



Caloosahatchee River and Estuary Basin Management Action Plan Technical Meeting

August 27, 2019



Agenda

- *Background*
- *Allocation Calculations*
- *Targeted Restoration Area Approach*
- *BMAP Update Timeline*
- *Statewide Annual Report (STAR)*
- *GovDelivery Notifications*
- *Next Steps*



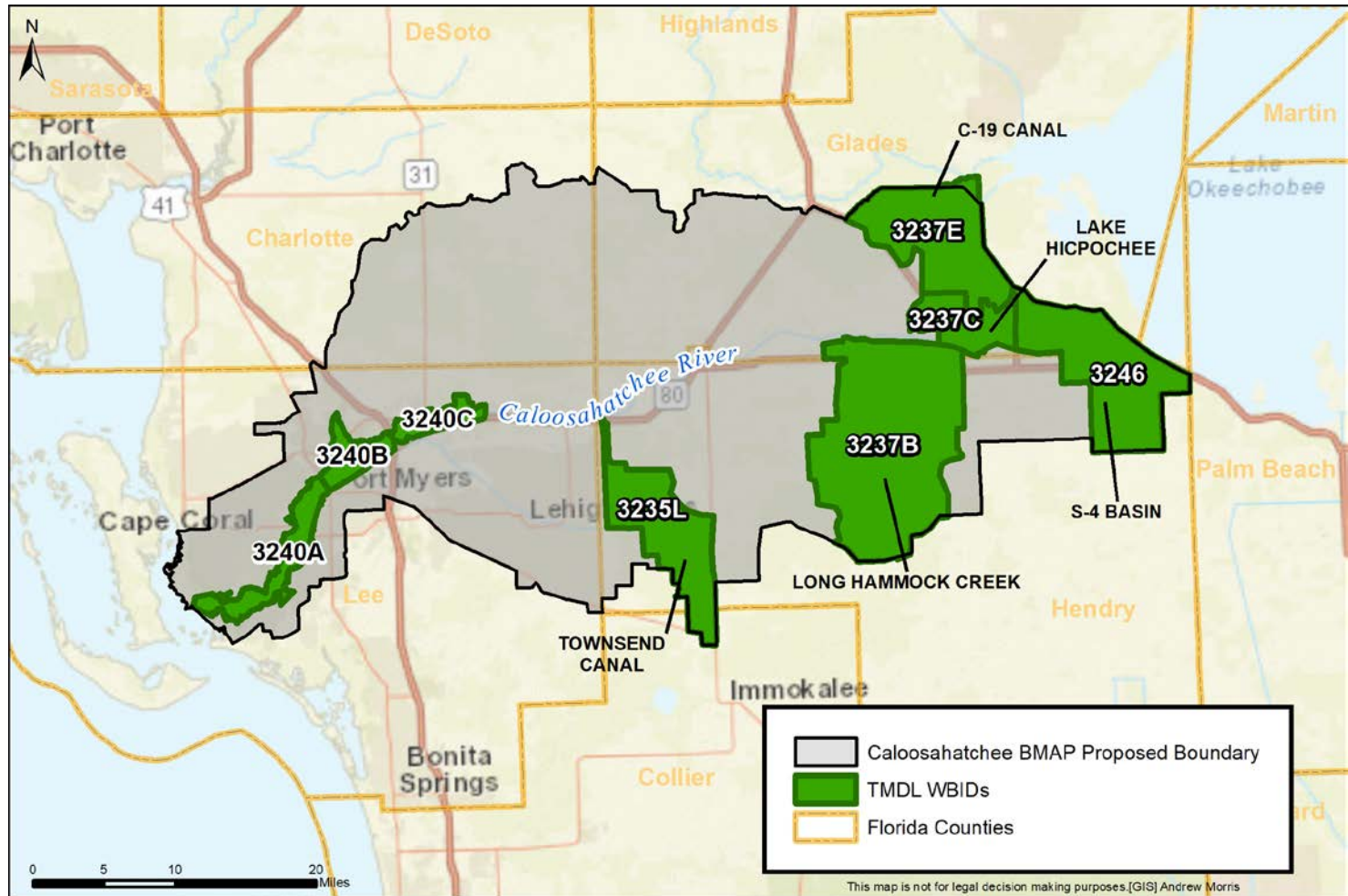
Background

Caloosahatchee TMDLs

Caloosahatchee River and Estuary BMAP



Caloosahatchee Watershed TMDLs



- Estuary TMDL (TN) - 2009
- Tributary TMDL (TN, TP, BOD) - 2019



Caloosahatchee Estuary BMAP

- BMAP adopted in November 2012
- 5-Year Review completed in November 2017
 - Provided recommendations for updating the BMAP
- Executive Order 19-12 issued in January 2019
 - Set timeline to update BMAP by January 2020
- BMAP Update to include:
 - Boundary expansion
 - Tributary TMDLs
 - New stakeholders
 - Monitoring network changes
 - Milestones
 - New projects





Allocation Calculations

Methodology

Draft Existing Loads



Allocation Approach

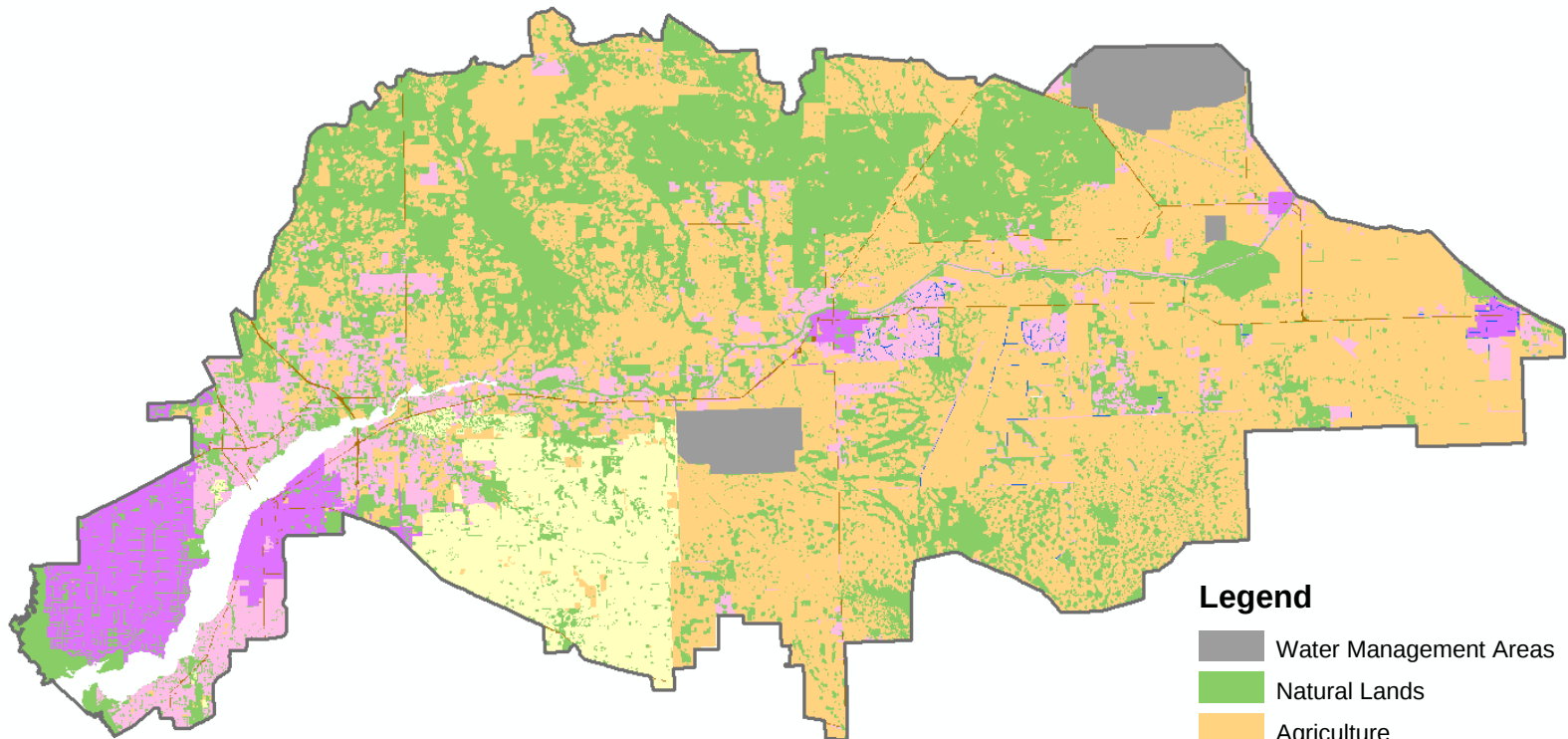
Methodology - Estuary

PART A – Requirements for Estuary (All Stakeholders)

- Calculate average annual TN loads from model outputs to obtain stakeholder existing loads
- Areas were clipped out and assigned to each entity using GIS process:
 - 1) Water management areas
 - 2) Natural lands
 - 3) Agricultural lands
 - 4) Florida Department of Transportation (FDOT) roads and rights-of way (ROW)
 - 5) Water control district (WCD) canals and ROWs
 - 6) Community development districts (CDDs)
 - 7) Cities
 - 8) Remaining land split by county boundaries



Base Map

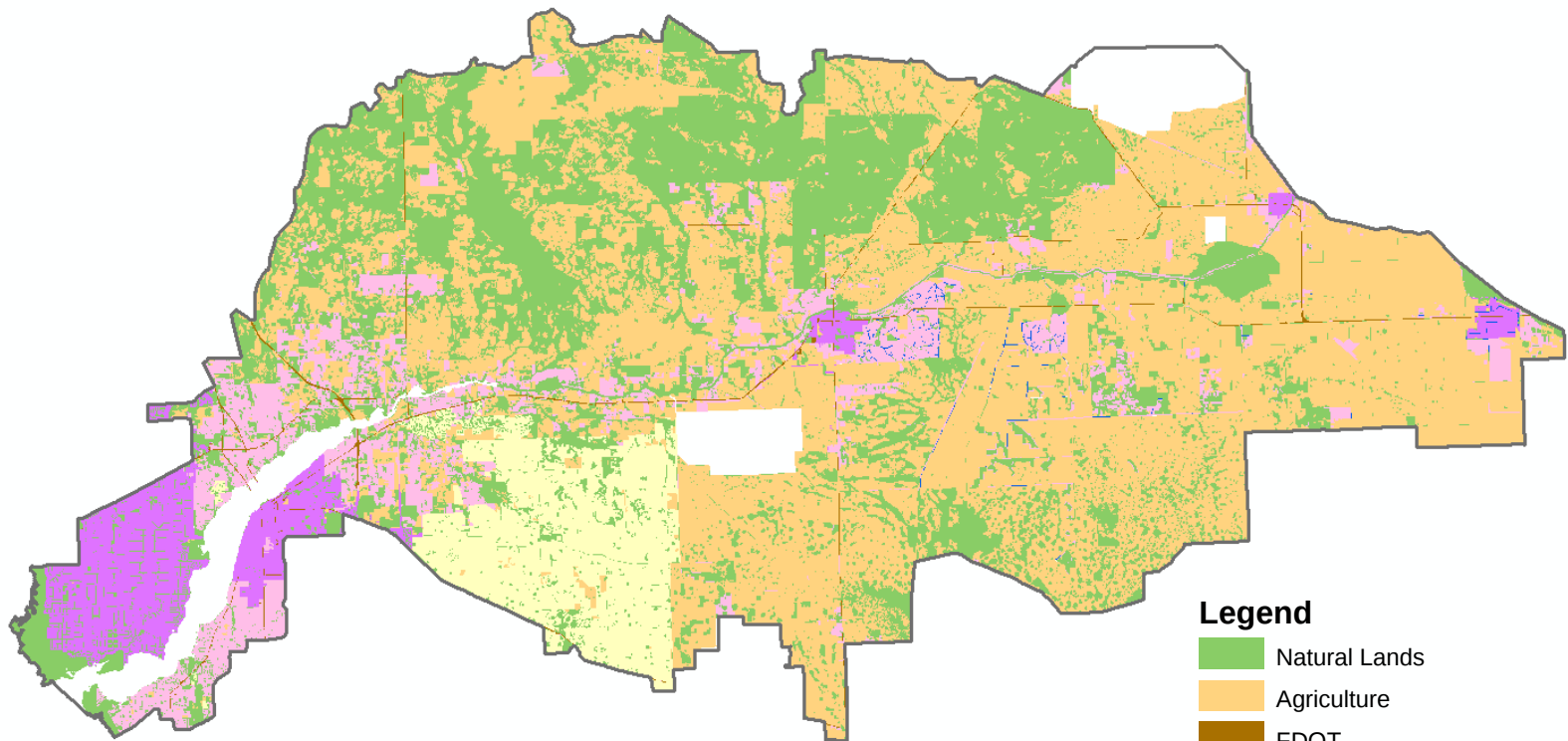


Legend

- Water Management Areas
- Natural Lands
- Agriculture
- FDOT
- WCD Canals
- CDDs
- Cities
- Counties



1. Water Management Areas Removed

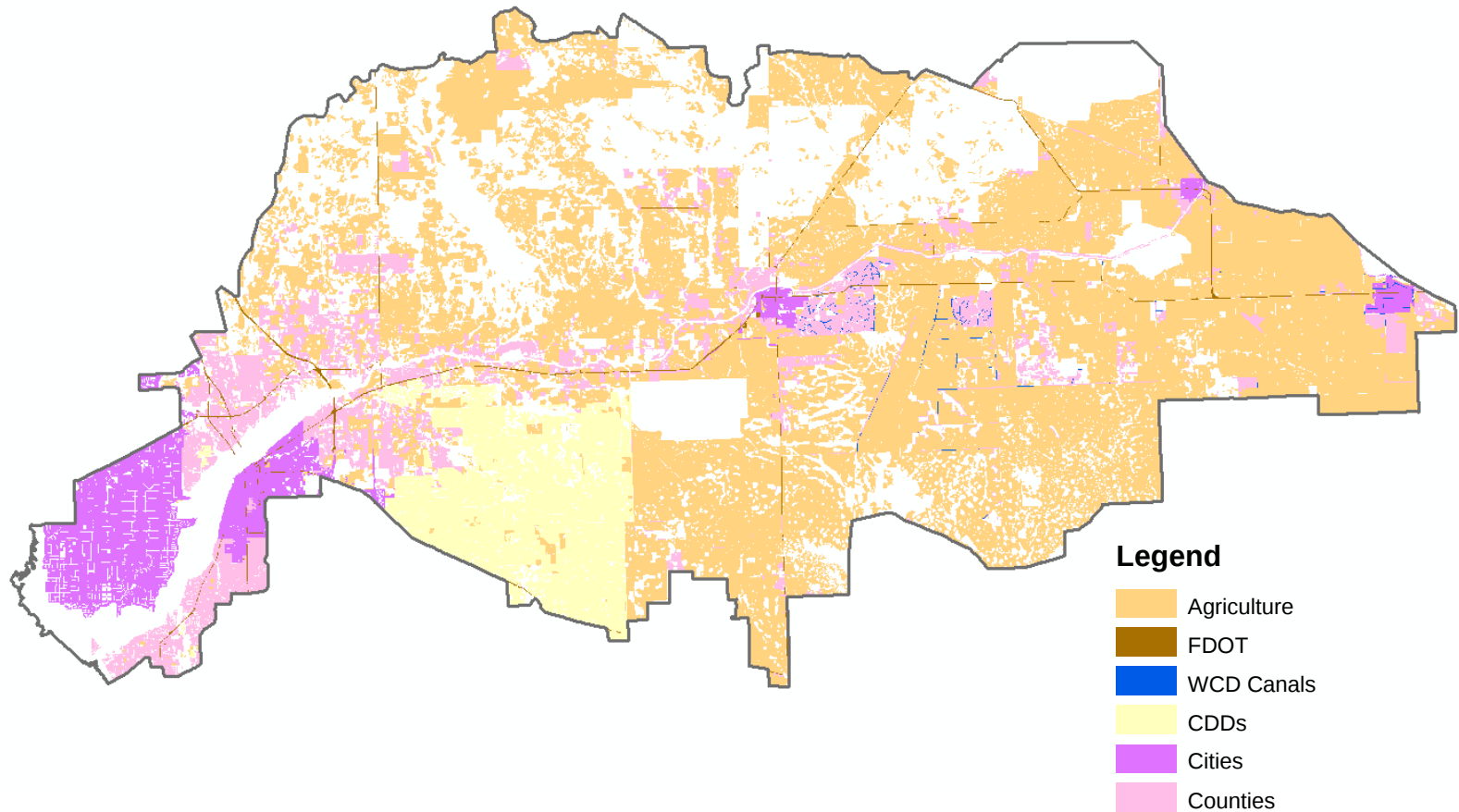


Legend

- Natural Lands
- Agriculture
- FDOT
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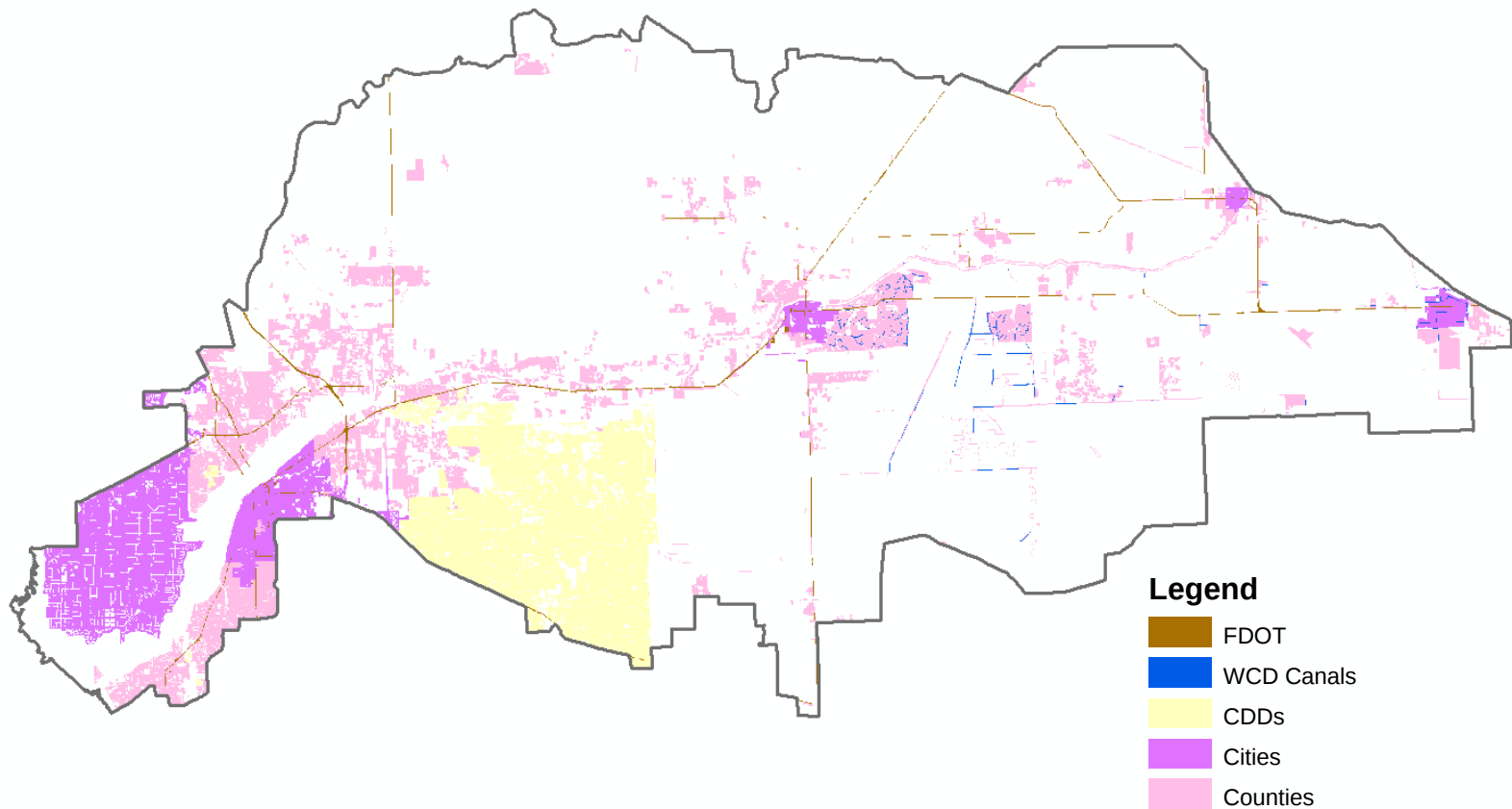


2. Natural Lands Removed



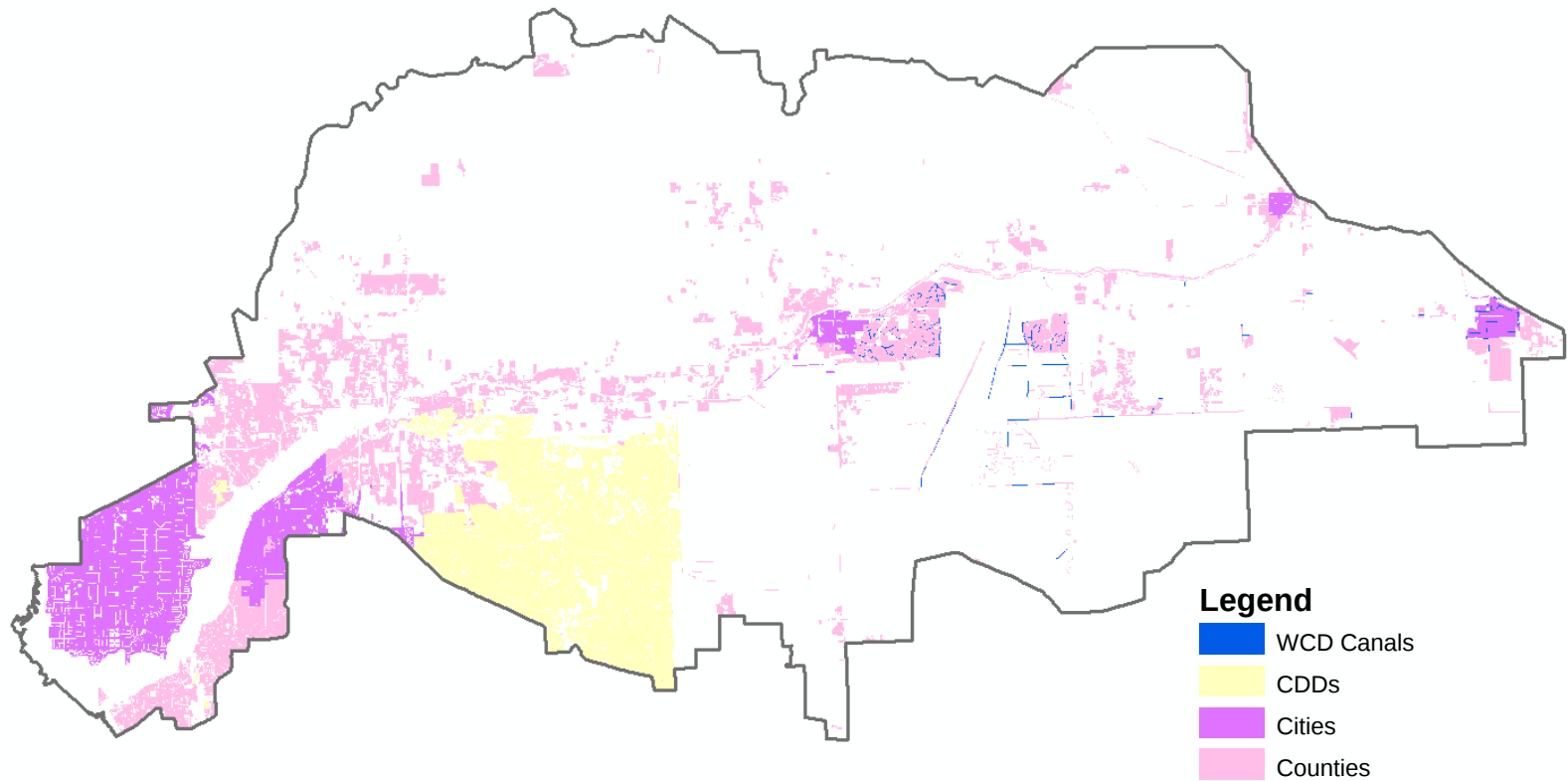


3. Agricultural Lands Removed



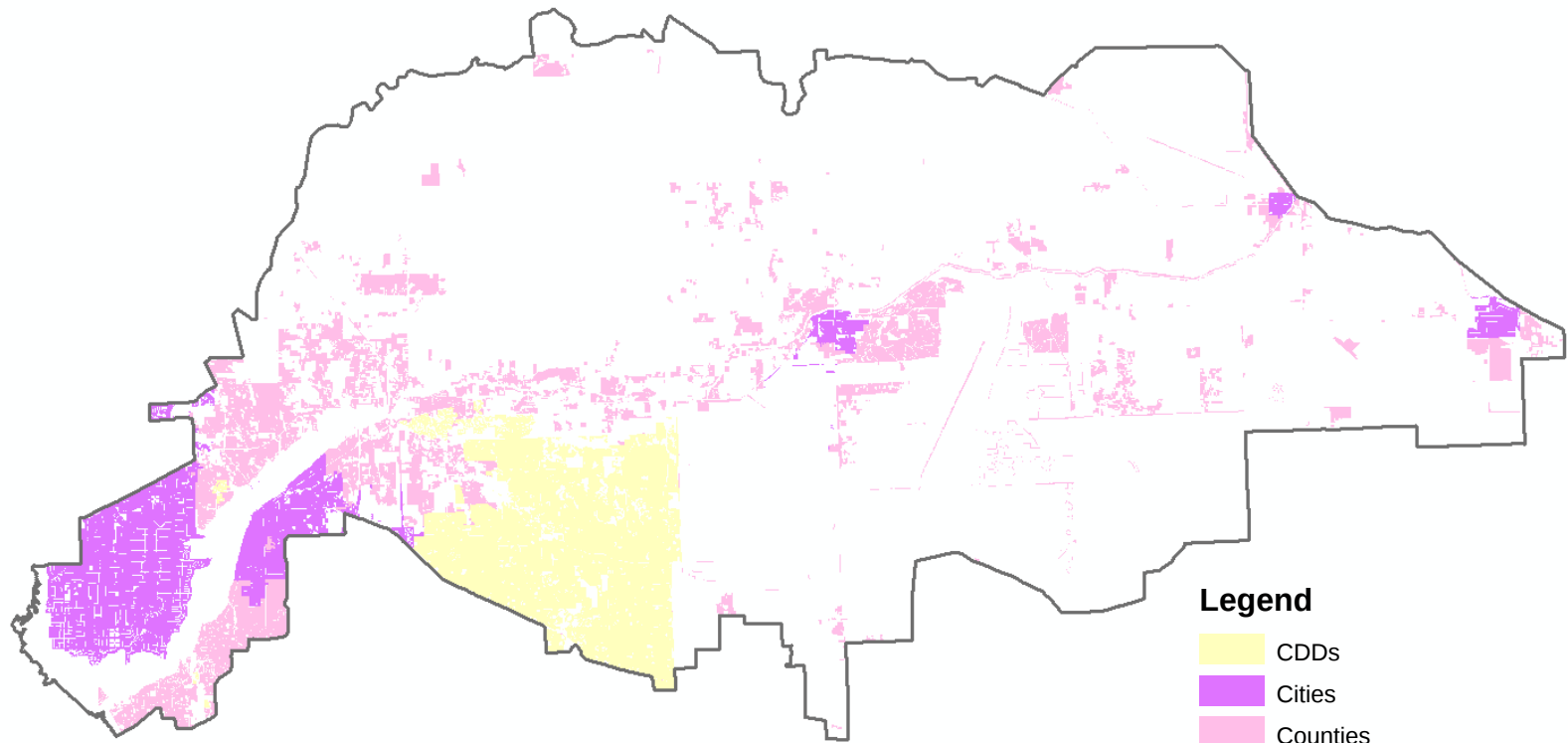


4. FDOT Roads and ROWs Removed



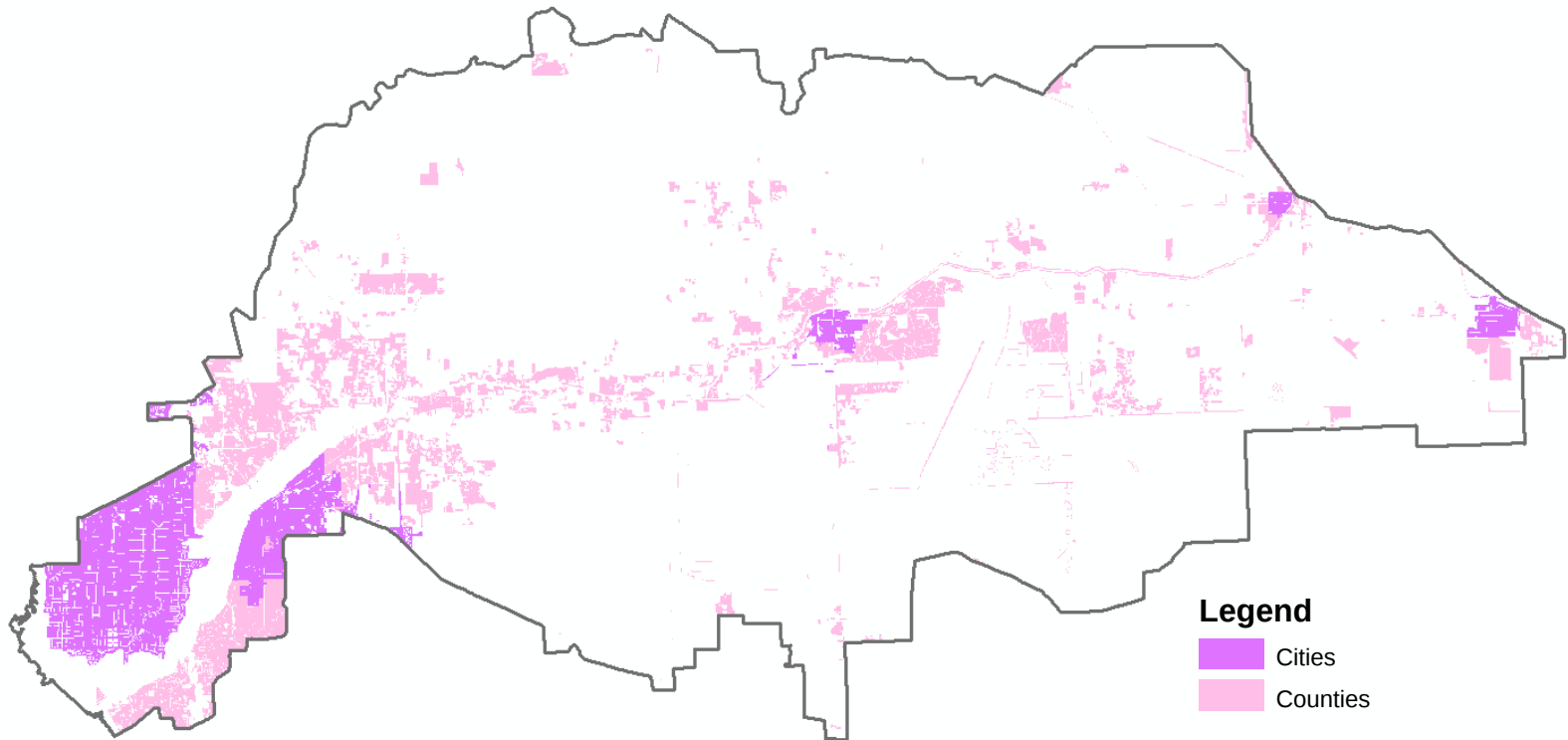


5. WCD Canals and ROWs Removed





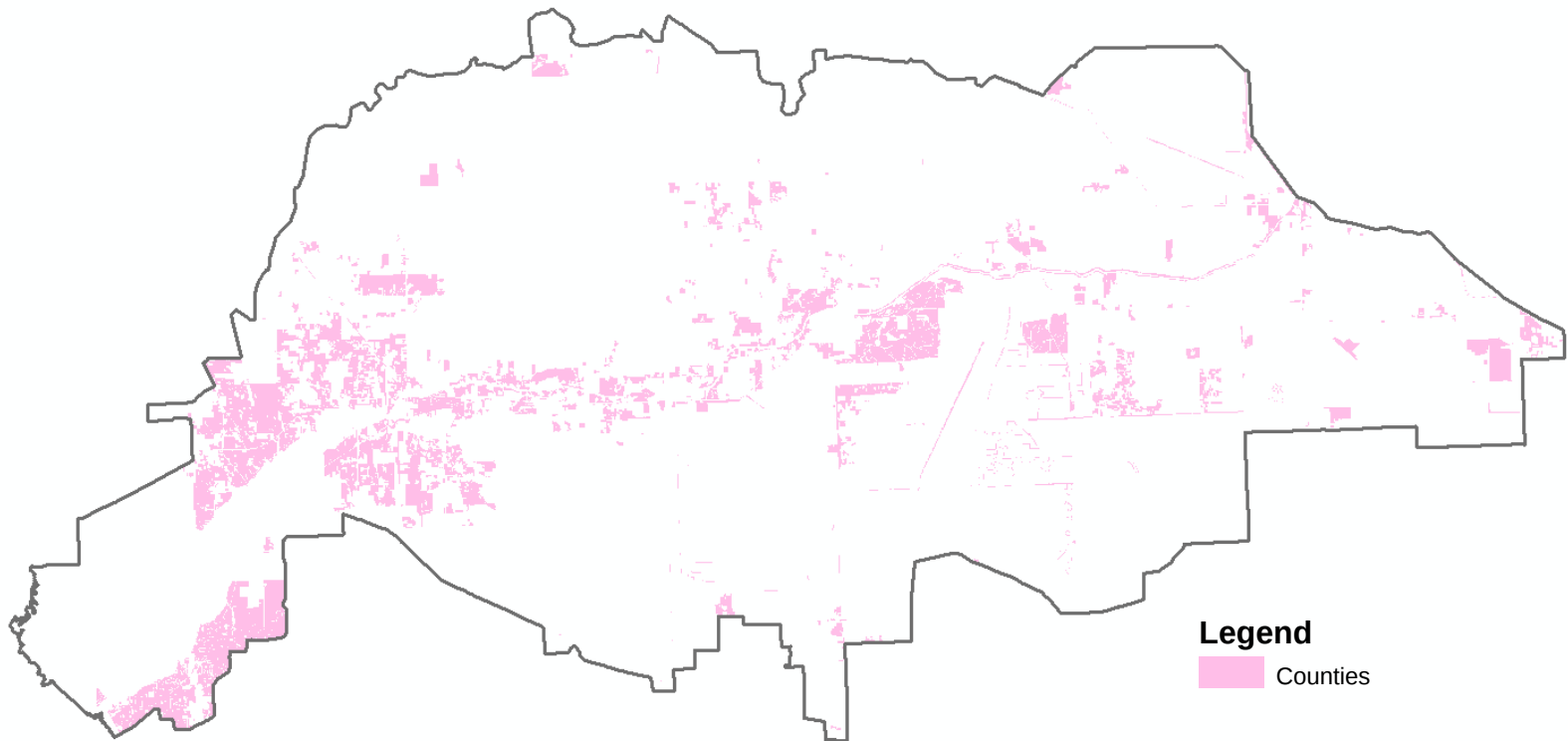
6. CDDs Removed





7. Cities Removed

8. Remaining to Counties





Existing Loads

Entity	Acres	TN Existing Load (lbs/yr)
Agriculture	404,115.2	2,810,902.3
Charlotte County	4,158.1	23,245.2
City of Cape Coral	26,404.0	154,986.9
City of Clewiston	1,990.0	6,642.6
City of Fort Myers	9,804.2	78,037.0
City of LaBelle	2,136.5	11,732.9
City of Moore Haven	641.8	1,795.8
Collier County	25.8	58.4
Copperhead CDD	210.4	1,004.6
FDOT	5,093.5	25,115.7
Glades County	9,461.4	25,095.8
Hendry County	20,906.0	63,440.7
Lee County	42,421.4	235,838.4
Lehigh Acres MSID	55,142.4	163,256.5
Lucaya CDD	41.8	354.2
Moody River Estates CDD	249.4	1,686.7
Portico CDD	253.0	1,215.1
River Hall CDD	1,243.6	6,667.4
Sail Harbour CDD	44.3	504.9
Verandah East CDD	432.5	2,015.7
Verandah West CDD	534.0	3,507.6
Natural Lands	262,562.3	332,829.7
WCD canals	1,012.1	4,005.6
Total	848,883.7	3,953,939.7



Allocation Approach

Methodology – Estuary (continued)

- Next step is to calculate required reductions
 - Total reduction = TN load for the entire watershed times the 23 % TMDL reduction ($3,953,940 \times 23\% = 909,406$)
 - Required reduction was assigned to stakeholders based on the percentage of each stakeholder's starting load
- Example calculations table:

Entity	Existing Load	Percent of Load	Required Reduction
A	36,171	1%	9,674.5
B	180,855	5%	48,372.7
C	361,710	16%	96,745.3
D	2,821,341	78%	754,613.6
Total	3,400,078.0	100%	909,406.1



Allocation Approach

Methodology - Tributaries

PART B – Requirements for Tributary Stakeholders

- Calculate average annual TN and TP loads from model outputs to obtain stakeholder existing loads by tributary
- Apply the TMDL percent reductions to calculate the required reductions for each stakeholder
- Stakeholder's TN tributary reduction may cover their TN estuary reduction (Example)

Entity	Required Tributary TN Reduction	Required Estuary TN Reduction	Final Required TN Reduction
A	10,469.4	9,674.5	10,469.4
B	23,158.3	48,372.7	48,372.7
C	31,279.8	96,745.3	96,745.3
D	358,292.1	754,613.6	754,613.6
Total	423,199.6	909,406.1	910,201.0



Allocation Approach

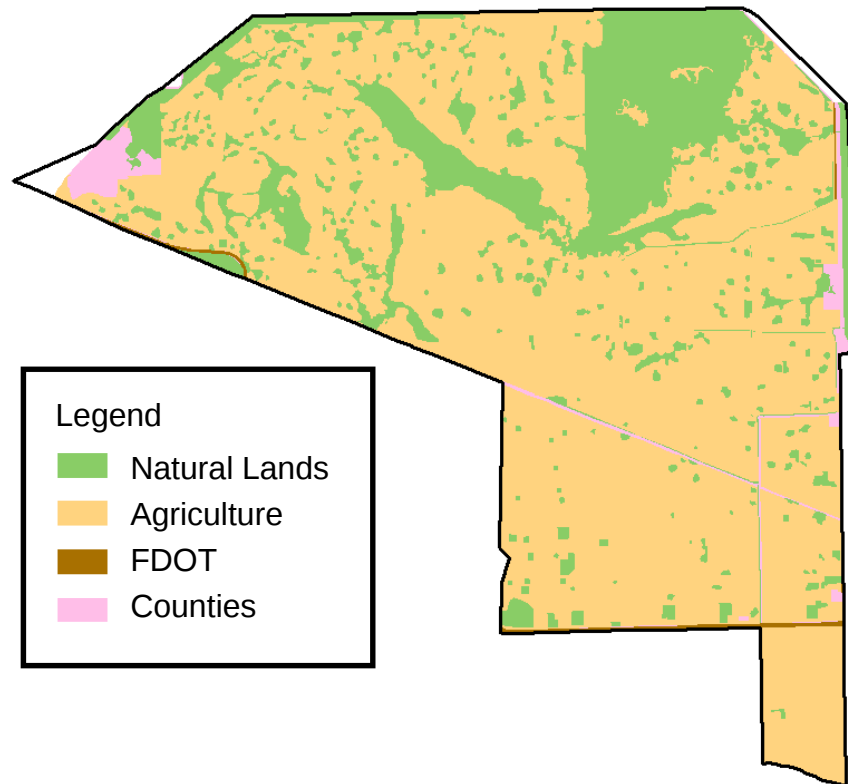
Tributaries TMDLs required percent reductions

Waterbody (WBID)	TN LA (% reduction)	TP LA (% reduction)
C-19 Canal (3237E)	48%	48%
Lake Hicpochee (3237C)	2%	2%
Long Hammock Creek (3237B)	42%	42%
S-4 Basin (3246)	23%	27%
Townsend Canal (3235L)	37%	38%



C-19 Existing Loads

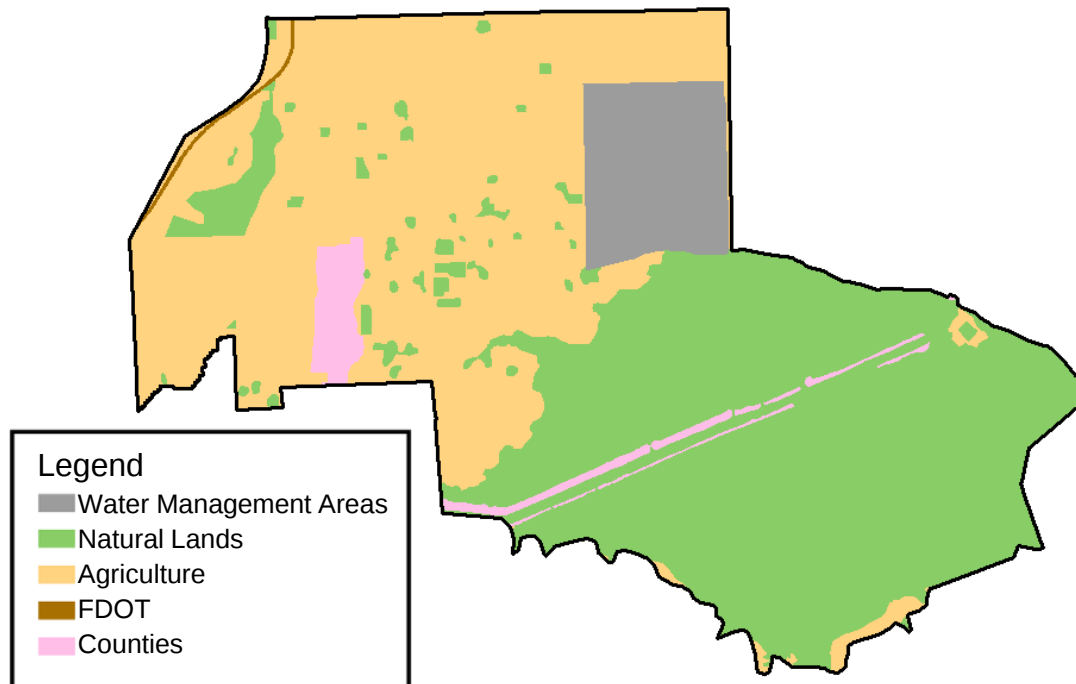
C-19 Entity	Acres	TN Existing Load (lbs/yr)	TP Existing Load (lbs/yr)
Agriculture	22,615.5	110,296.0	5,963.8
FDOT	202.9	524.1	88.6
Glades County	772.1	2,116.3	298.1
Natural	6,952.3	3,643.3	270.2
Total	30,542.7	116,579.8	6,620.7





Lake Hicpochee Existing Loads

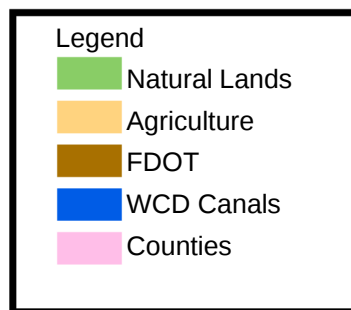
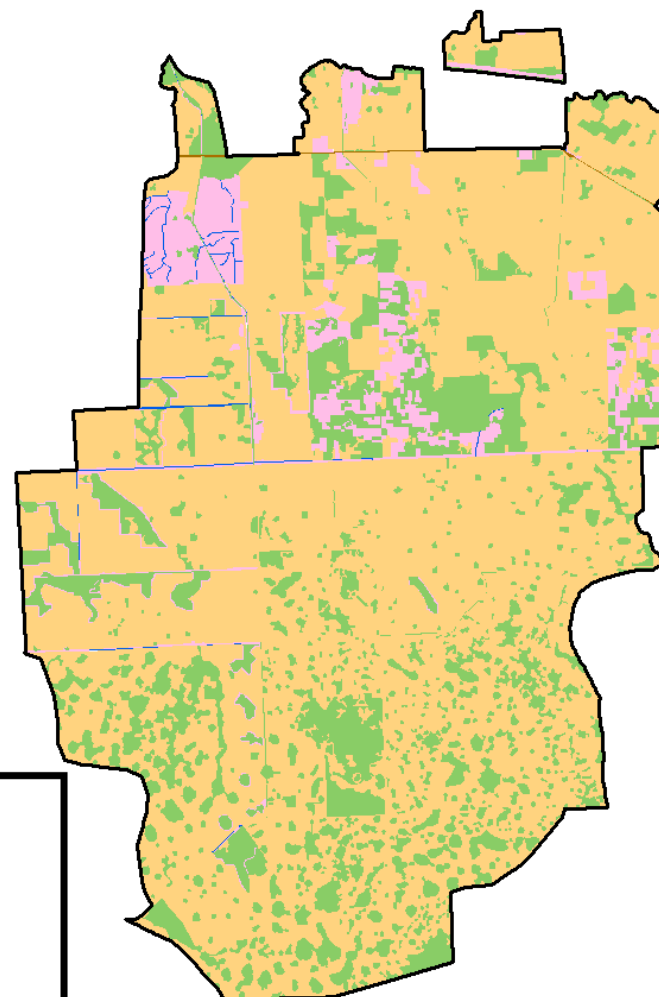
Entity	Acres	TN Existing Load (lbs/yr)	TP Existing Load (lbs/yr)
Agriculture	4,518.9	22,909.9	1,136.6
FDOT	28.8	60.2	11.7
Glades County	304.8	798.5	109.7
Natural	4,927.5	1,668.1	115.7
Total	9,780.0	25,436.7	1,373.6





Long Hammock Existing Loads

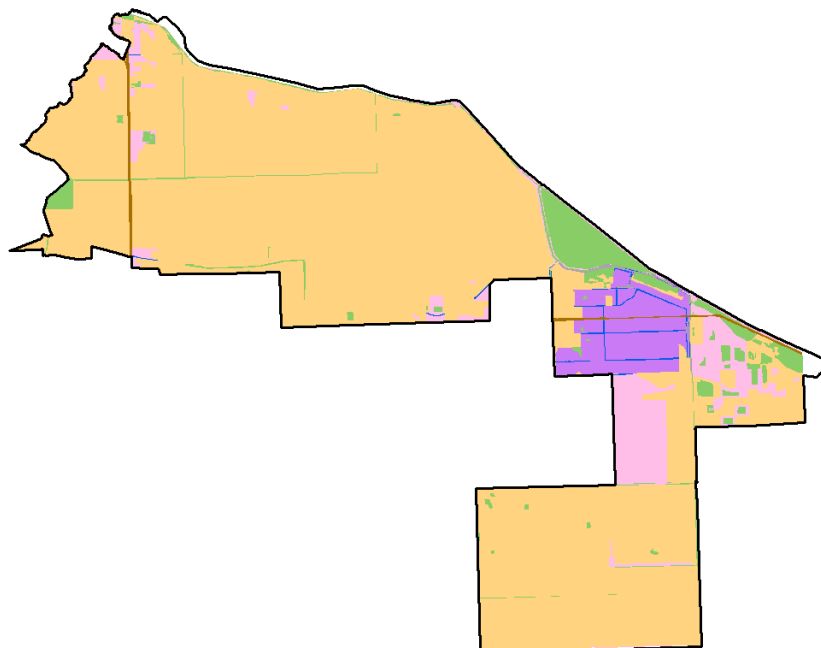
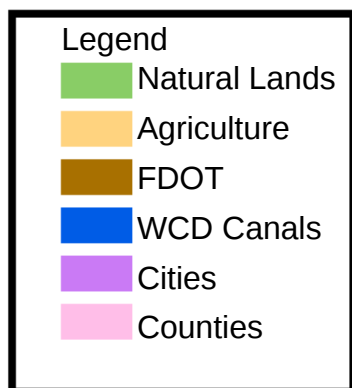
Entity	Acres	TN Existing Load (lbs/yr)	TP Existing Load (lbs/yr)
Agriculture	58,036.3	403,503.0	25,087.3
FDOT	112.8	512.6	130.6
Glades County	405.0	1,038.9	116.5
Hendry County	5,051.6	16,665.0	1,633.1
WCDs	280.9	1,347.8	107.9
Natural	17,658.5	14,314.8	1,019.4
Total	81,545.1	437,382.1	28,094.9





S-4 Basin Existing Loads

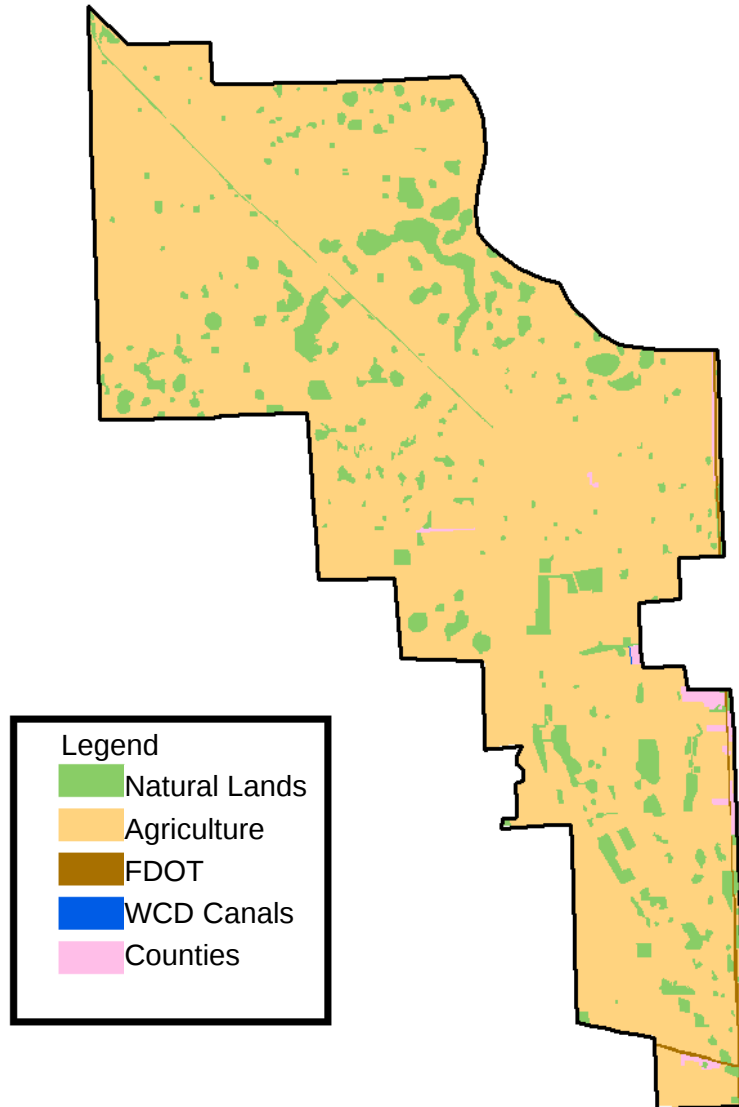
Entity	Acres	TN Existing Load (lbs/yr)	TP Existing Load (lbs/yr)
Agriculture	29,986.1	133,583.0	6,229.4
City of Clewiston	1,989.9	7,351.1	1,144.2
FDOT	245.8	842.9	157.8
Glades County	590.6	2,256.8	693.6
Hendry County	2,221.9	7,986.2	2,090.3
WCDs	133.0	521.9	101.4
Natural	2,118.1	901.6	63.6
Total	37,285.4	153,443.4	10,480.2





Townsend Canal Existing Loads

Entity	Acres	TN Existing Load (lbs/yr)	TP Existing Load (lbs/yr)
Agriculture	26,369.5	249,550.5	22,464.5
Collier County	25.8	80.0	15.0
FDOT	159.0	861.8	216.7
Hendry County	188.1	901.5	157.8
WCDs	2.2	5.3	0.9
Natural	3,074.7	3,079.3	213.9
Total	29,819.3	254,478.6	23,068.9





Questions & Comments





Targeted Restoration Areas

Approach

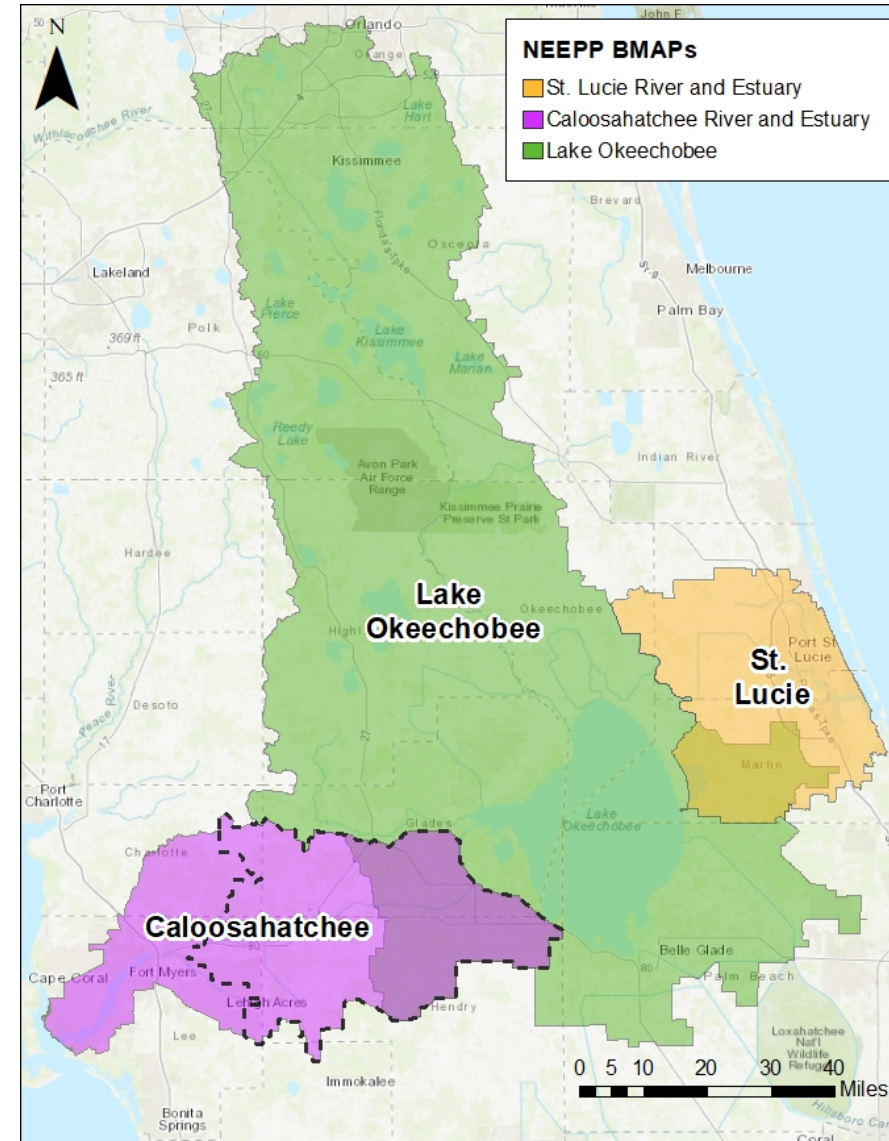


Targeted Restoration Areas

ACHIEVING MORE, NOW

- Data-driven approach
- Focusing on smaller subdivisions called “**targeted restoration areas**” in each BMAP
- Evaluating TN, TP, and flow in all BMAPs
- Prioritize by comparing water quality to appropriate benchmarks

8/27/2019



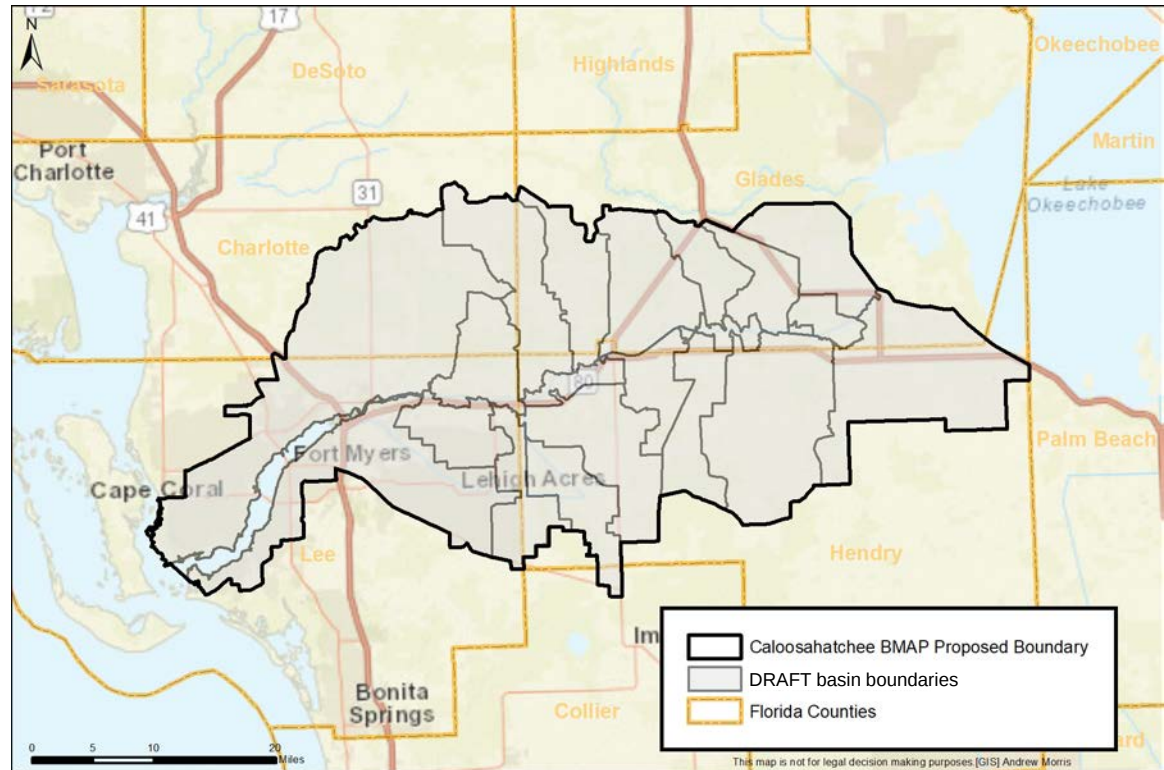


Targeted Restoration Areas

ACHIEVING MORE, NOW

- Using the latest information from SFWMD evaluations, identify projects tailored to each targeted restoration area
- Soliciting stakeholders, local governments, and the public through an RFI for additional projects

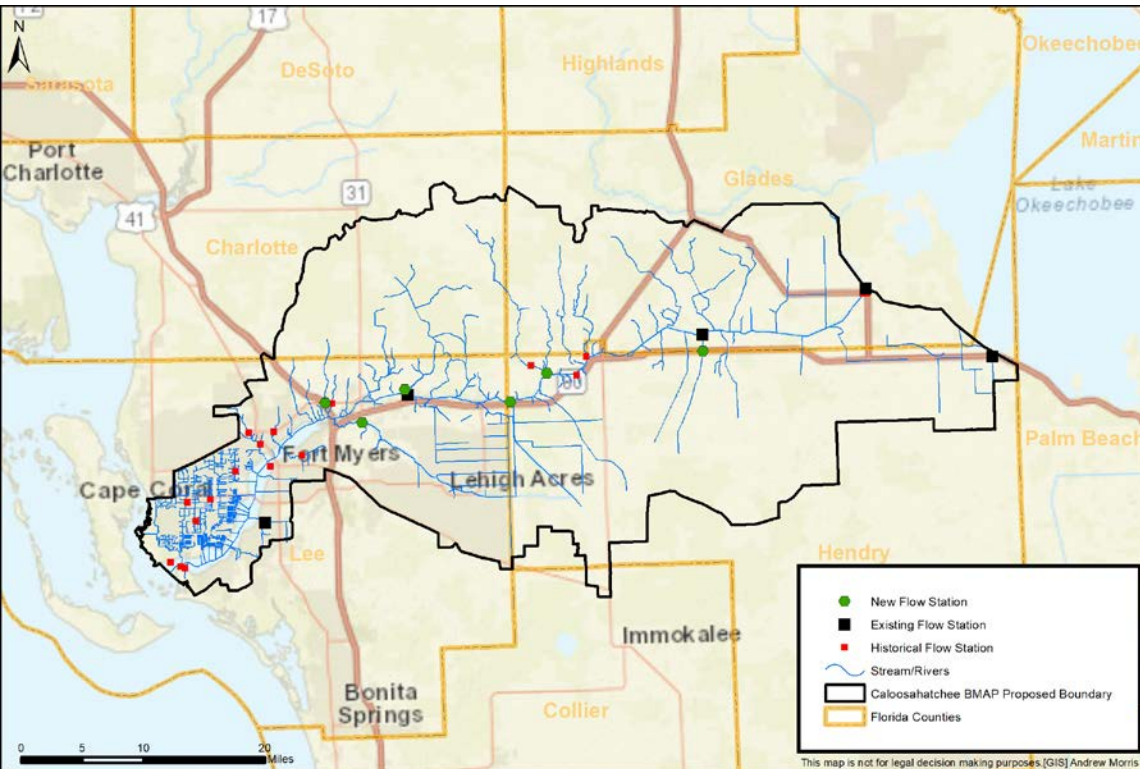
(Refer to handout)





Targeted Restoration Areas

DRAFT Results



- Working with SFWMD to determine where load is driven by flow and more storage is needed
- Relying on existing storage goals in the watershed
- Can rerun storage model in the future if needed and funding is available



Questions & Comments





BMAP Update

Executive Order 19-12

Tentative Timeline

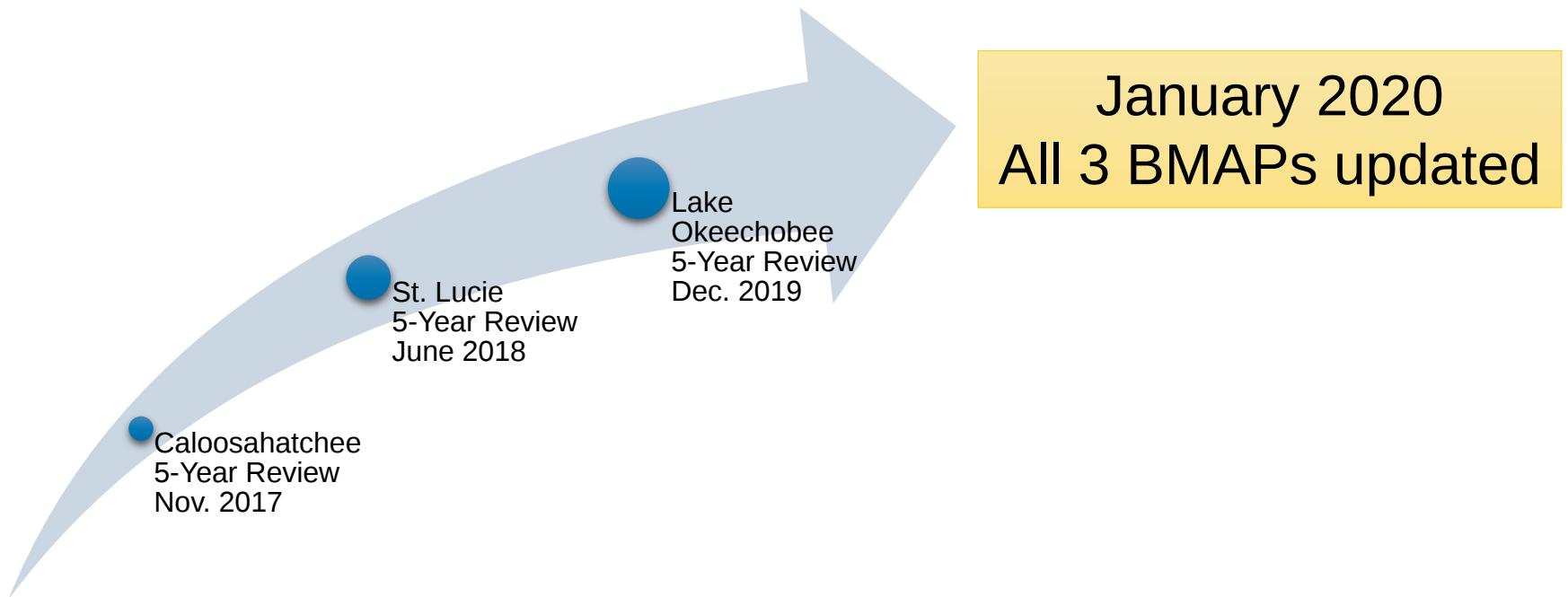


BMAP Update

Executive Order 19-12

BMAP Directives:

- Update restoration plans impacting South Florida communities within the year, including:





BMAP Update

Tentative Timeline

- August 27, 2019
 - Public meeting; Stakeholder project information due at end of month
- September 2019
 - Meetings with stakeholders as needed
- October 2019
 - Public meeting; RFI released
- December 2019
 - Draft BMAP released for review
- January 2020
 - Final BMAP report submission deadline





Statewide Annual Report (STAR)

STAR 2019 Timeline

New STAR Storymap



STAR 2019 Timeline

**November
2018**

**Request for
project
updates
through
December 31,
2018**

**January
15, 2019**

**Deadline for
project
information
to be
submitted
to DEP**

**February
through
June 2019**

**Draft Report
Compiled**

**July 1,
2019**

**Report
submitted to
Governor,
Legislature,
web posted**



New STAR Storymap

- <https://floridadep.gov/dear/water-quality-restoration/content/statewide-annual-report>
 - [Interactive Webpage](#)

Florida Statewide Annual Report

Published June 28, 2019



[Introduction](#) [Total Maximum Daily Loads](#) [Basin Management Action Plans](#) [Minimum Flows and Minimum Water Levels](#) [Recovery and Prevention Strategies](#) [Contacts and Data](#)

Troubleshooting

Basin Management Action Plans

A BMAP is a blueprint for restoring impaired waters by reducing pollutants to meet the allowable loadings established in a TMDL. BMAPs contain a comprehensive set of strategies, such as permit limits on wastewater facilities, urban and agricultural best management practices, and conservation programs designed to implement pollutant reductions established by a TMDL. These broad-based plans are developed with local stakeholders and rely on local input and commitment for development and successful implementation. BMAPs are adopted by DEP Secretarial Order and are legally enforceable. This report provides details and information for 24 BMAPs adopted as of December 31, 2018.

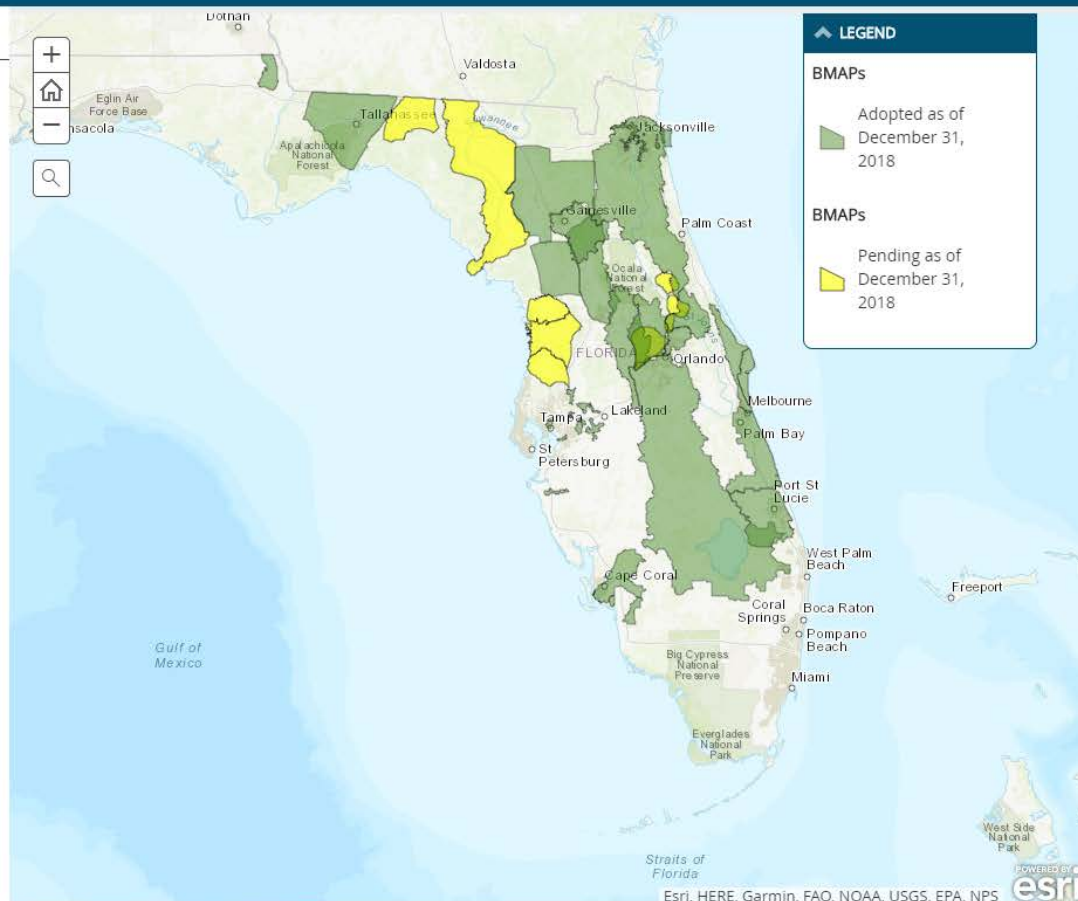
Navigation

Select any of the following topics for additional information about BMAPs. Clicking on the dots in the column to the left of the page links to these same sections, and clicking on the home icon returns you to the top of this page.

- [Northern Everglades and Estuaries Protection Program BMAPs](#)
- [Outstanding Florida Springs BMAPs](#)
- [Other Surface Water BMAPs](#)
- [Fecal Indicator Bacteria BMAPs](#)

How to Use This Report

The management actions listed in the BMAPs comprise local projects proposed and committed to by counties, municipalities, special districts, private industrial facilities, wastewater utilities, commercial





GovDelivery Notifications

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<https://floridadep.gov/dear/dear/content/subscribe>

Once at the address above, the paragraph below should appear:

Basin Management Action Plan Notifications

Thank you for your interest in the Florida Department of Environmental Protection's Basin Management Action Plan Program. To receive notifications on upcoming public meetings and the department's activities related to the development and implementation of BMAPs, please enter your email address at our [subscriber page](#) and you will be taken to the subscription page. You may update your subscription preferences at any time. Below is a brief description of each distribution list.

Subscribe via the subscriber page or the specific BMAP Topic



GovDelivery Notifications

- Select a BMAP Topic to receive relevant notifications for those BMAPs



- Enter your email address
- Click Submit
- Click Finish

Basin Management Action Plans (BMAP) Updates/Notifications Topics	Notifications on upcoming public meetings and the department's activities related to the development and implementation of BMAPs
<u>All Updates/Notification</u>	For all BMAPs statewide
<u>Bacteria BMAPs</u>	For Bacteria (pathogen) BMAPs statewide
<u>Central Florida</u>	For waters in the Central Florida region including the Lake Harney, Lake Monroe, Middle St. Johns River, and Smith Canal, Lake Jesup Watershed, Ocklawaha River, Orange Creek, and Wekiva River BMAPs.
<u>Indian River Lagoon</u>	Indian River Lagoon Basin
<u>Northeast Florida</u>	For waters in the Northeast Florida region including the Lower St. Johns BMAP
<u>Northern Everglades</u>	For waters in the Northern Everglades region including the Caloosahatchee River and Estuary, Lake Okeechobee, and St. Lucie River and Estuary BMAPs.
<u>Northwest Florida</u>	For waters in the Northwest Florida region including Apalachicola River, Chipola River, Choctawhatchee Bay, St Andrews Bay, Pensacola, and Perdido Bay BMAPs
<u>Southeast Florida</u>	For waters in the Southeast Florida region including Lake Worth Lagoon, Palm Beach Coast, Southeast Coast, and Biscayne Bay BMAPs
<u>Southwest Florida</u>	For waters in the Southwest Florida region including the Everglades West Coast BMAP, Charlotte Harbor Basin, Sarasota River, Peace River, Myakka River, and Upper Peace Chain Of Lakes.
<u>Springs</u>	For Springs BMAPs statewide



Next Steps

- *Submit projects and supporting information by 8/30*
- *Calculate credits for all existing and new projects*
- *Finalize draft allocations*
- *Develop draft revised BMAP document*
- *Tentative meeting: October*



Contact Information

Sara Davis, Environmental Manager

850-245-8825

Sara.C.Davis@floridadep.gov



Questions & Comments



