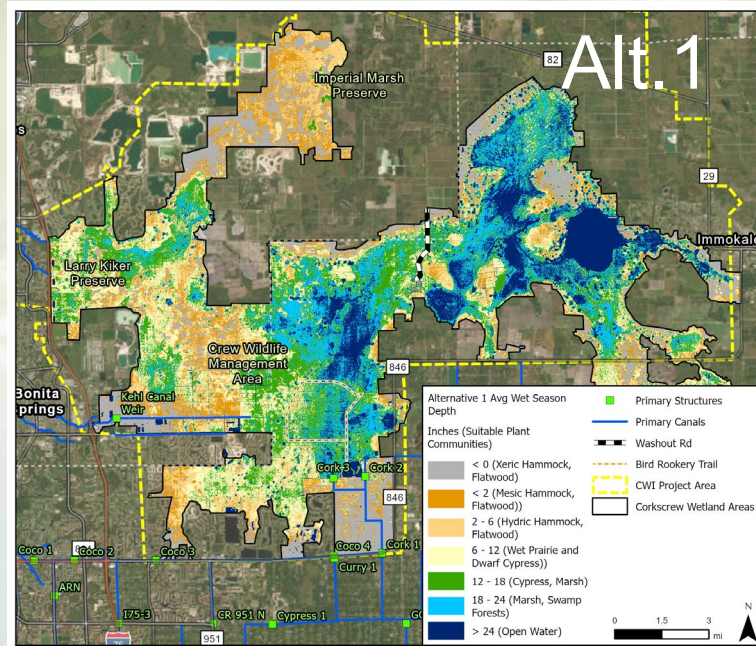
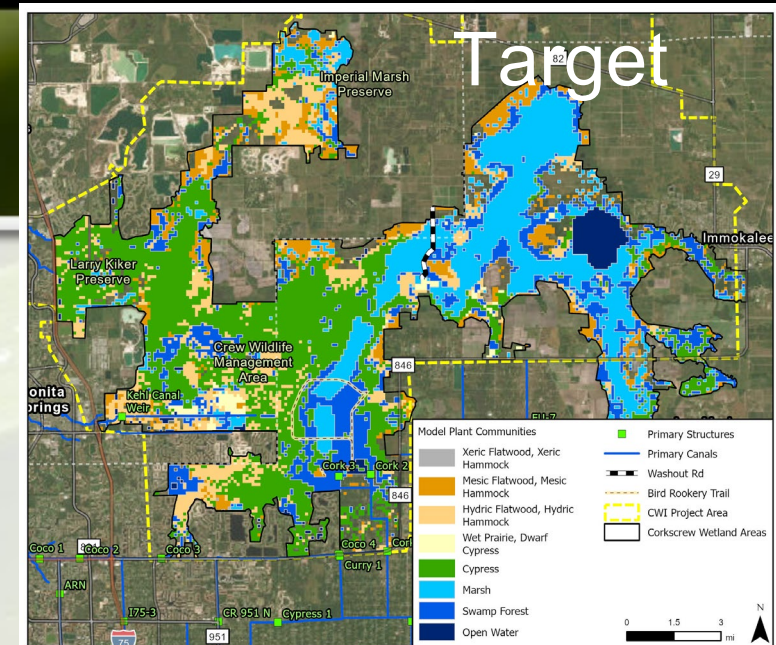
Alternative Model Results – Hydroperiod

- Suitable plant communities based on hydroperiod



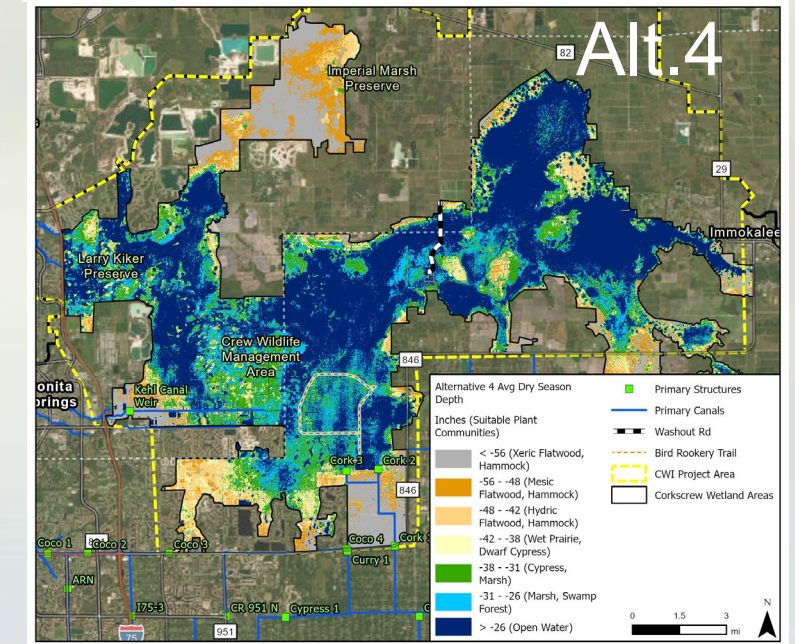
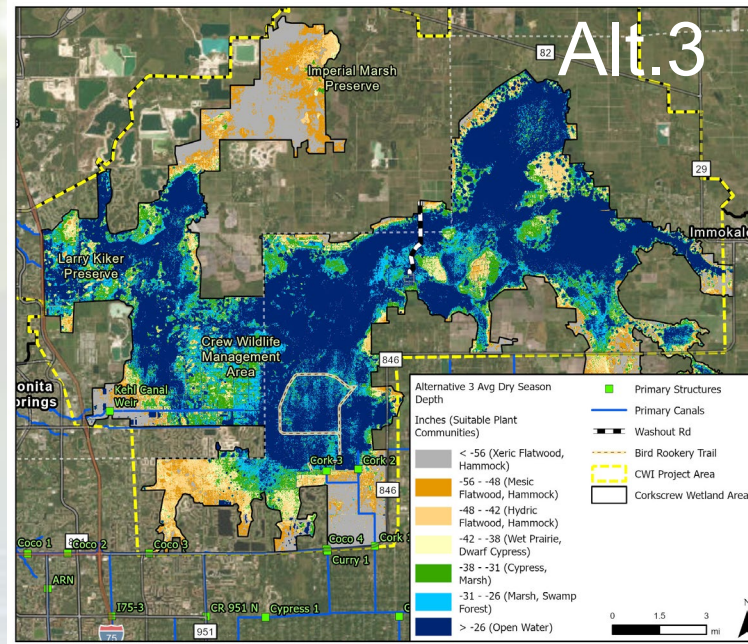
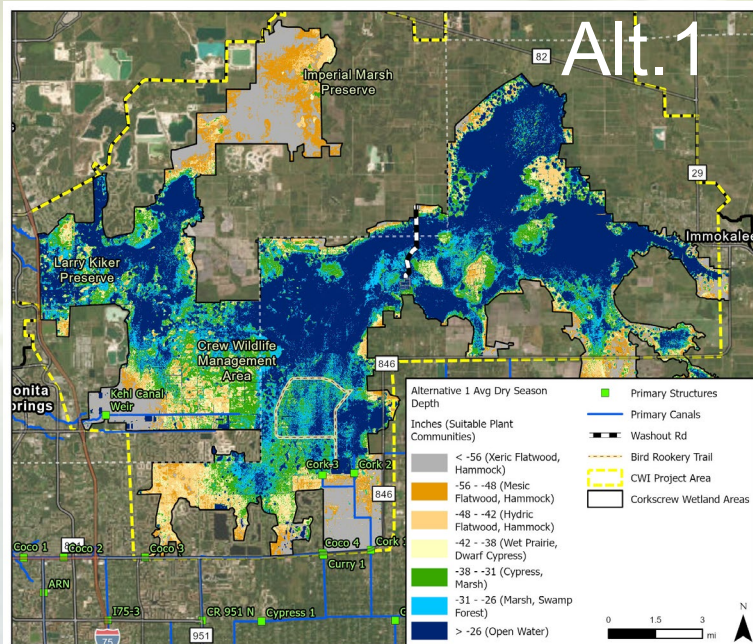
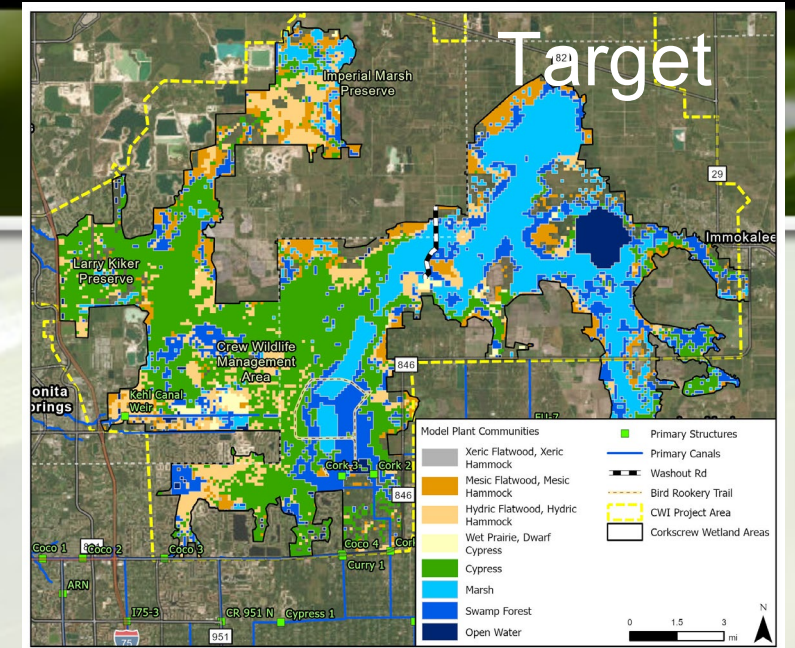
Alternative Model Results – Wet Season Water Level

- Suitable plant communities based on wet season median water level



Alternative Model Results – Dry Season Low Water Level

- Suitable plant communities based on dry season low water level





Alternatives Evaluation

Hydrologic Restoration of Wetlands Results

- Saltwater intrusion – Evaluate changes in modeled flows at **tidal structures** and changes in **coastal wellfields**
- Sheet flow – Evaluate changes in modeled **overland flow** versus channelized flow
- Water depth target – Compare **wet season** model results to target plant community water levels
- Dry season water levels – Compare **dry season** model results to target plant community water levels
- Hydroperiod – Compare **hydroperiod** model results to target plant community reference water levels

Each Alternative scored about the same, gains from increased area of influence were offset by conditions becoming too wet.

Habitat Restoration of Wetlands Results

- Vegetative community – Calculate changes in freshwater marsh areas that are **accessible for mechanical vegetation control** activities (removal of nuisance Carolina Willow, etc.)
- Wildlife use – Calculate changes in cypress and swamp forest **habitat suitability** for **wood stork**
- Threatened and endangered species – Calculate changes in area suitable for **Florida panther**
- Connectivity – Calculate changes in **contiguous areas** of similar hydroperiods

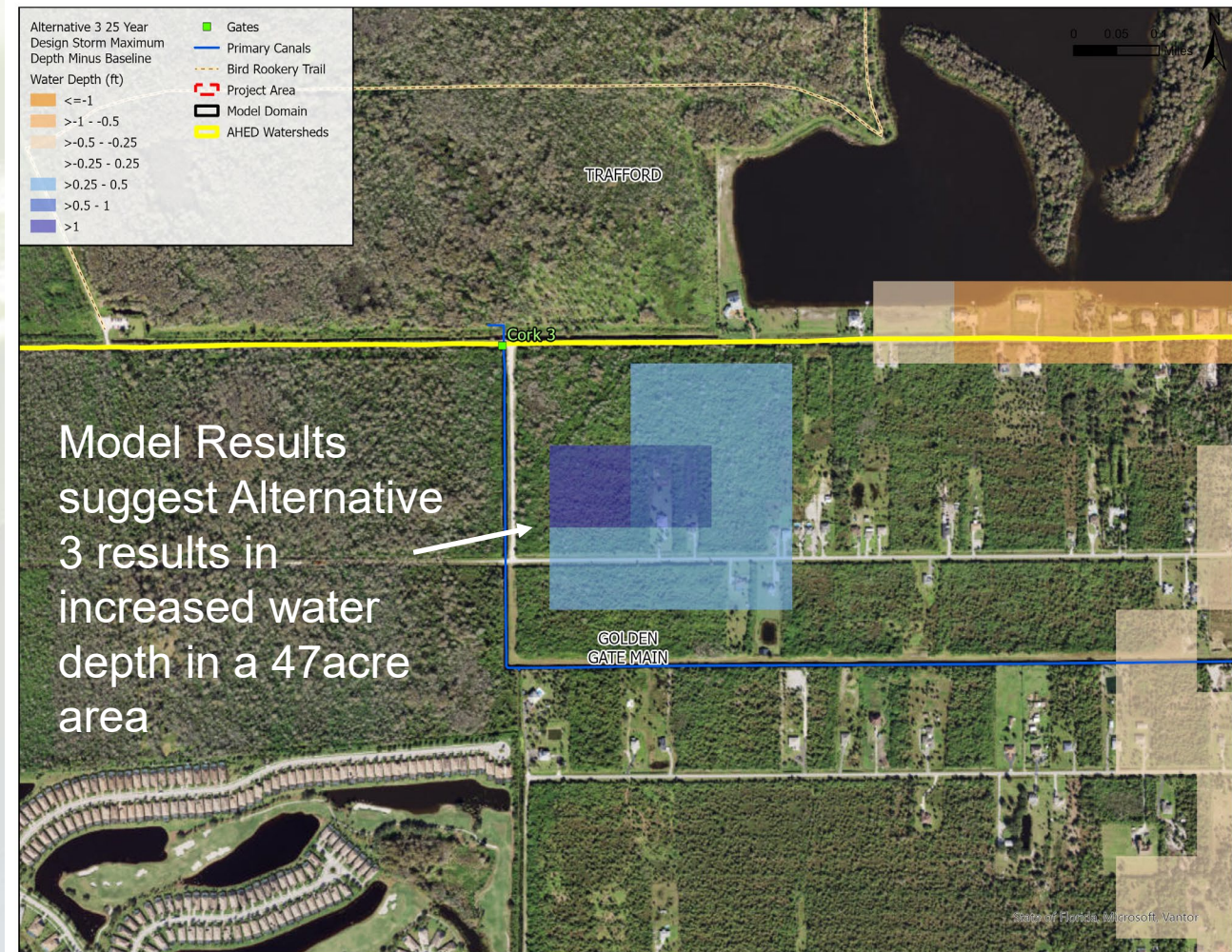
Alternative 3 scored the highest, Alternative 1 scored the lowest resulting from lesser scores for vegetative community and connectivity.

Flood Protection Results

➤ Flood protection:

- **Maximum stages** in primary canals – Based on peak stages at key structures and selected canal profiles
- **Frequency of flooding** – Based on peak stage
- **Duration of flooding** – Based on duration of inundation

Alternatives 1 and 4 scored about the same. Alternative 3 scored the lowest due to a limited flooding issue south of Shady Hollow Boulevard, which the team is working to resolve, and the additional flood risk associated with a system-wide berm (additional analysis is needed).



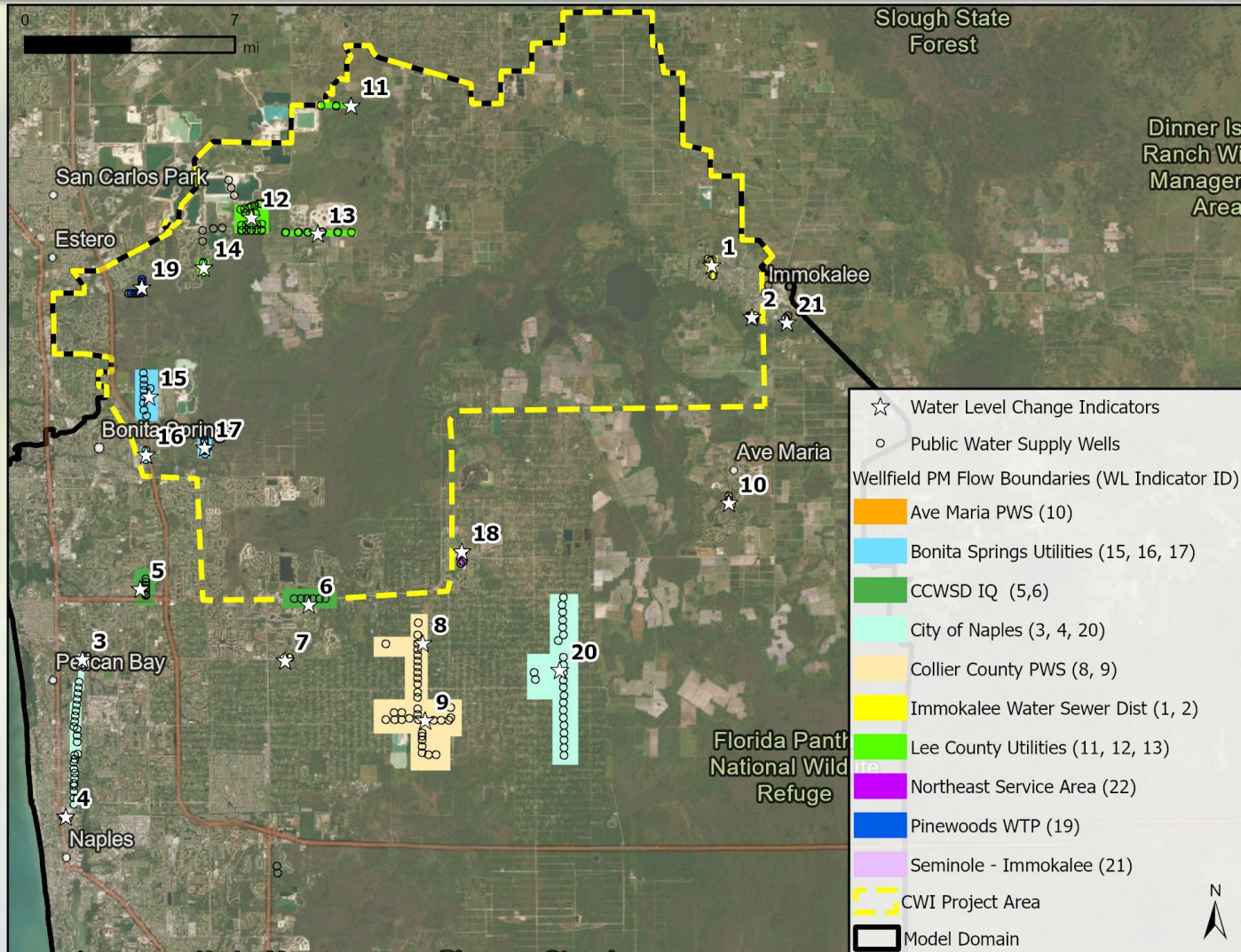
Water Supply Results

➤ Water supply:

- **Dry season water levels** in groundwater wells in the water table, lower Tamiami aquifer, and Sandstone aquifer
- **Average groundwater flows** into wellfield boundaries within the water table, lower Tamiami aquifer, and Sandstone aquifer

Each Alternative scored about the same.

Water Supply Performance Measures



Aquifers Assessed

- Surficial Aquifer, Lower Tamiami Aquifer and Sandstone Aquifer

Aquifer Water Levels with Alternatives

- Minor positive changes in groundwater (aquifer) levels

Groundwater Flow with Alternatives

- Small increases across Collier County Water and Sewer District (CCWSD) wellfield
- Small decreases across Bonita Springs Utilities wellfield

Project Implementation Results

- Construction cost/benefit – Alternative rough order of magnitude cost estimates
- Operation and maintenance (O&M) – Based on miles of berm and number of operable structures included in each Alternative
- Grant funding available – Based on grant opportunities identified
- Short- versus long-term implementation – Acres of land required for acquisition prior to project implementation
- Stakeholder support – Based on input from stakeholders and public
- Ease of implementation – Authority/ownership, funding, policy, protected species and wetland impacts, and permitting complexity

Alternative 1 scored the highest with the lowest cost/benefit and O&M costs and least amount of land acquisition. Alternatives 3 and 4 scored about the same.

Alternative 1 Considerations

- Hydrologic improvements concentrated in Bird Rookery Swamp Area
- More wet season flows directed to the southwest towards the Cocohatchee Canal, upstream of COCO 3
- Reduces flooding in downstream Corkscrew Canal Basin
- Hydrologic and habitat restoration is not as far-reaching as the other Alternatives

Alternative 3 Considerations

- Farthest reaching hydrologic changes within the Corkscrew System
 - Highest wetland water levels and hydroperiods of all three Alternatives
- Greatest improvements to wood stork nesting habitat
- Significant water level changes in western Bird Rookery Swamp and east Flint Pen Strand may:
 - Cause loss of habitat diversity of mesic and hydric pine habitats towards cypress and/or marsh habitats, and
 - Reduce the window prescribed fires can be applied to the landscape
- Most infrastructure-intensive Alternative
 - Most wetland impacts and operational complexity
- Additional flood control considerations for a system-wide berm and higher associated water levels

Alternative 4 Considerations

- Provides hydrologic improvements to a significant area of the Corkscrew System
 - Builds upon the benefits seen in Alternative 1 but not as many acres affected as Alternative 3
- Hydrologic changes (water depths, hydroperiods) not as drastic as in Alternative 3
 - Not as much risk for over-inundating short hydroperiod habitats and affecting prescribed burn window
- Reduces flooding in downstream Corkscrew Canal Basin

Takeaways

- Each of projects identified provide improved hydrology and support habitat restoration
- Any one of the projects, except project 9, could be implemented alone or in combination with others
- Project 1 and 2 and provide some relief of very wet conditions in the Corkscrew Marsh and provide restoration benefits
- Projects 3, 4 and 5 work well together within the area of the Bird Rookery each focuses on a separate area but combined enhance the effectiveness of each area

Goal
Hydrologic Restoration of Wetlands
Habitat Restoration
Flood Protection
Water Supply
Project Implementation

Takeaways

- Project 7 provides significant benefit in the western flow way. However, there is relatively little interaction between the eastern and western flow ways in the absence of Project 9
- Project 9 is better able to bridge the eastern and western flow ways but downstream conditions are almost too wet for the targeted plant communities and presents higher risk
- None of the alternatives will impact water supply, and Alt 3 is being further refined to resolve potential increased flooding
- Projects 7 and 9 will be challenging to implement and operations may be limited pending land encumbrances

Goal
Hydrologic Restoration of Wetlands
Habitat Restoration
Flood Protection
Water Supply
Project Implementation

Plan selection is pending further input and modeling results.

Next Steps

- Final CWI Alternatives Model Report
- October Big Cypress Basin Board Presentation
- Final Project Report and Conceptual Design Plans





Questions and Public Comment

Questions?

Zoom Instructions:

- Use Raise Hand Feature and we will call on you

Phone Instructions:

- Use Star 9 (*9) to raise your hand
- Use Star 6 (*6) to unmute



Public Comment

Zoom Instructions:

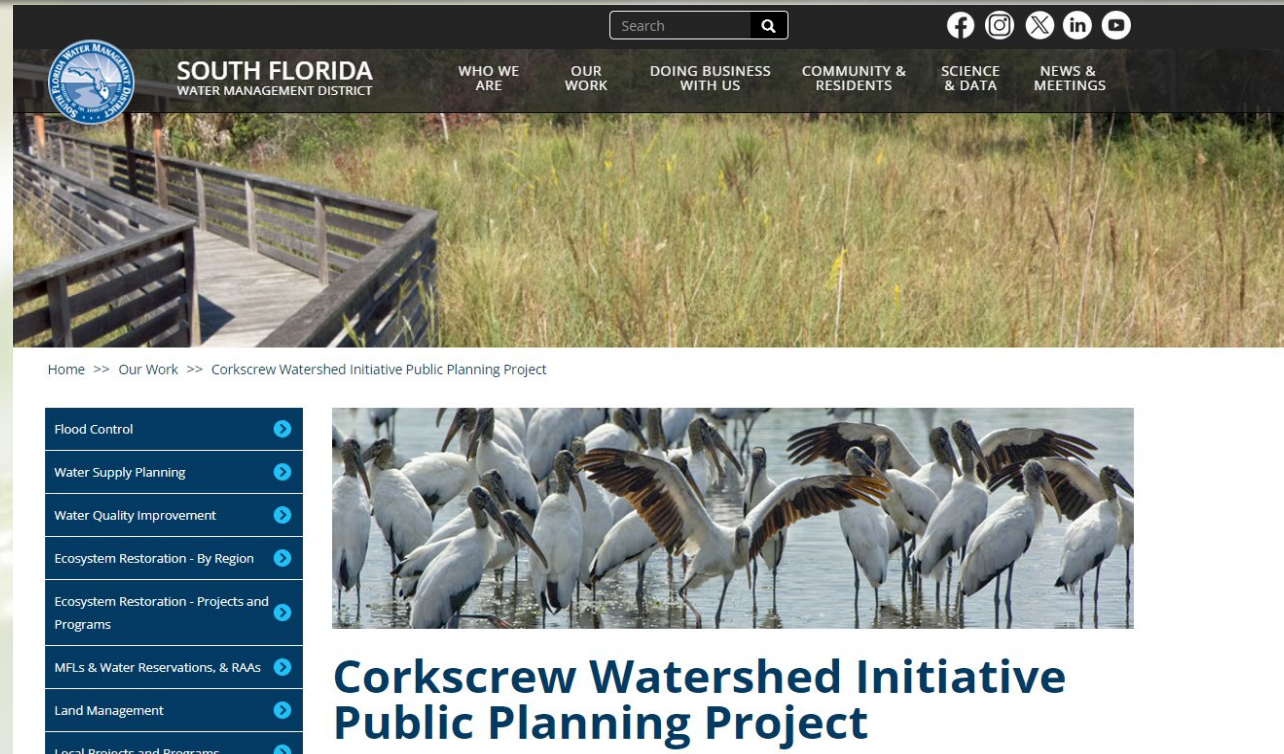
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Public Website, Email Address



Website: SFWMD.gov/Corkscrew

Email: CorkscrewWatershedInitiative@sfwmd.gov

Statewide Model Management System: [Statewide Model Management System \(SMMS\) | South Florida Water Management District](#)