



Caloosahatchee River and Estuary Basin Management Action Plan Technical Meeting

June 25, 2019



Agenda

- Objectives
- Background
 - Total Maximum Daily Loads (TMDLs)
 - Basin Management Action Plan (BMAP)
- Proposed Allocation Approach
 - Considerations
 - Methodology
- TMDL Prioritization Update
- C-43 Reservoir Water Quality Treatment Update
- Next Steps



Objectives

- Estimate existing conditions loads to the TMDL waterbodies across the Caloosahatchee River and Estuary watershed
- Develop allocations using the Hydrological Simulation Program – FORTRAN (HSPF) watershed model and the adopted TMDLs



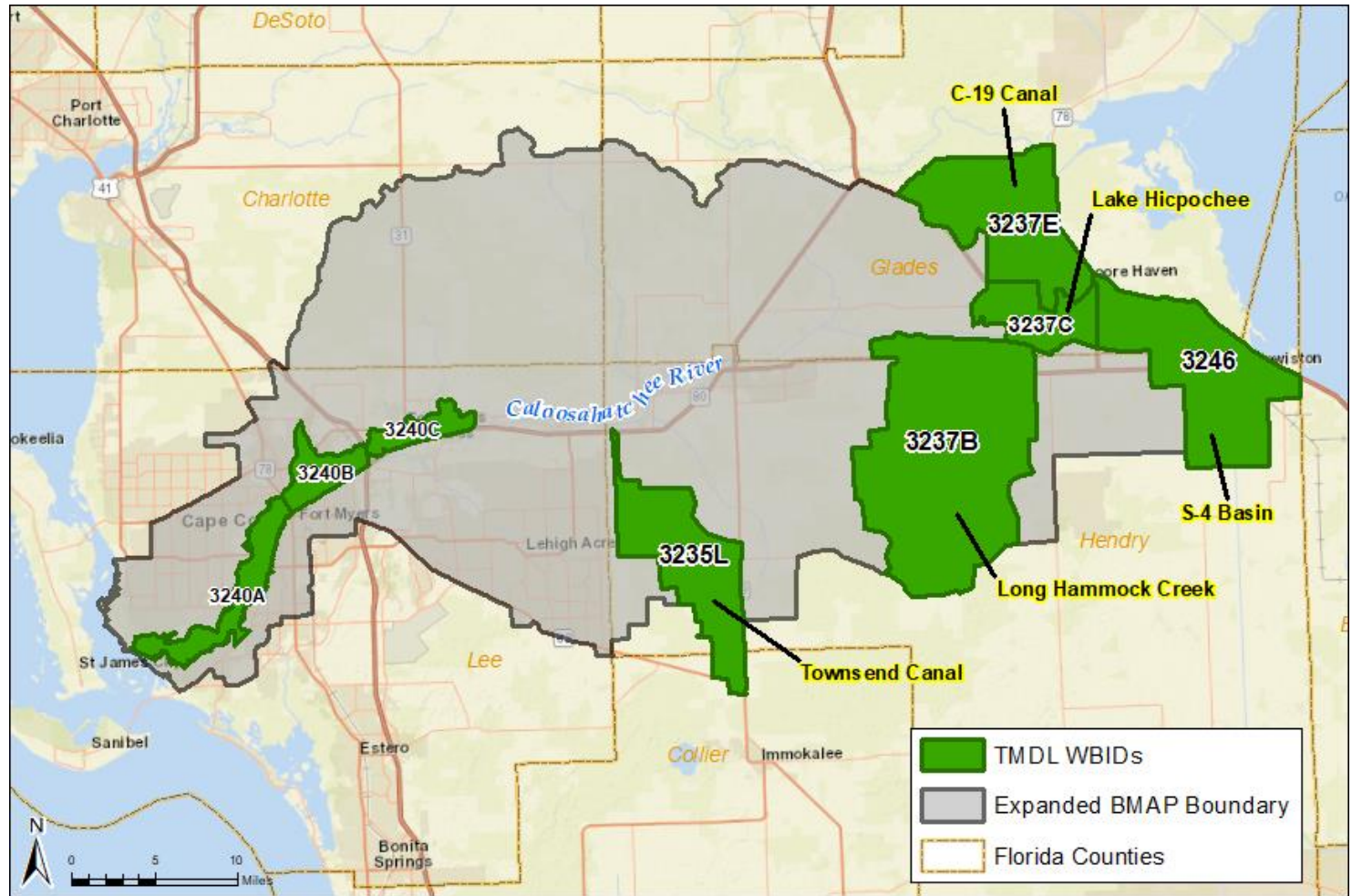
Background

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
- Revised BMAP to include:
 - Boundary expansion
 - Tributary TMDLs
 - New stakeholders
 - Monitoring network changes
 - Milestones





Questions & Comments





Proposed Allocation Approach

Considerations

Approach



Considerations

- TMDLs required % reductions
- Rainfall POR (for averaging) to calculate existing conditions
- Background loading from 2017 HSPF modeling
- Boundary changes and stakeholder jurisdictions



Considerations

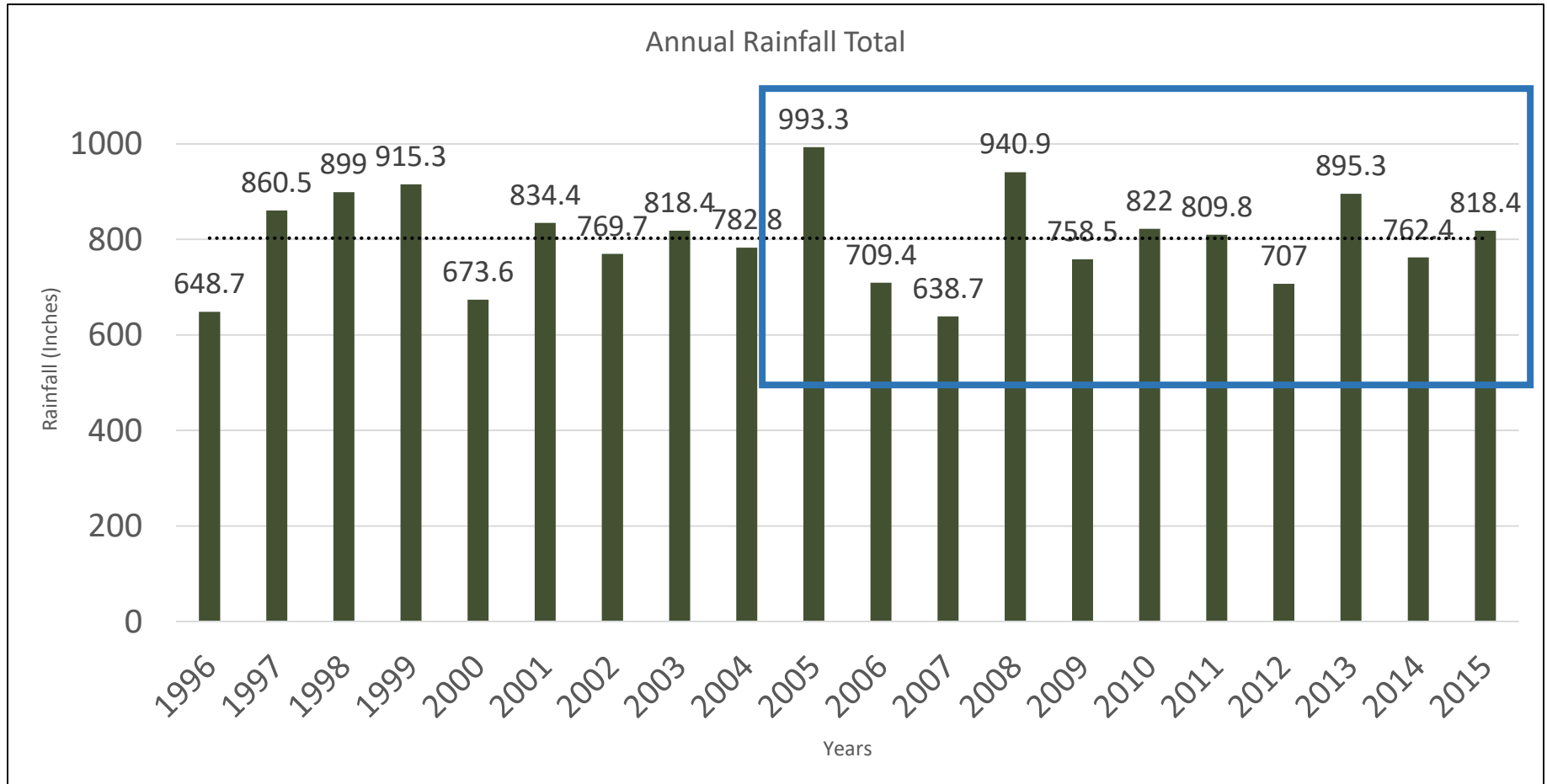
TMDLs required % reductions

Waterbody (WBID)	TN LA (% reduction)	TP LA (% reduction)
S-4 Basin (3246)	23%	27%
C-19 Canal (3237E)	48%	48%
Lake Hicpochee (3237C)	2%	2%
Long Hammock Creek (3237B)	42%	42%
Townsend Canal (3235L)	37%	38%
3240A, 3240B, 3240C	23%	N/A



Considerations

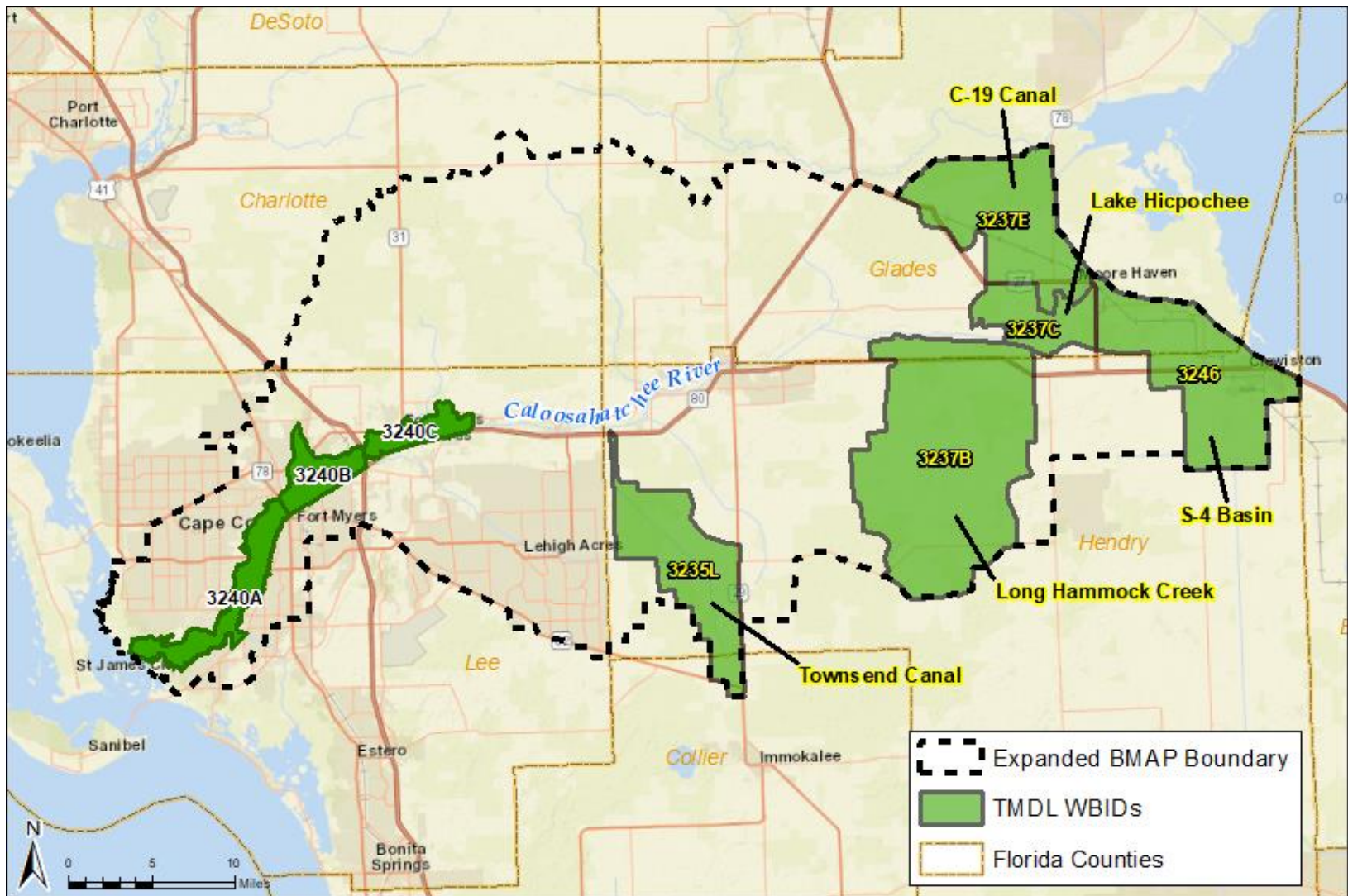
Precipitation





Considerations

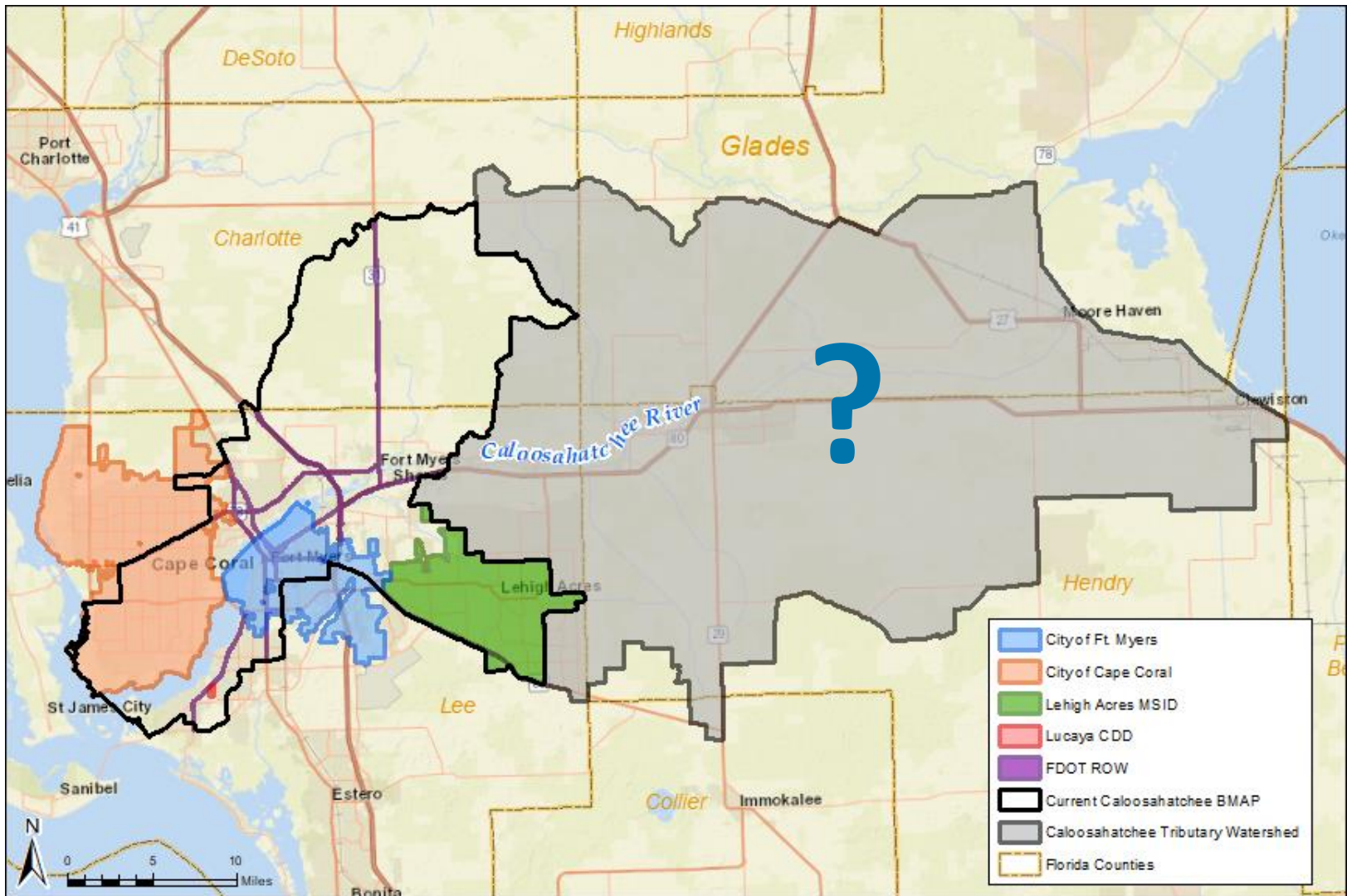
BMAP Boundary Expansion





Considerations

Stakeholder jurisdictions





Allocation Approach

Methodology - Estuary

PART A – requirements for Estuary

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



Allocation Approach

Methodology - Estuary (continued)

- Calculate the required reductions for each stakeholder
 - Basin wide required reductions (23% times existing load) times stakeholder's percentage of total non-background
- Example calculations table:

Entity	Existing load	Percent of total load	Required Reductions
A	10,980	6 %	2,525.4
B	85,401	43 %	19,642.2
C	102,480	51 %	23,570.4
Total	198,861	100 %	45,738.0



Allocation Approach

Methodology - Tributaries

PART B – requirements for tributary stakeholders

- Identify the stakeholders within each WBID
- Calculate average annual TN and TP loads from model outputs to obtain stakeholder existing loads
- Calculate the required reductions for each stakeholder
 - Stakeholder's tributary reduction may cover their estuary reduction
- Example calculations table:

Entity	Tributary total required load reductions	Required tributary reductions	Required estuary reductions	Final required reductions
A	15,000	4,500	2,525.4	4,500
B	3,000	2,250	19,642.2	19,642.2
C	1,000	950	23,570.4	23,570.4
Total	19,000	N/A	N/A	47,532.6



Questions & Comments





TMDL Prioritization Update

Mid-Process Update

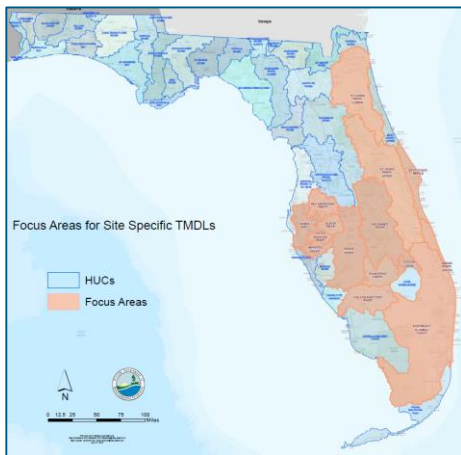
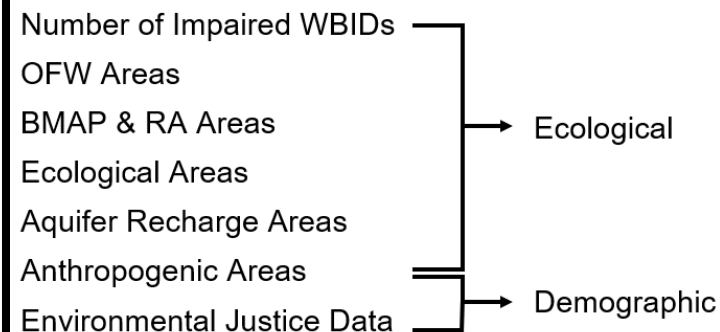


TMDL Prioritization Update

303(d) Long-Term Vision announced in Dec. 2013

- Provided a framework for greater efficiency & success in achieving WQ
- Removes the “one size fits all” expectations
- Ensures accountability through new measures (areas addressed by TMDLs & recognition of TMDL alternatives)
- Implemented in FFY16 (Oct. 2015)

Indicators



Check-In period (re-evaluate) FFY19

- Perform the original analysis but with updated data and layers
- Top ranking HUCs selected has not changed (15 total)
- WBIDs added are concentrated in the Kissimmee River HUC, Fisheating Creek HUC and Taylor Creek HUC
- Aligns with Governor Executive Order #19-12 (*Achieving More Now For Florida's Environment*)



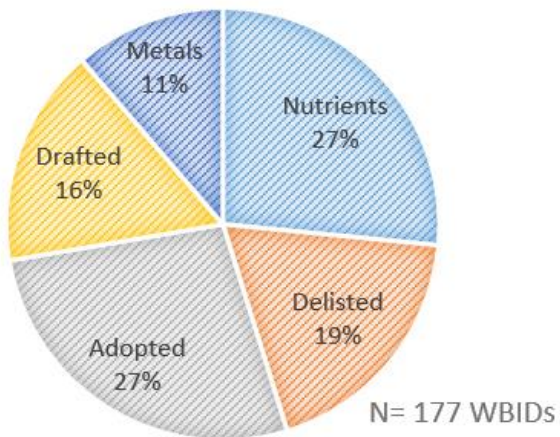
TMDL Prioritization Update

Updated Priority

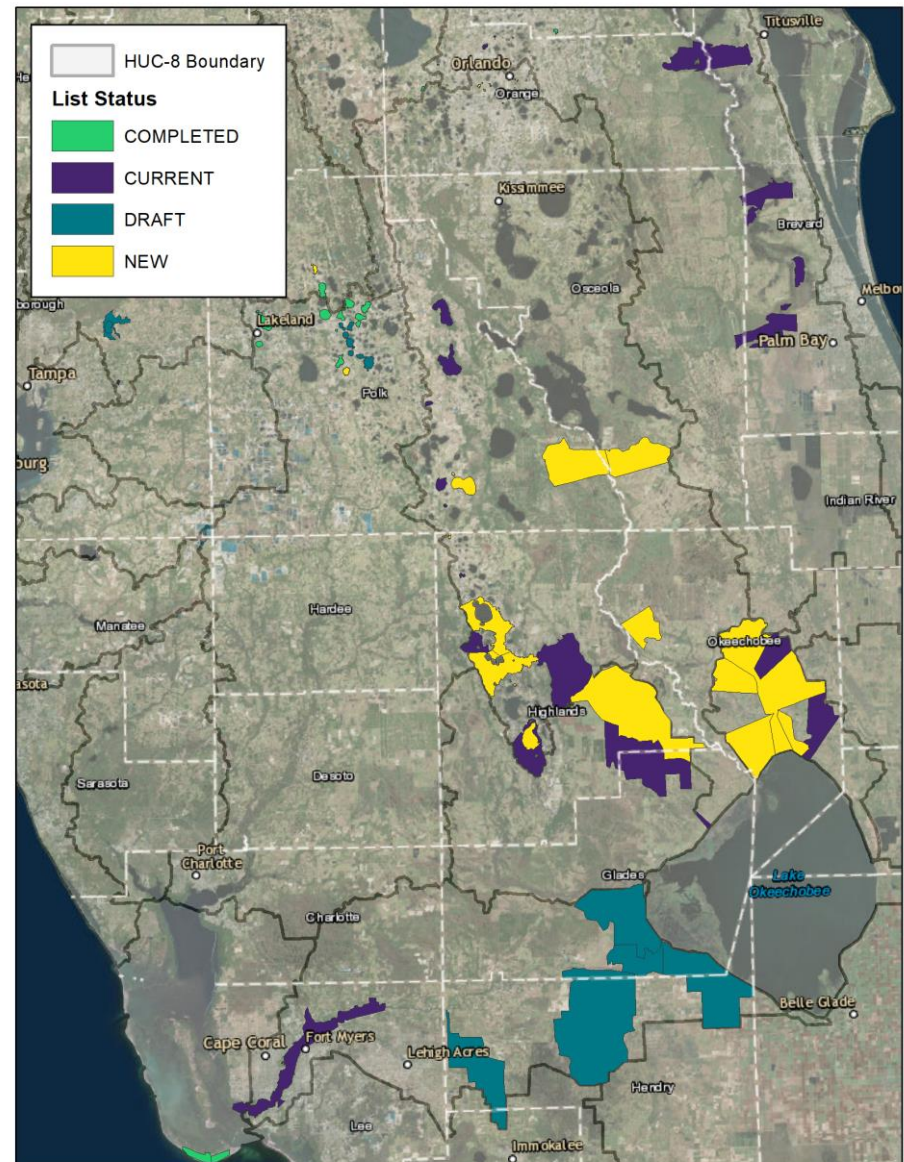
- Necessary due to DEP reaching goals early!
- Required following the process (using previous methods) with updated data

TMDL WORKLOAD 2015-2022

UPDATED DEC. 2018



6/25/2019





TMDL Prioritization Update

Contact Info

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Documentation:

<https://floridadep.gov/dear/water-quality-evaluation-tmdl>

Story Map:

<https://arcg.is/LvC10>



C-43 Reservoir Water Quality Treatment Update

Feasibility Study



C-43 Reservoir

Water Quality Feasibility Study

- Identifying Opportunities to provide additional treatment and improve the water quality leaving the C-43 Reservoir project is the Primary Objective
- Evaluate Treatment Options Including:
 - ✓ Pre-treatment (Prior To Entering Reservoir)
 - ✓ In-reservoir treatment
 - ✓ Post Storage treatment
- The Goal of the Study is to Identify at a Minimum Three Alternatives that are:
 - ✓ Cost-effective and technically feasible
 - ✓ Use conventional and/or innovative treatment methods
 - ✓ Consider biological, chemical and physical water quality treatment technologies
 - ✓ Scalable and “available” for long term
 - ✓ Compatible with the objectives of the C-43 Reservoir Project



C-43 Reservoir Update

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Next Steps

Send to
Kevin and Sara

- *Comments on methodology by July 9, 2019*
- *Submit/confirm jurisdictional shapefiles*
- *Apply methodology to develop draft allocations*
- *Develop draft revised BMAP document*
- *Tentative meetings: August, October*



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Questions & Comments



