# Lake Okeechobee Basin Management Action Plan 5-Year Review Kickoff and Annual Meeting

December 13, 2018

# Agenda

- *Overview of Lake Okeechobee Basin Management Action Plan (BMAP)*
- *Statewide Annual Report*
- *5-Year Review*
- *Watershed Assessment Model (WAM) Updates*
- *Next Steps*

# Overview of Lake Okeechobee BMAP

*Lake Okeechobee Total Maximum Daily Load (TMDL)*

*Lake Okeechobee BMAP*

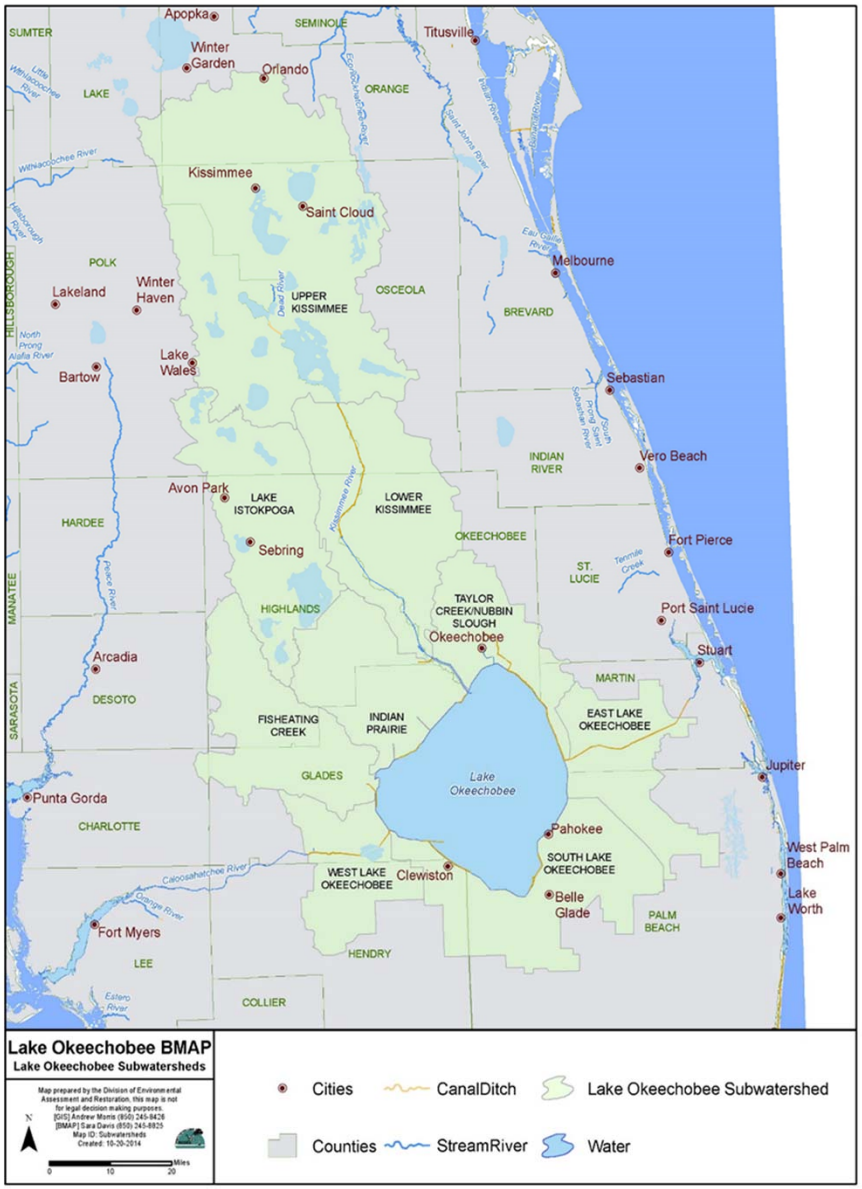
*Lake Okeechobee BMAP Stakeholders*

# Lake Okeechobee TMDL

- Total maximum daily load (TMDL) for total phosphorus (TP) adopted in 2001
- TMDL is a TP load of 140 metric tons per year (mt/yr):
  - 35 mt/yr fall directly on the lake through atmospheric deposition
  - Remaining 105 mt/yr allocated to the entire Lake Okeechobee Watershed (LOW)
- TMDL attainment calculated using a 5-year rolling average of the monthly loads calculated from measured flow and concentration values

# Lake Okeechobee BMAP

- BMAP adopted in December 2014
- Focus is on project implementation in the six sub-watersheds north of Lake Okeechobee
- Project reductions spread over a ten-year time frame:
  - Allows Coordinating Agencies to include long-term projects and develop additional projects to help meet the TMDL



# Lake Okeechobee BMAP

## *Stakeholders*

| Type of Entity | Participant |
|---|---|
| **Counties** | Glades<br>Highlands<br>Martin<br>Okeechobee<br>Orange<br>Osceola<br>Polk |
| **Municipalities** | City of Avon Park<br>City of Kissimmee<br>City of Edgewood<br>City of Okeechobee<br>City of Orlando<br>City of Sebring |
| **Special Districts** | Okeechobee Utility Authority<br>Istokpoga Marsh Watershed Improvement District<br>Reedy Creek Improvement District<br>Spring Lake Improvement District |

| Type of Entity | Participant |
|---|---|
| **Agencies** | FDACS<br>DEP<br>SFWMD<br>Southwest Florida Water Management District<br>St. Johns River Water Management District<br>Florida Department of Transportation District 1<br>Florida Department of Transportation District 4<br>Florida Department of Transportation District 5 |
| **Other Interested Parties** | Agriculture<br>Archbold Biological Station<br>Audubon of Florida<br>Conservancy of Southwest Florida<br>Everglades Foundation<br>Florida Fruit and Vegetable Association<br>Florida Farm Bureau<br>Lee County Board of County Commissioners<br>Lykes Ranch<br>U.S. Department of Agriculture – Natural Resources Conservation Service<br>One Florida Foundation<br>Soil Water Engineering Technology, Inc.<br>Southeast Milk, Inc.<br>Sugar Cane Growers Cooperative of Florida |

# Statewide Annual Report (STAR)

*STAR Background*

*STAR 2018 Progress*

*STAR 2019 Timeline*

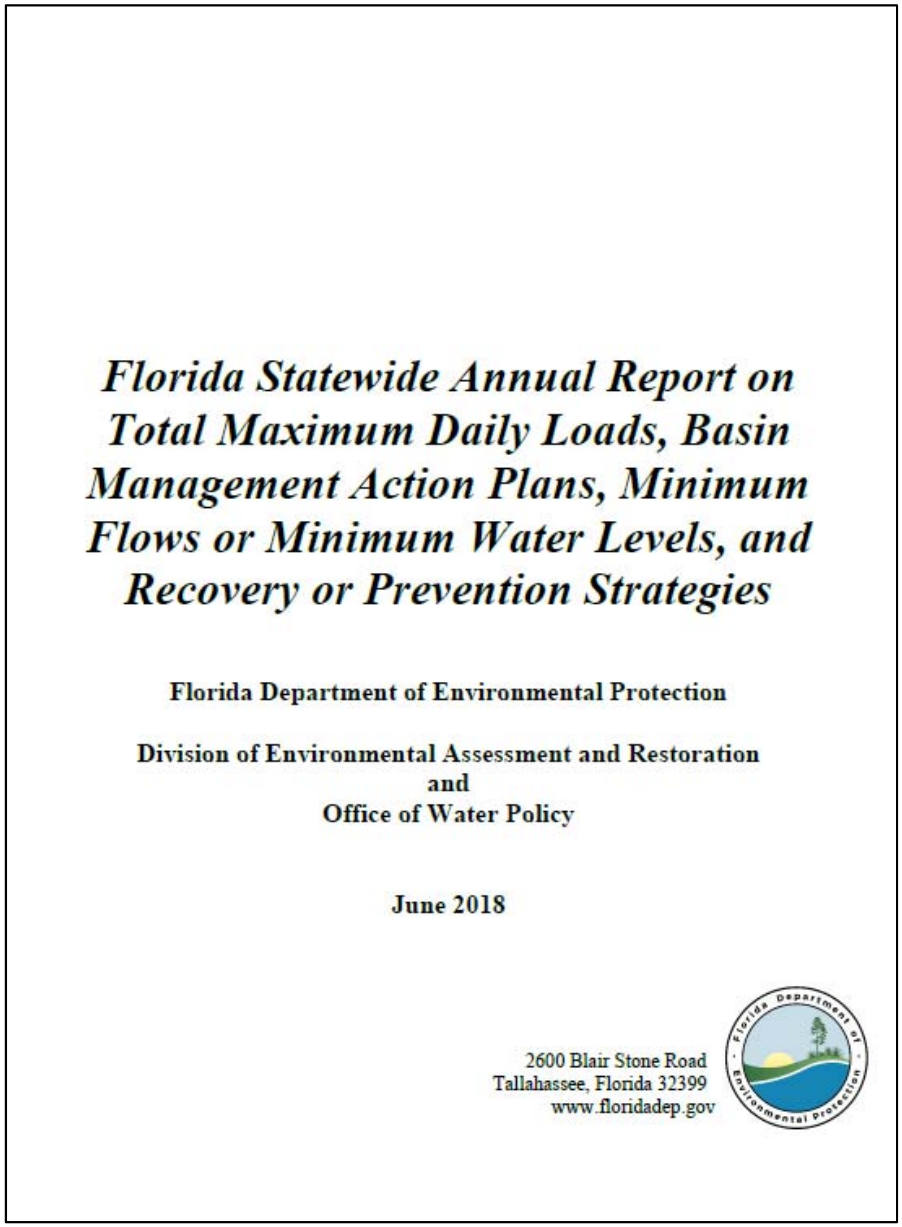
# STAR Background

- Requirement under Section 403.0675 Florida Statutes (F.S.) to provide an annual update to the Governor and Legislature
- Summarizes accomplishments in the BMAPs **statewide**
- Reports on restoration projects and management strategies
- All BMAP **reporting periods** align with calendar year
- Submitted to the Governor and the Legislature by **July 1** of each year
- Annual meetings → opportunity to highlight stakeholder activities

# STAR 2018

**First STAR submitted to the Governor and the Legislature June 29, 2018**

https://floridadep.gov/STAR



*Florida Statewide Annual Report on Total Maximum Daily Loads, Basin Management Action Plans, Minimum Flows or Minimum Water Levels, and Recovery or Prevention Strategies*

Florida Department of Environmental Protection

Division of Environmental Assessment and Restoration
and
Office of Water Policy

June 2018

2600 Blair Stone Road
Tallahassee, Florida 32399
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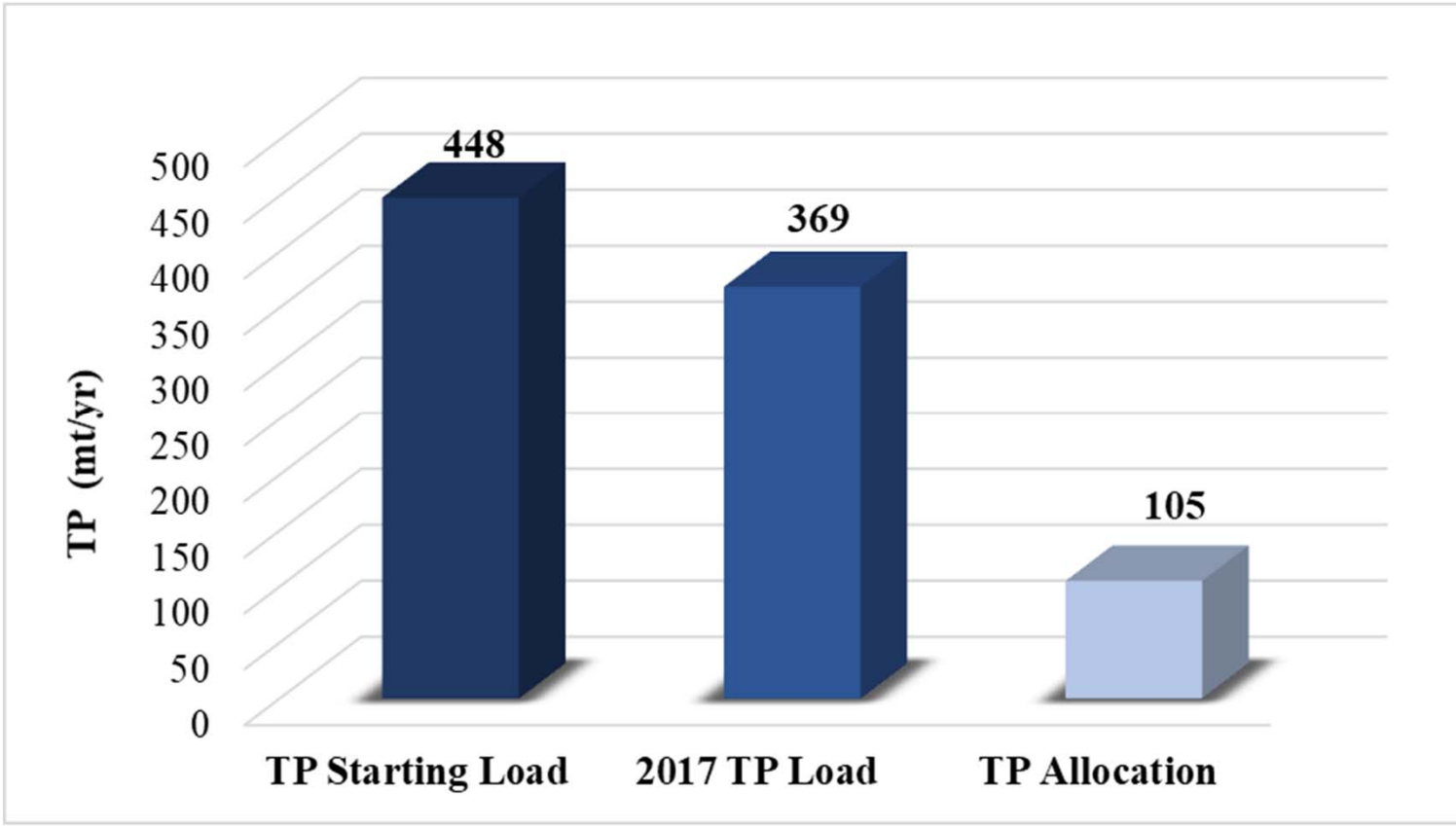
# Progress towards TMDL

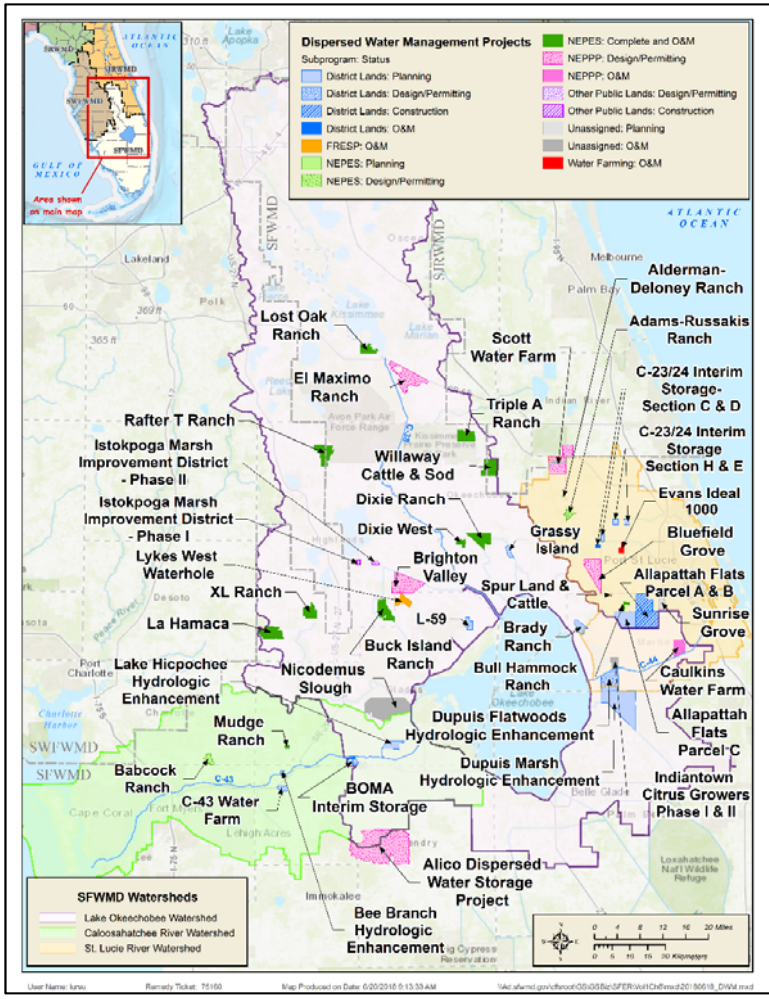
- Through December 31, 2017:
  - 166 projects completed
  - Additional 54 underway or planned projects
  - Estimated TP reductions 79.7 mt/yr
  - 23.2 % of reductions needed to meet the TMDL



# Coordinating Agencies

## *Projects Under Development*

- Dispersed Water Management (DWM)
  - Provide shallow water storage, detention
  - Minimize runoff and discharge
  - Reduce nutrient loads
  - Expand groundwater recharge opportunities
- Stormwater Treatment Area (STA)
- Legislative Cost-Share Appropriation Program (Dairy Remediation)
  - Solicit for dairy project proposals annually
  - FDACS/DEP committee review and rank
  - Cost-share selected projects
- Inactive Dairies – Lagoon Remediation



# Coordinating Agencies

## *Projects Under Development*

- Inactive Dairies - Lagoon Remediation (complete)
- Brighton Valley DWM (underway)
- Lakeside Ranch Phase II (underway)
- El Maximo DWM (underway)
- Legislative Dairy Remediation Cost-Share Appropriation Program (underway)
  - Six northern sub-watersheds
- PL-566 Funded/Fisheating Creek Structure (planned)
- Rolling Meadows Wetland Restoration Phase II (planned)
- SR 710 Regional Project (planned)

# STAR 2019

- Request to update existing projects and add new or planned projects
- Instructions provided, list of project types
- Confirm ongoing projects are still being implemented
- Complete “not provided” information
- Compile future projects for 5-Year Review

# STAR 2019 Timeline

# Questions & Comments

# Upcoming 5-Year Review

*Legislative Requirements*

*Tentative Timeline*

*Preview of the 5-Year Review*

# Legislative Requirements

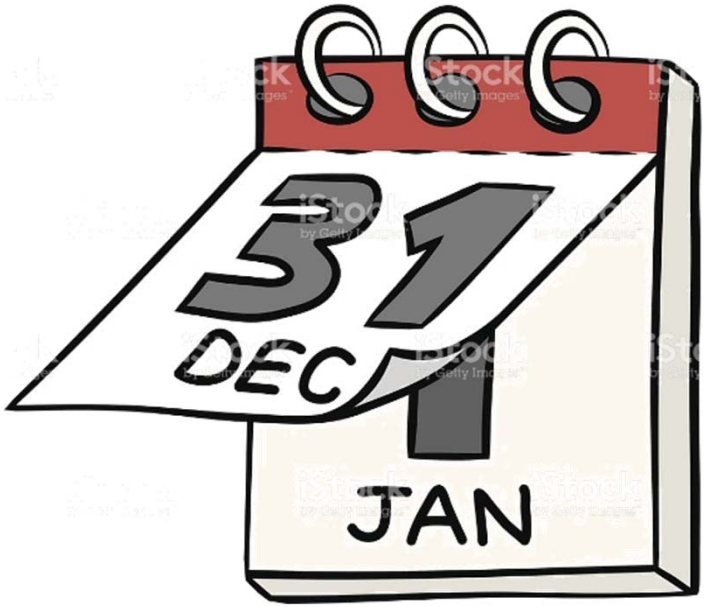
*Chapter 373.4595 (4), F.S*

- Original BMAP adopted in December 2014
  - 5-Year Review finalized by end of December 2019
  - Review provided to the Governor, the President of the Senate, and the Speaker of the House of Representatives

- Review to include:
  - 5-year milestones towards meeting TMDLs 20 years after adoption
  - Assessment of progress towards meeting the milestones
  - Determination of whether TMDLs can be met in 20 years
    - If not, explanation of why
  - Identification of recommended revisions to the BMAP
    - WAM, potential allocations, monitoring network, etc.
  - Recommendations for the Lake Okeechobee Watershed Construction Project (LOWCP)

# Tentative Timeline

- August 2018 through February 2019
  - WQ Evaluation
- October 2018 through June 2019
  - LOWCP Review and Recommendations
- April 2019
  - Technical stakeholder meeting
- June 2019
  - STAR 2019
- July 2019
  - Stakeholder projects collected for milestones
- October 2019
  - 5-Year Review stakeholder meeting
- December 2019
  - Finalize 5-Year Review
  - Update BMAP



# 5-Year Review

*Report Format*

- Chapter 1: Background Information
- Chapter 2: Assessing Progress


- Chapter 3: Recommendations

# Chapter 1

*Background Information*

1.1 Water Quality Standards and TMDL

1.1.1 Lake Okeechobee TMDL

1.2 Lake Okeechobee BMAP

1.2.1 Lake Okeechobee Pollutant Reduction and Discharge Allocation

# Chapter 2

*Assessing Progress*

2.1 Projects to Achieve the TMDLs

- Projects submitted by year
- Status of all projects by stakeholder

2.2 Coordinating Agency Projects and Initiatives

- 2.2.1 Interagency Agreement
  - 2.2.1.1 DEP Activities
  - 2.2.1.2 SFWMD Activities
  - 2.2.1.3 FDACS/Agricultural Activities
- 2.2.2 FDOT Activities
- 2.2.3 Alternative Nutrient Reduction Technologies

# Chapter 2 (cont.)

*Assessing Progress*

2.3 Lake Tohopekaliga Nutrient Reduction Plan (NRP)

2.4 Water Quality Monitoring and Evaluation

- Working with Coordinating Agencies
- POR: WY2009 through WY2018
- Parameters: focus on TP, review of TN
- Geographic Extent: Lake O BMAP
- Statistical Analyses
  - Seasonal Kendall trends with months as seasons
  - Loads, flow-weighted mean concentrations, and concentrations
- Summary Analyses
  - Trend of five-year rolling averages of loads
  - Annual loads to lake
  - Spatial representation of results

# Chapter 3

*Recommendations*

3.1 Milestones

3.2 BMAP Modeling


3.3 Sub-watershed Allocations

3.4 Water Quality Monitoring Revisions

3.5 Lake Okeechobee Watershed Construction Project (LOWCP) Revisions

# 3.1 Milestones

BMAP Adopted **2014**

5-Year **Review** **2019**

10-Year Review **2024**

15-Year Review **2029**

Goal:* Meet TMDLs by **2034**

*373.4595 F.S. requires determination of whether TMDLs can be met in 20 years. If not, explanation of why.

# 3.2 BMAP Modeling

- Expansion of Model Domain
  - Now can include southern three sub-watersheds in BMAP
- Sub-watershed Loads
  - Recalculate loads by sub-watershed
  - Recalculate project load reductions
- Evaluation of Pre-drainage Conditions
- Abatement Strategies

# 3.3 Allocations

- TMDL currently allocated to entire LOW
- With updated model, allocations can be calculated
- Recommended approach to allocations for updated BMAP
  - Considering calculating sub-watershed allocations for BMAP update
  - Other allocation approaches?

# 3.4 Monitoring


Potential Revisions:

- Restructure network into tiers
- Add new stations
- Remove stations not used
- Identify areas where monitoring is needed

# 3.5 LOWCP

- LOWCP
  - Consolidates restoration efforts
  - Ag BMPs
  - Regulations
  - Treatment wetlands
  - Storage
- Working with SFWMD
- Identifying all projects and programs under LOWCP
- Adding appropriate projects to BMAP
  - Estimate additional reductions
- Recommending modifications

# Appendices

- A - BMAP Projects
- B - Future BMAP Projects
- C - Agricultural Enrollment and Reductions
- D - BMAP Monitoring Network and Recommendations
- E - Water Quality Data Processing and Analysis Methods
- F - Proposed Allocation Methodology

# Coordinating Agencies

- Interagency Agreement
  - FDACS, SFWMD
- Project information and updates
- Monitoring data
- Water quality evaluation
- LOWCP modifications

# Questions & Comments

# Watershed Assessment Model (WAM) Updates

*2018-2019 Contract*

*Pre-drainage Characterization and Abatement Strategies*

# Next Steps

*STAR*

*Stakeholder Meetings*

*5-Year Review*

# Next Steps

- Submit project updates by **January 15th**
- Stakeholder meeting in **Spring 2019**
- One-on-one stakeholder conversations about future projects
- STAR Submitted **June 2019**
- Future projects collected **July 2019**
- Stakeholder meeting **October 2019**
- 5-Year Review **December 2019**

# Contact Information

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FLORIDA DEPARTMENT OF
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