

Big Cypress Basin Governing Board Meeting: Big Cypress Basin Boundary Delineation



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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

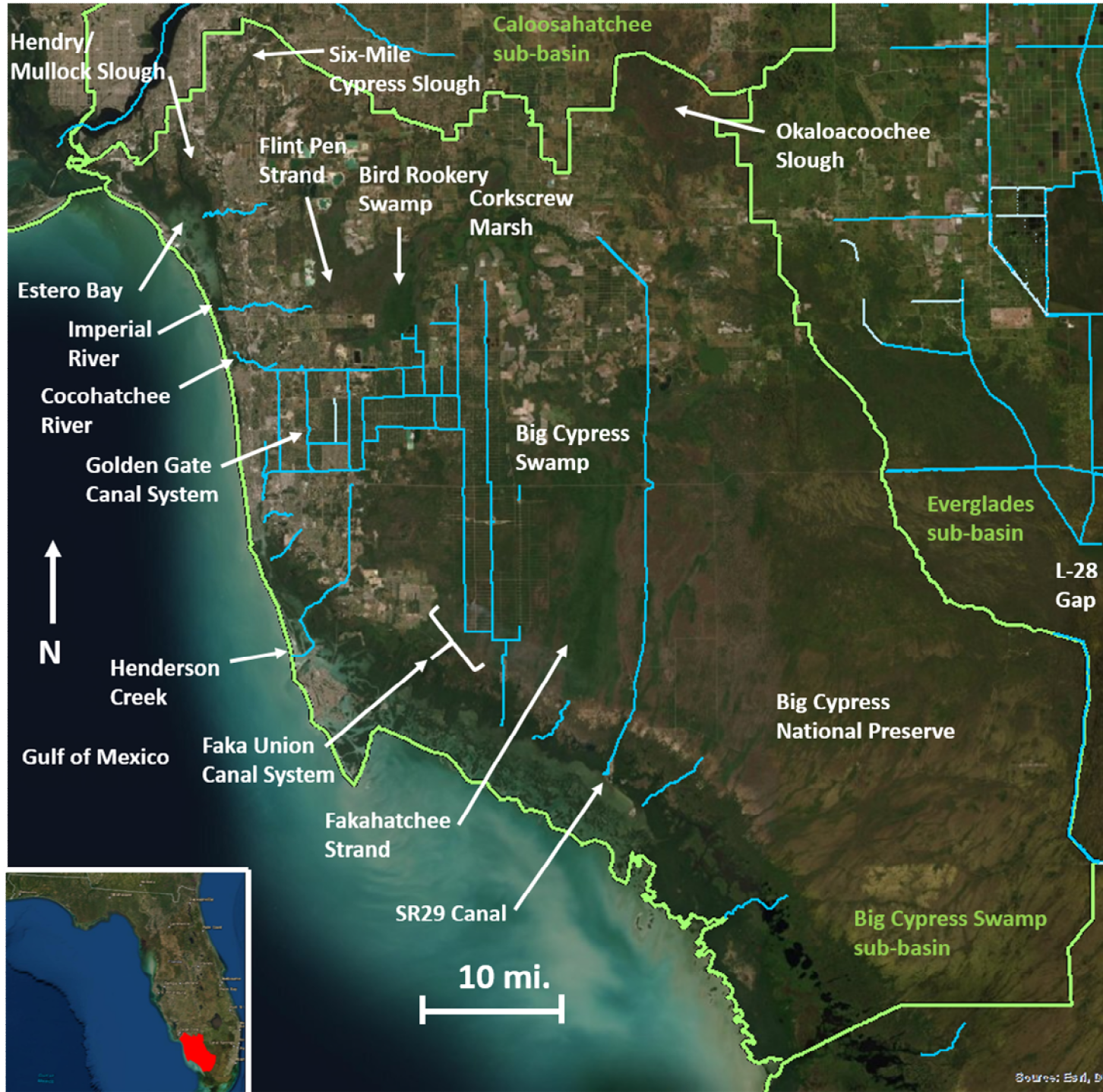
- Step 1: Review current catchment boundaries
 - Use Geographic Information Systems (GIS) to overlay existing boundary maps and coverages
- Step 2: Evaluate the topography
 - Use digital elevation data in GIS to compare high/low landscape elevations with catchment boundaries
- Step 3: Examine aerial 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 ArchHydro 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

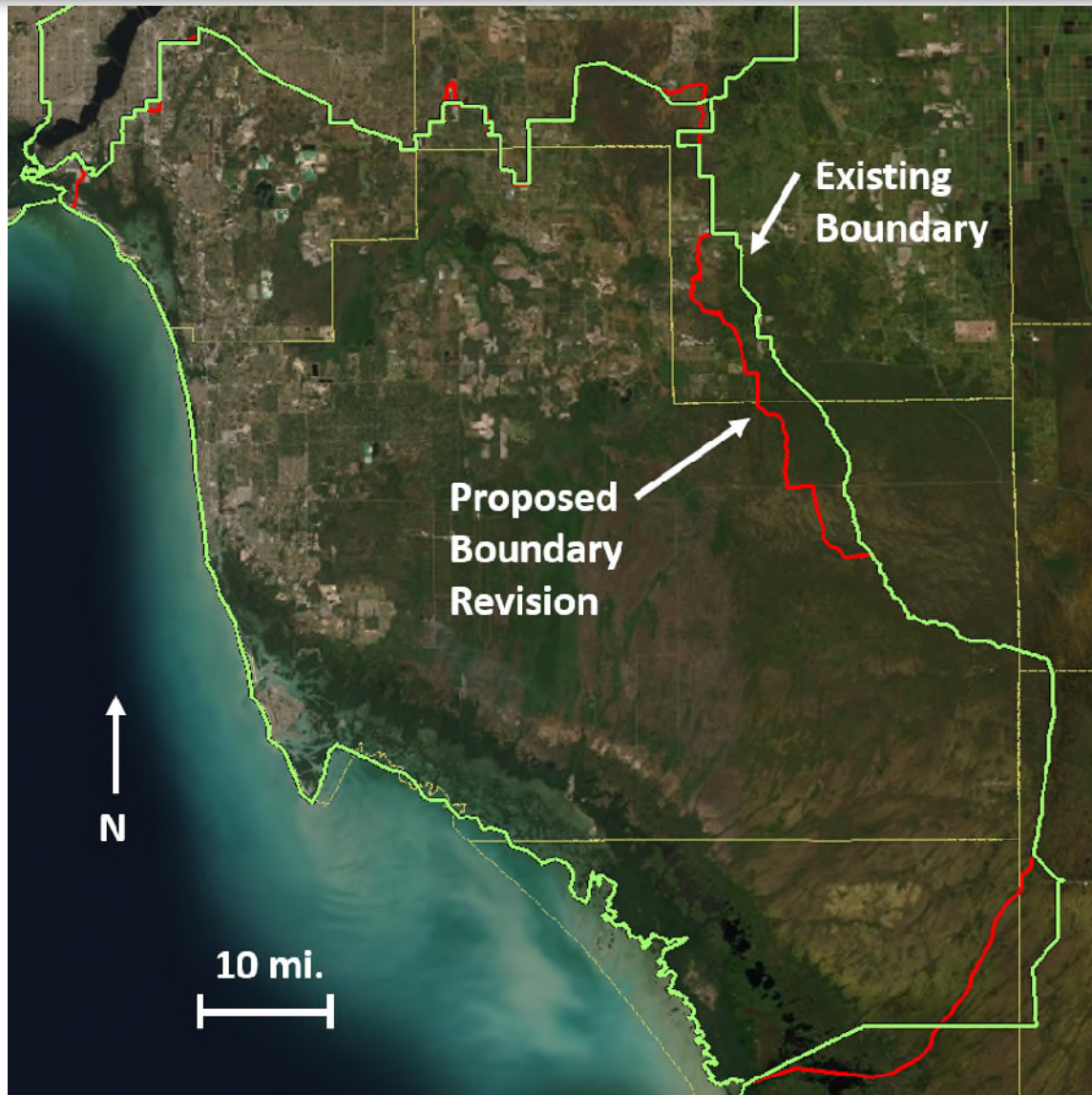


- Key sub-basin items:
- Neighboring sub-basins
 - Natural hydrologic features
 - Natural & man-made waterways

- 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



Products



Big Cypress Basin (BCB) Boundary Delineation

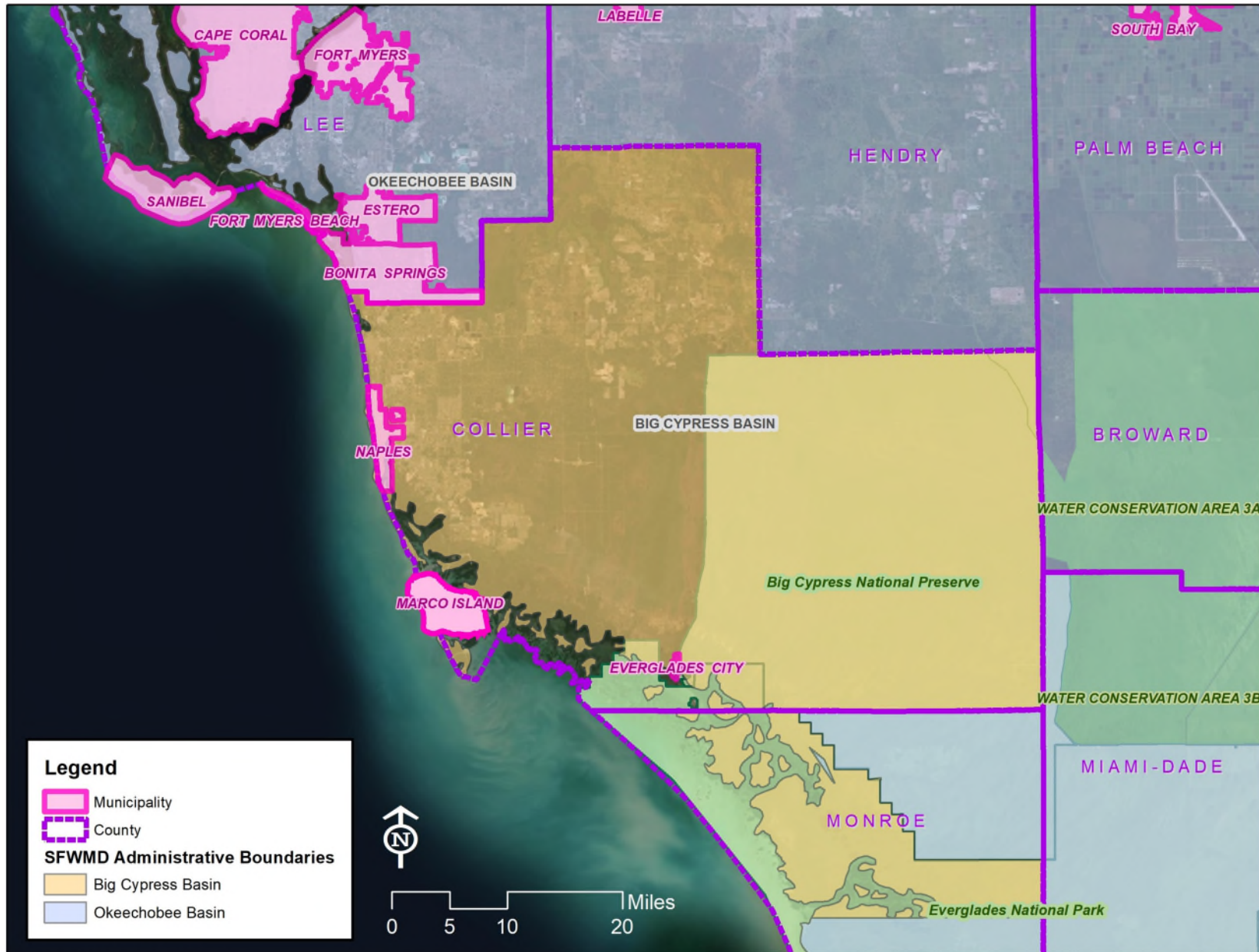


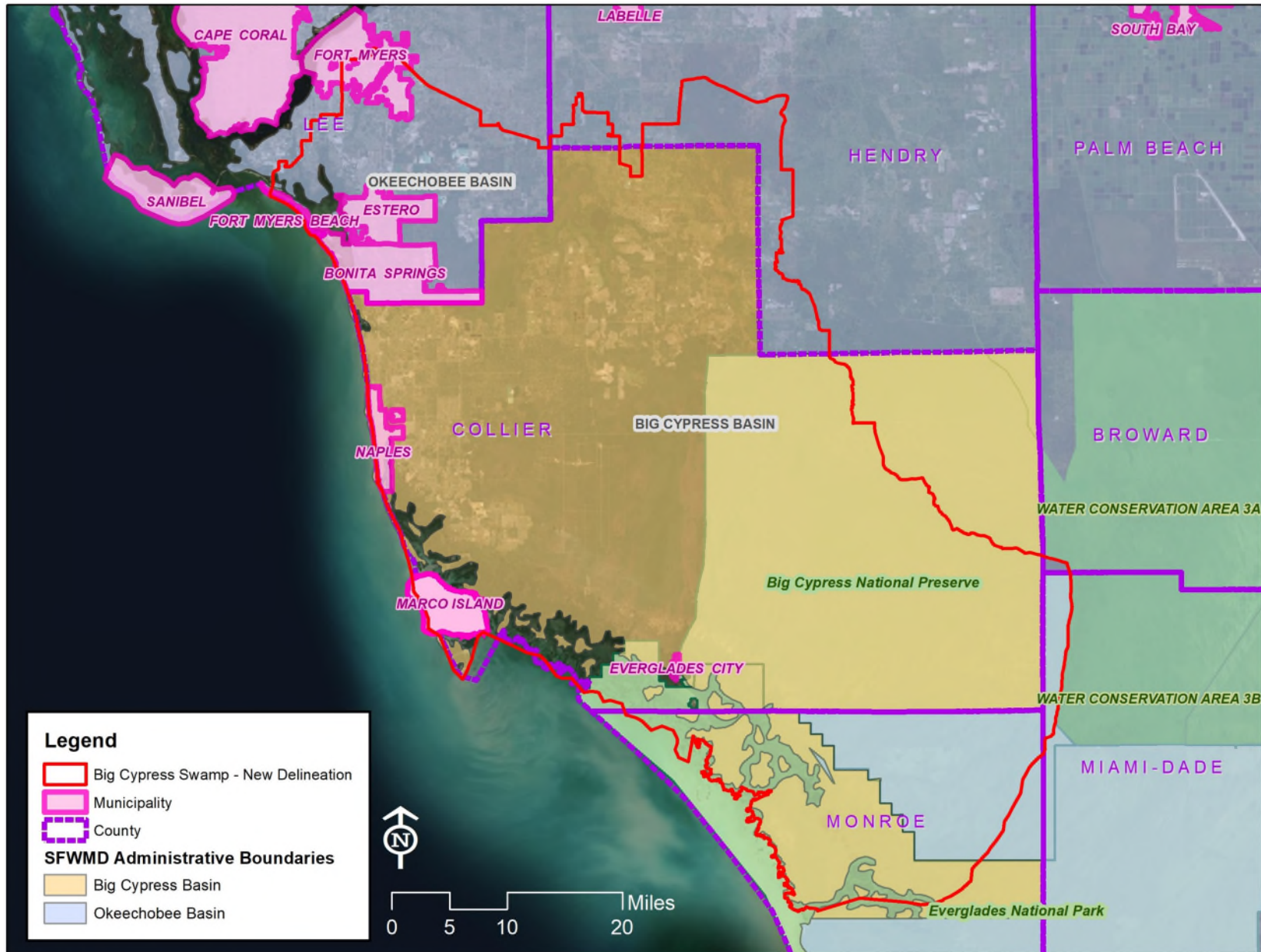
South Florida Water Management District
Hydrology and Hydraulics Bureau
August 2020

Presenters: Akin Owosina and Jeff Iudicello

Close-out Steps

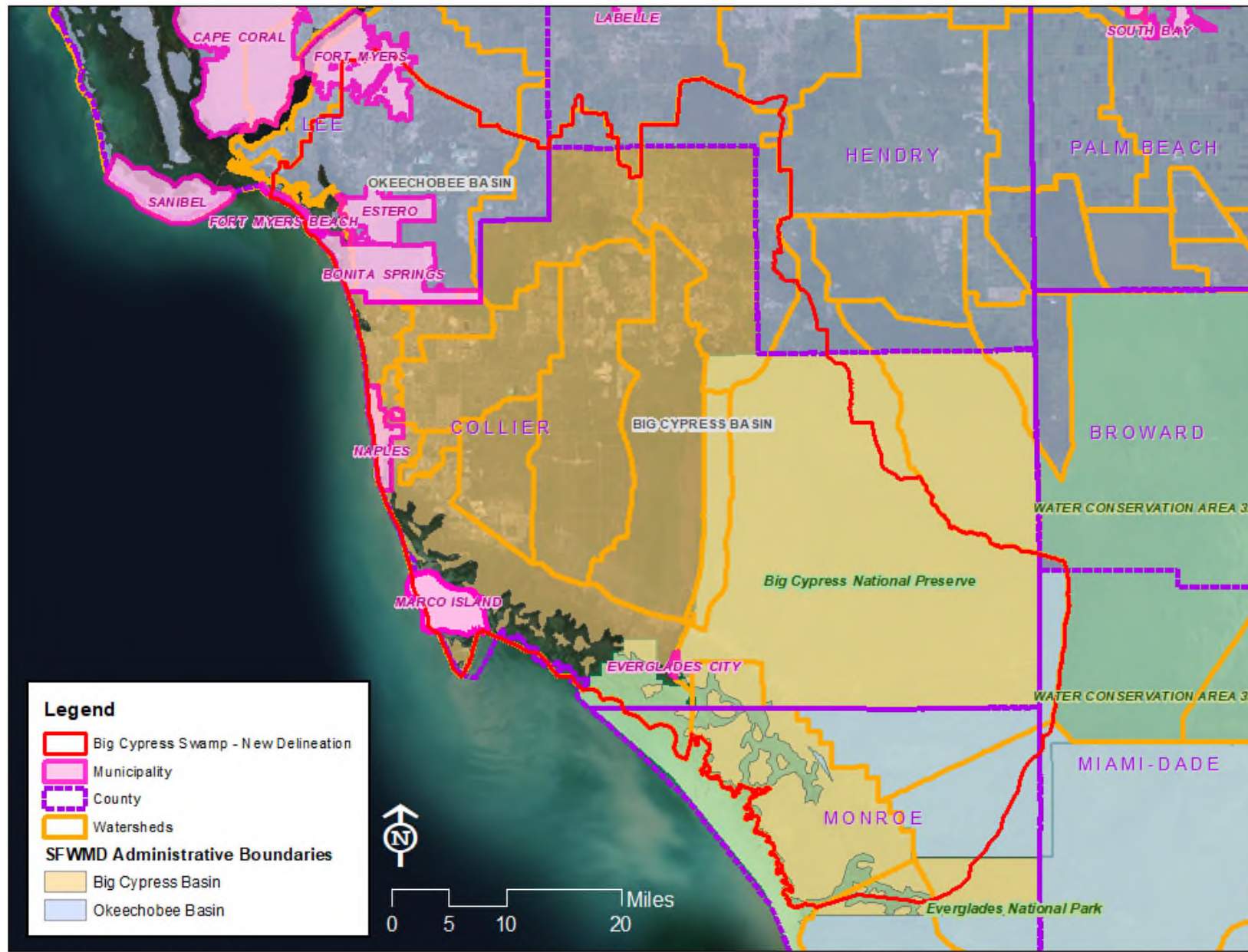
- Brief staff of local governments
 - Village of Estero ✓
 - City of Bonita Springs ✓
 - Collier County ✓
 - Lee County ✓
- Public Meeting
 - Big Cypress Basin Board Meeting
- Finalize report and deliver to governor and legislature





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Questions on Agenda Item 7?

If you're participating via
Zoom – use the Raise Hand
feature

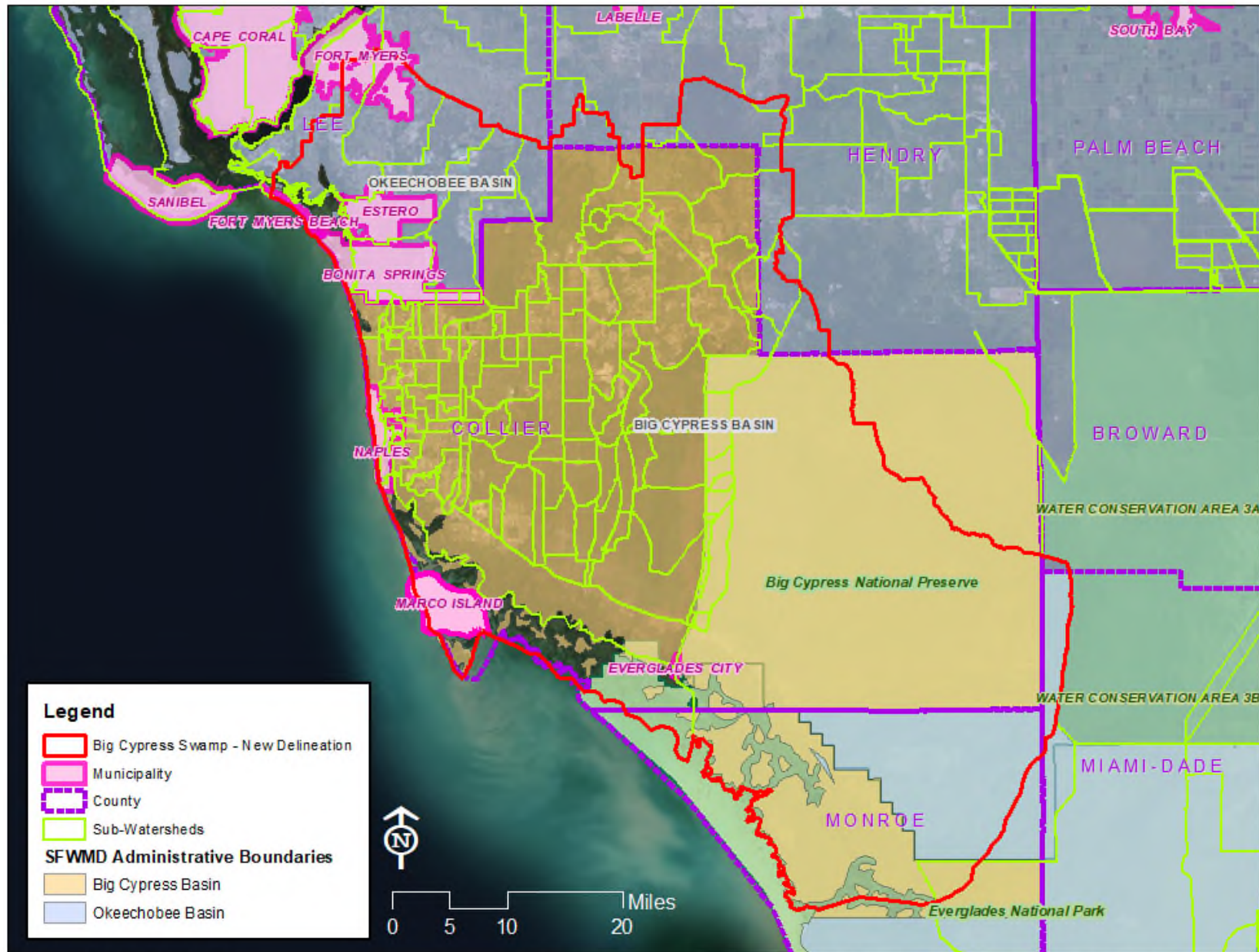
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*9 Raises Hand



Presenters: Akin Owosina and Jeff Iudicello



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