Big Cypress Basin Board Meeting:

Big Cypress Basin Boundary Modification

February 25, 2021

Jeff Iudicello, Ph.D., P.E., Lead Engineer, H&H

DRAFT

Introduction

- Florida Chapter 2020-111, House Bill No. 5001:

  The South Florida Water Management District shall conduct a study to recommend the most appropriate geographic boundaries of the Big Cypress Basin. The proposed boundaries shall be based solely upon the common watershed within the Big Cypress Basin and must be scientifically supported. The completed study and recommendations must be submitted to the Governor, the President of the Senate, and the Speaker of the House of Representatives by February 1, 2021.

- Summary:
  - District to examine BCB watershed boundaries, propose revisions as needed
  - Implement a scientifically supported approach
  - Submit to State authorities in Tallahassee by Feb. 1, 2021

Science-Based Watershed Delineation

- Divides regional land areas into smaller units or watersheds *based on physical laws*
- Considers the actual environmental features of a landscape
- Land elevation is a key factor defining runoff from rainfall
- Other physical factors:
  - Land use
  - Man-made improvements to drainage features
  - Animal habitats
  - Subsurface properties of aquifers

Science-Based Watershed Delineation

- Based on measurements of physical properties
- Would be repeatable and verifiable by independent observation
- Considers a variety of sources of information

- Contrasting approaches may use political or legal factors to establish boundaries
  - Administrative boundaries (e.g. County lines)
  - Landowner property limits

Delineation Methodology

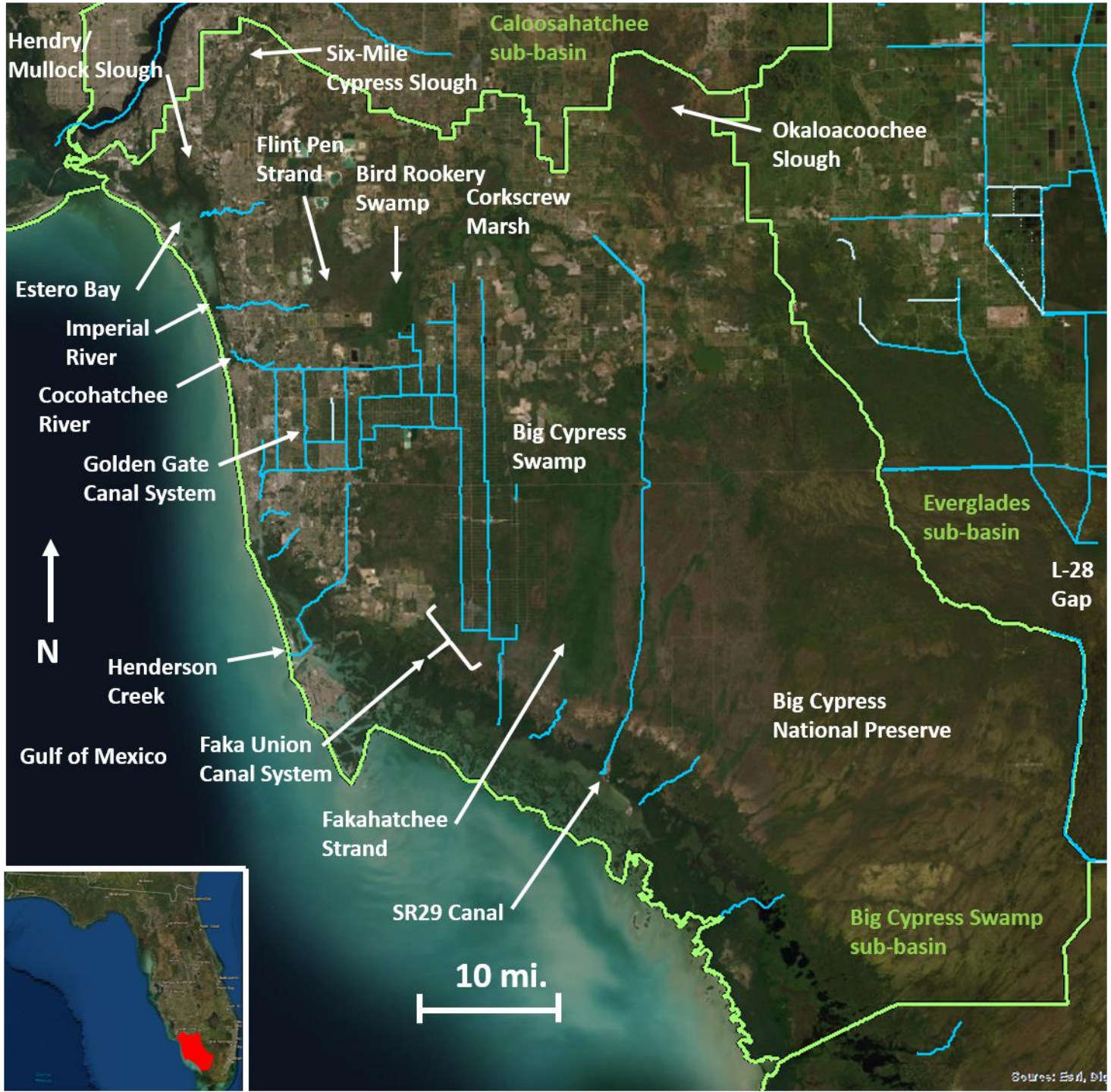
- Step 1: Review current catchment boundaries
  - Use Geographic Information Systems (GIS) to overlay existing boundary maps and coverages
- Step 2: Evaluate the topography
  - Use digital elevation data in GIS to compare high/low landscape elevations with catchment boundaries
- Step 3: Examine aerial photography
  - Survey old and new satellite imagery, flyover pictures, etc., to assess current and historical land use, natural drainage features, and man-made drainage modifications
- Step 4: Review road maps
  - Roads are typically constructed on higher land surfaces but may have bridges, culverts, and/or ditches that affect drainage

Delineation Methodology

- Step 5: Conduct a field visit
  - On-site reconnaissance will help confirm drainage patterns and features
- Step 6: Review permits
  - Regulatory actions and authorized permits (e.g. ERPs) will describe drainage patterns and modifications resulting from permitted projects
- Step 7: Review soil maps
  - A valuable secondary source of info on land use, vegetation, and subsurface hydrology
- Step 8: Review other historical documents
  - Old county road maps, USGS quad sheets, etc., may provide additional useful info
- Step 9: Distribute proposed delineation for review
  - Seek additional review from subject matter experts.

Definition of Terms

- Definitions from District's ArcHydro Enhanced Database (AHED)
- AHED District totals, from largest to smallest:
  - Basin – 4
  - Sub-basin – 12
    - Note: Big Cypress Swamp is a sub-basin
  - Watershed – 227
  - Sub-watershed - 633
- Earlier drainage studies or projects in other areas of the District may follow other definitions



- Key sub-basin items:
  - Neighboring sub-basins
  - Natural hydrologic features
  - Natural & man-made waterways

A. Iona Drainage District

B. Whiskey Creek

C. Old Ft. Myers Wellfield

D. SR82 Corridor

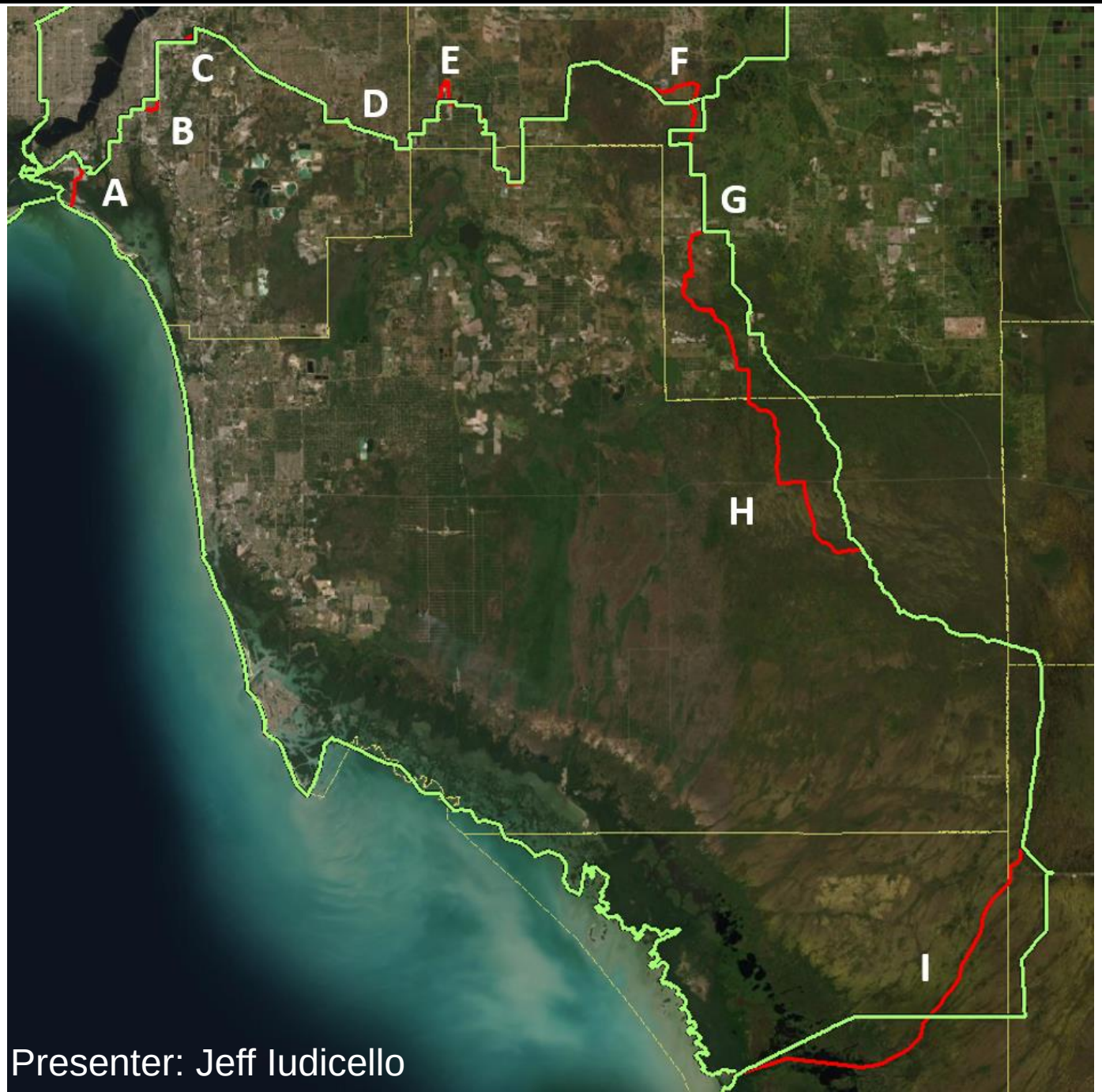
E. Upper Corkscrew Swamp

F. Okaloacoochee Slough

G. CR846 & CR858

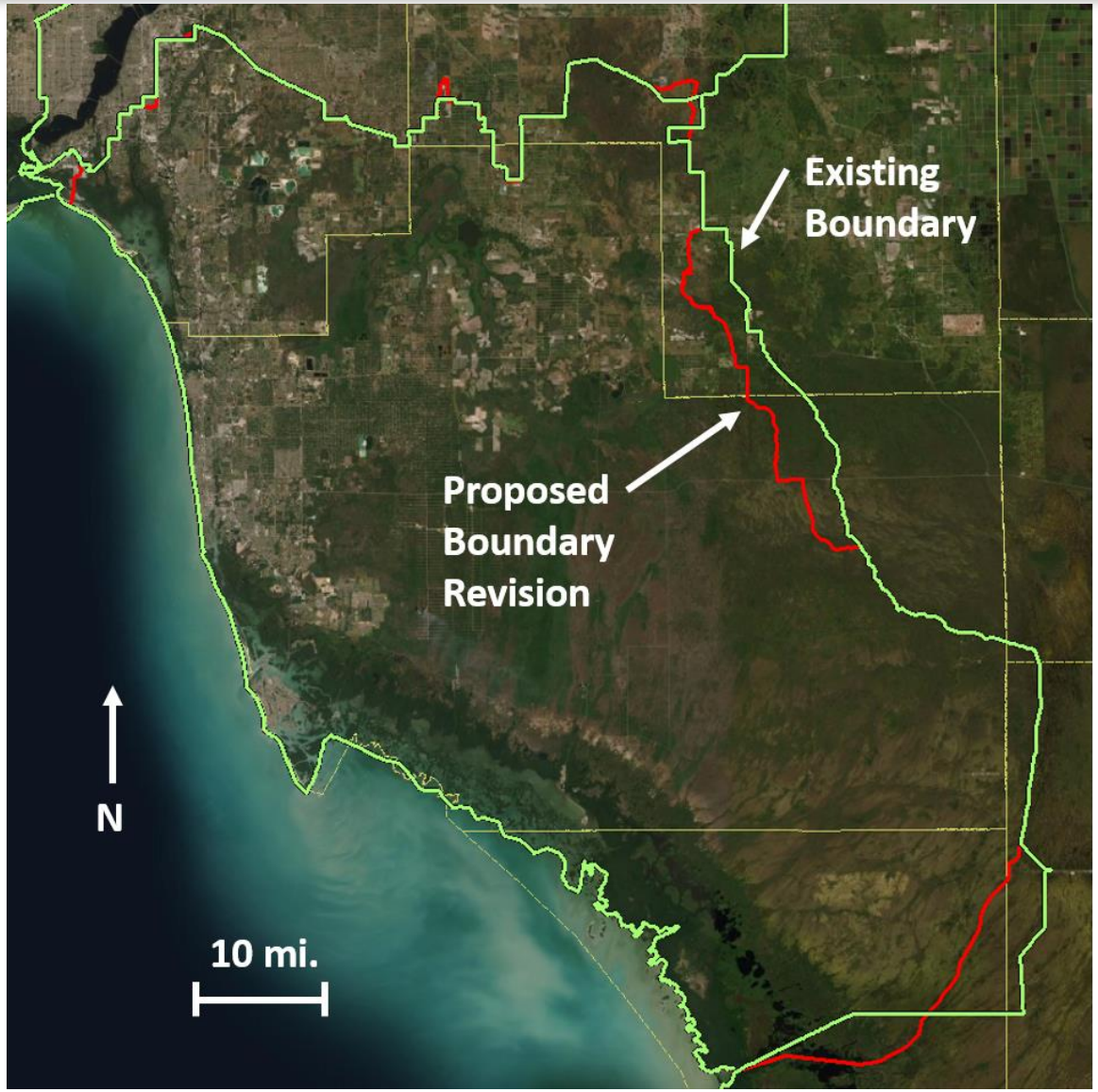
H. L-28 Gap Boundary

I. Coastal Sloughs



Presenter: Jeff Iudicello

Products



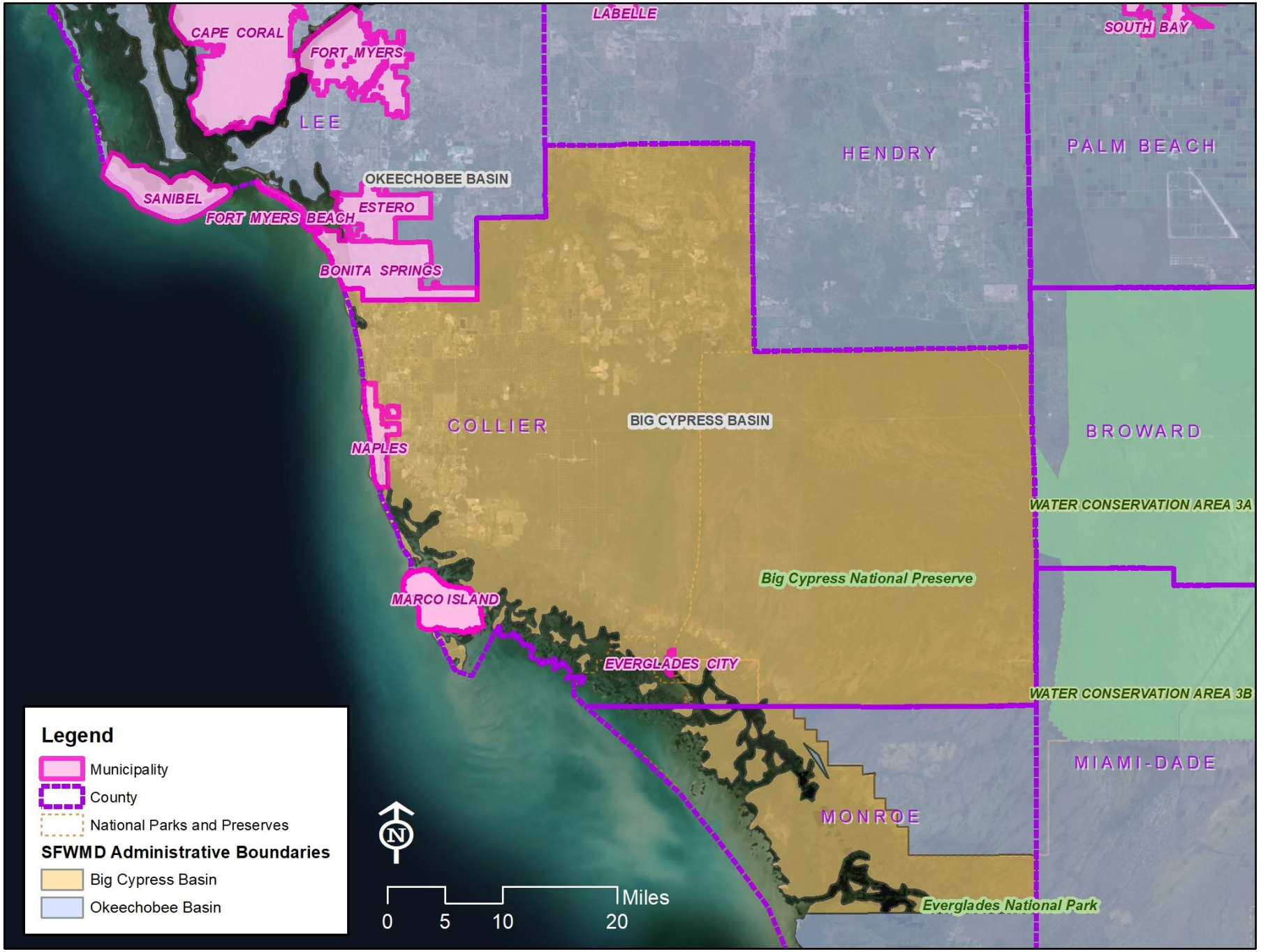
Big Cypress Basin (BCB)
Boundary Delineation

South Florida Water Management District

Hydrology and Hydraulics Bureau

December 2020

Presenter: Jeff Iudicello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PALM BEACH
OKEECHOBEE BASIN
SANIBEL
ESTERO
FORT MYERS BEACH
BONITA SPRINGS
COLLIER
BIG CYPRESS BASIN
NAPLES
BROWARD
WATER CONSERVATION AREA 3A
Big Cypress National Preserve
MARCO ISLAND
EVERGLADES CITY
WATER CONSERVATION AREA 3B
MIAMI-DADE
MONROE
Everglades National Park
Legend
Municipality
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National Parks and Preserves
SFWMD Administrative Boundaries
Big Cypress Basin
Okeechobee Basin
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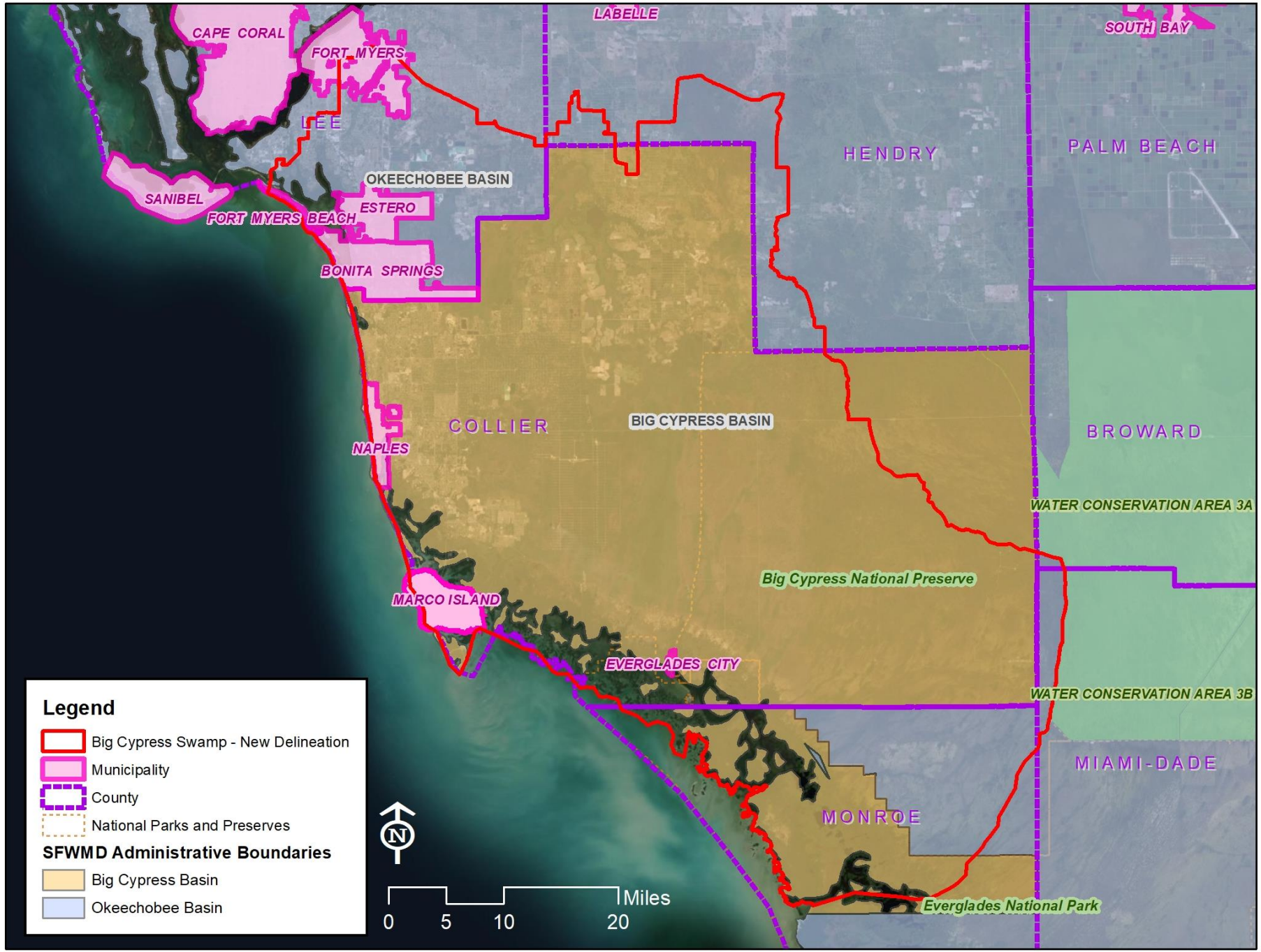
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Everglades National Park
Legend
Big Cypress Swamp - New Delineation
Municipality
County
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Results

- The proposed map is the final product to address HB No. 5001
- Developed from District expertise, GIS data, permitting knowledge, etc.
- Consulted with Ft. Myers Service Center staff and BCNP
- Reviewed by District Bureaus:
  - Water Use, Water Supply
  - Applied Science, Water Quality
  - Ecosystem Restoration Planning, Everglades & Estuaries Protection
- Numerous external briefings were held with local stakeholders
- Was submitted to meet Feb. 1 Legislative deadline

Thank You.

Board Questions?

Big Cypress Basin Boundary Modification –

Financial Analysis
Committee Substitute/Senate Bill 406

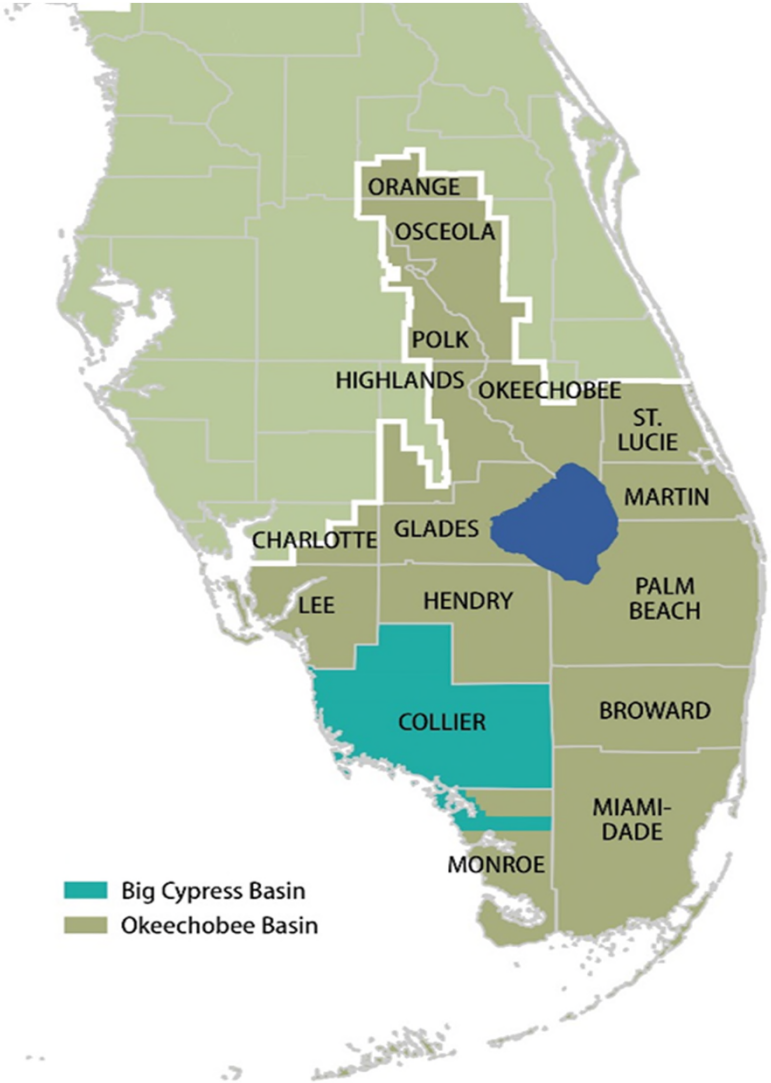
February 25, 2021

Candida Heater, Administrative Services Division Director

CS/SB 406 & Taxing Basins

- CS/SB 406 – "*The basin ad valorem taxes levied within the counties that comprise the Big Cypress Basin are used for projects and flood control operations and maintenance within the counties in which they are collected.*"

- Two Taxing Basins
  1. **Big Cypress Basin**: Collier & Monroe Counties:
     - District-wide Ad Valorem
     - Big Cypress Basin Ad Valorem
  2. **Okeechobee Basin**: All Counties (Except Collier):
     - District-wide Ad Valorem
     - Okeechobee Basin Ad Valorem
     - Everglades Construction Project (ECP) Ad Valorem



Financial Analysis

- Proposed New Boundary as Currently Levied (Based off Estimated Taxable Values):
  - **Big Cypress Basin: Collier & Monroe Counties:** $11 million in District-wide Ad Valorem and $11 million in Big Cypress Basin Ad Valorem
  - **Okeechobee Basin: Lee County Areas Identified in Boundary Study:** $4.4 million in District-wide Ad Valorem, $4.8 million from the Okeechobee Basin Ad Valorem, and $1.5 million from the ECP Ad Valorem
- Proposed New Boundary Levy After Change (Based off Estimated Taxable Values):
  - **Big Cypress Basin: Collier & Monroe Counties:** $11 million in District-wide Ad Valorem and $11 million in Big Cypress Basin Ad Valorem
  - **Big Cypress Basin: Lee County Areas Identified in Boundary Study:** $4.4 million in District-wide Ad Valorem, $4.5 million in Big Cypress Basin Ad Valorem
- ($6.3 million) Estimated Total Cut to Ad Valorem Revenue within the Okeechobee Basin:
  - ($4.8 million Okeechobee Basin Ad Valorem) + ($1.5 million ECP Ad Valorem)

Financial Analysis *(Continued)*

- Bill Language Limits Usage of Big Cypress Basin Ad Valorem Tax to:
  - Projects & Flood Control Operations and Maintenance
- Excludes $2.6 million of Currently Funded Annual Big Cypress Basin Functions:
  - Land Management
  - Regulatory Obligations
  - Water Quality Monitoring
  - Other Administrative Responsibilities, Management, and Governmental Contractual Obligations

Blue-winged teal duck

Presenter: Candida Heater

Financial Analysis *(Continued)*

Changes to Annual Recurring Basin Ad Valorem Funding:

- **Cuts $6.3 million** from Comprehensive Everglades Restoration Plan (CERP), Stormwater Treatment Area (STA) Operations, and Central & South Florida Flood Control System. Examples:
  - Operations of Caloosahatchee Reservoir (C-43)
  - Operations of Aquifer Storage & Recovery (ASR) Wells, part of the Lake Okeechobee Watershed Restoration Plan
  - Operations of EAA Reservoir Project STA
  - Operations of Treatment Wetlands that Send Clean Water to the Everglades
  - Maintenance and Repairs to Aging Infrastructure
- **Cuts $2.6 million** from Basin Functions Including: Land Management, Regulatory Obligations, Water Quality Monitoring, Other Administrative Responsibilities, Management, and Governmental Contractual Obligations
- **Adds $2.6 million** to Collier County and **$4.5 million** to Lee County for Projects & Flood Control Operations and Maintenance

Thank You.

Board Questions?