



*Florida Department of
Environmental Protection*

Central Indian River Lagoon Basin Management Action Plan

June 27, 2012



Overview of the BMAP

DRAFT

BASIN MANAGEMENT ACTION PLAN

for the Implementation of Total Maximum Daily Loads for Nutrients
Adopted by the Florida Department of Environmental Protection

in the

Indian River Lagoon Basin Central Indian River Lagoon

developed by the
Central Indian River Lagoon Stakeholders

in cooperation with the
Florida Department of Environmental Protection
*Division of Environmental Assessment and Restoration
Bureau of Watershed Restoration
Tallahassee, Florida 32399*

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Chapter 1: Context, Purpose, and Scope of the Plan





Plan Scope

- Focuses on the Central Indian River Lagoon (IRL) subbasin and three project zones:
 - Central A – Melbourne Causeway (U.S. 192) to the north tip of Grant Farm Island.
 - Central SEB – Grant Farm Island to Wabasso Causeway (County Road 510).
 - Central B – Wabasso Causeway to the boundary between Indian River County and St. Lucie County.
- Note: new maps are being prepared to show the waterbody identification (WBID) numbers and the entities in each project zone.





TMDLs Addressed in the BMAP

- The TMDLs for the IRL Basin were adopted in March 2009.
- The TMDLs identify total nitrogen (TN) and total phosphorus (TP) reductions needed to allow seagrass re-growth at historical depth limits.

WBID	Parameter	TMDL (lbs/yr)	WLA _{ww} (lbs/yr)	WLA _{sw}	LA (lbs/yr)
5003D+2963A	TN	684,715	831	56%	683,884
5003D+2963A	TP	111,594	122	48%	111,472
5003B+5003C	TN	278,273	25,391	56%	252,882
5003B+5003C	TP	53,599	1,949	48%	51,650



Seagrass Evaluation

- All three project zones in the Central IRL are meeting the seagrass depth limit targets:
 - For the period of 2003-2007 and the period of 2005-2009.
 - Therefore, additional reductions are not required in this iteration of the BMAP and allocations to the stakeholders were not assigned.





Stakeholder Involvement

- Technical meetings began in June 2009.
 - The purpose of these meetings was to organize and review the technical information that is the basis of the BMAP, gather information to aid in the development of the BMAP, and identify management actions that improved water quality.
- Policy briefings began in January 2012.
 - The purpose of the briefings was to obtain feedback on the BMAP process from the policy makers from each responsible BMAP entity.





BMAP Purpose

- The purpose of the BMAP is to document projects that have been completed that contributed to seagrass success and to identify projects that will occur in the future to continue seagrass improvement.
- Future projects are not a BMAP requirement since additional nutrient reductions are not required in this first BMAP phase.
 - Including future projects in the BMAP may help stakeholders obtain funding.





BMAP Purpose, continued

- The BMAP will also help to increase coordination between state and local governments for surface water quality restoration, and to keep restoration of the Central IRL as a priority for the local communities and the public.





Comments and Questions on Chapter 1





Chapter 2: Central Indian River Lagoon Basin Setting





Basin Hydrology

- The Central IRL is located within 28 kilometers of either the Sebastian or Fort Pierce Inlets.
 - Average flushing rate is 10 times higher than the North IRL and 15 times higher than Banana River Lagoon.
- Influenced by freshwater inputs from the major tributaries and water control and improvement district canals.
- Construction of the causeways has narrowed portions of the lagoon making it more susceptible to watershed pollutants.





Land Uses in the Basin

- The Central IRL watershed covers about 283,609 acres (not including the lagoon).
- Based on 2000 land uses:
 - 34.2% of the area is urban;
 - 26.9% of the area is agricultural;
 - 13.7% of the area is upland forest;
 - 10.4% of the area is wetlands; and
 - 14.9% of the area is rangeland, water, and barren land.
- Note: A new map is being prepared to show the land uses in the Central IRL.





Comments and Questions on Chapter 2





Chapter 3: Pollutant Sources





Sources in the TMDL

- Point source facilities;
- Municipal separate storm sewer systems (MS4s);
- Nonpoint stormwater sources;
- Agriculture; and
- Atmospheric deposition directly on the lagoon.
 - Considered a background, uncontrollable source in the TMDL; therefore, reductions were not required of this source.





Point Source Facilities

- The point source facilities were assigned allocations in the TMDL.
- The Central IRL facilities are:
 - Brevard County – South Beaches wastewater treatment facility (WWTF);
 - Melbourne – Grant Street WWTF;
 - Brevard County – Barefoot Bay WWTF;
 - Indian River County – Hobart Reverse Osmosis (RO);
 - Vero Beach WWTF;
 - Vero Beach RO;
 - Indian River County – West Regional WWTF; and
 - Indian River County – South County RO.





MS4s

- The MS4s are all Phase II except for the Turnpike, which is Phase I:
 - Brevard County;
 - Indian River County;
 - St. Lucie County;
 - City of Fort Pierce;
 - City of Melbourne;
 - City of Palm Bay;
 - City of Sebastian;
 - City of Vero Beach;
 - City of West Melbourne;
 - Town of Indialantic;
 - Town of Indian River Shores;
 - Town of Malabar;
 - Town of Melbourne Beach;
 - Florida Department of Transportation (FDOT) District 4;
 - FDOT District 5; and
 - Turnpike Enterprise.





Non-MS4s

- The urban stormwater areas outside an MS4 are:
 - City of Fellsmere;
 - Town of Grant-Valkaria;
 - Town of Melbourne Village;
 - Town of Orchid;
 - Fellsmere Water Control District (WCD);
 - Fort Pierce Farms WCD;
 - Indian River Farms WCD;
 - Melbourne-Tillman WCD;
 - Sebastian River Improvement District; and
 - Vero Lakes WCD.





Agriculture

- The primary agricultural land use in the Central IRL subbasin is citrus.
- Other agricultural land uses include cow-calf operations, nurseries, row/field crops, and horse farms.
- Since the 2000 land uses, there have been significant changes in agriculture due to urban encroachment, citrus health issues and the economic downturn.





Enforcement of BMAPs

- A BMAP is developed collaboratively with stakeholders to meet provisions in Section 403.067(7), Florida Statutes (F.S.).
- For point sources, BMAPs are enforceable through WWTF and MS4 National Pollutant Discharge Elimination System (NPDES) permits.
- For nonpoint sources, BMAP projects are enforceable through the BMAP itself.
- For agriculture, best management practices (BMPs) or monitoring is required.
- BMAPs are adopted by FDEP Secretarial Order.





Comments and Questions on Chapter 3





Chapter 4: Management Actions





Project Collection

- Stakeholders submitted projects that were completed or planned to achieve TN and TP reductions.
 - Future projects are not a BMAP requirement since additional reductions are not needed in this iteration.
- Projects completed since January 1, 2000 and later were eligible for credit.
- All projects must be located in the appropriate Central IRL project zone and address nutrients.
- Credit only counted for treatment above and beyond any permitted requirements.





Project Collection, continued

- Not all of the Central IRL BMAP projects were quantified:
 - Public education and outreach activities were not quantified because credit for these efforts is based on a percentage of the starting load for each entity and allocations were not calculated.
 - Some projects submitted by the WCDs could not be quantified because they do not fall into the typical stormwater BMP categories. FDEP is working with the WCDs to determine methods to quantify credit.





Central A Reductions

Type	Entity	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)
MS4	Brevard County	918	242.0
MS4	City of Melbourne	37	92.4
MS4	City of Palm Bay	7,641	1,129.7
MS4	City of West Melbourne	577	79.2
MS4	FDOT District 5	2,020	239.8
MS4	Town of Indialantic	Not quantified	Not quantified
MS4	Town of Melbourne Beach	1,197	317.2
Non-MS4	Melbourne-Tillman WCD	Not quantified	Not quantified
Non-MS4	Town of Melbourne Village	1	0.8
Total	Total	12,391	2,101.1





Central SEB Reductions

Type	Entity	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)
MS4	Brevard County	29,195	9,334.1
MS4	City of Sebastian	1,848	517.3
MS4	FDOT District 4	107	33.9
MS4	Indian River County	6,464	1,384.8
MS4	City of Fellsmere	104.0	31.8
Non-MS4	Fellsmere WCD	82.5	24.8
Non-MS4	Indian River Farms WCD	Not quantified	Not quantified
Non-MS4	Sebastian River Improvement District	Not quantified	Not quantified
Non-MS4	Town of Orchid	Not quantified	Not quantified
Total	Total	37,801	11,326.7

Note: Indian River County's vegetation removal credit may need to be revised based on the latest credit guidance.





Central B Reductions

Type	Entity	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)
MS4	City of Vero Beach	157	20.9
MS4	FDOT District 4	351	181.1
MS4	Indian River County	8,535	2,004.1
MS4	Turnpike Authority	26	17.3
Non-MS4	Indian River Farms WCD	Not quantified	Not quantified
Non-MS4	Sebastian River Improvement District	Not quantified	Not quantified
Total	Total	9,069	2,223.4

Note: Indian River County's vegetation removal credit may need to be revised based on the latest credit guidance.





Agriculture

- In the first five year BMAP period, the Florida Department of Agriculture and Consumer Services (FDACS) is proposing to implement BMPs on 50% of the agricultural lands.
- Reductions were assigned to agriculture for changes in land uses since 2000, either to urban uses or less intensive agriculture.





Comments and Questions on Chapter 4





Chapter 5: Assessing Progress and Making Changes





Seagrass Evaluation

- In year four of the BMAP, FDEP will use the 2007, 2009, 2011, and 2013 seagrass mapping data to reassess seagrass depth limit compliance.
- If the project zones continue to meet the TMDL depth limit targets, a second BMAP would not be needed.
- If during this assessment any of the project zones are no longer compliant, FDEP would ask for stakeholders in that project zone(s) to make reductions in the second BMAP.
- Even if a second BMAP is not needed, future assessments of the Central IRL could identify a nutrient impairment that would need to be addressed.





Tracking Implementation

- FDEP will work with the stakeholders to organize the monitoring data and track project implementation.
- This information will be organized into annual progress reports.
- The stakeholders will meet at least annually to review progress and modify project lists and the monitoring plan, as needed.





Monitoring Plan Objectives

- Primary objective: Track seagrass depth limit responses to BMAP implementation.
 - Compliance determined through the seagrass flyover mapping and aerial photography interpretation.
 - FDEP and the St. Johns River Water Management District (SJRWMD) will fund this.
- Secondary objective: Track trends in ambient water quality in the Central IRL and major tributaries.
 - Evaluated through data collected in the ambient monitoring network.





Monitoring by Stakeholders

- The following stakeholders have agreed to continue or add water quality monitoring in the basin:
 - SJRWMD; and
 - Indian River Farms WCD.
- Data from several U.S. Geological Survey (USGS) stations will also be used to track flow data.





Monitoring Network

- The monitoring network includes:
 - Central A – 7 existing monthly water quality stations, 2 USGS flow stations, and 1 proposed monthly water quality station (if funding is available).
 - Central SEB – 4 existing monthly water quality stations, 2 existing USGS flow stations, and 1 proposed monthly water quality station (if funding is available).
 - Central B – 7 existing monthly water quality stations, 4 existing USGS flow stations, and 3 existing quarterly water quality stations.





Data Management

- All ambient water quality data included in the BMAP monitoring must be collected following FDEP's standard operating procedures and should be uploaded to STORET.
- Any biological or storm event data collected will be maintained by the entity collecting the data.
- Seagrass data will be evaluated approximately every 2 years.
- Water quality data will be evaluated in year four of the BMAP.





Research Priorities

- Research priorities identified include:
 - Updated bathymetry coverage;
 - Seagrass transects monitoring;
 - Phytoplankton, drift algae, and microalgae monitoring;
 - Storm event monitoring at major outfalls;
 - Tracking watershed loads; and
 - Verifying BMP effectiveness, as needed.
- During the first BMAP iteration, stakeholders will work with the IRL National Estuary Program, SJRWMD and FDEP to prioritize research efforts and develop scopes of work to guide future efforts, as funding becomes available.





Comments and Questions on Chapter 5





Chapter 6: Commitment to Plan Implementation





Commitment to the BMAP

- The stakeholders have worked collaboratively to develop the BMAP.
- The stakeholders have demonstrated their willingness to confer with and support each other in their efforts.
- This chapter will include letters of commitment or resolutions of support for the BMAP provided by the stakeholders.





Letters of Commitment

- Providing a letter of commitment or resolution of support for the BMAP is not required.
- However, stakeholders in other basins have stated that having this letter provides a way to show support for the BMAP as staff and board/commission members change over time.
- An example letter will be provided. The wording and format can be modified to meet each stakeholder's needs.





Comments and Questions on Chapter 6





Appendices





BMAP Appendices

- Appendix A: TMDL Basin Rotation Schedule
 - Explains the FDEP watershed assessment cycle.
- Appendix B: Summary of Statutory Provisions Guiding BMAP Development and Implementation
 - Includes excerpts from Sections 403.067(6) and (7) in Florida Statutes
- Appendix C: Summary of EPA-Recommended Elements of a Comprehensive Watershed Plan
 - Outlines key elements in a watershed plan; necessary to obtain certain types of funding.





BMAP Appendices, continued

- Appendix D: Projects to Achieve the TMDL
 - Important appendix – project tables for each stakeholder.
 - *Please review the information in your project tables carefully.*
- Appendix E: Glossary of Terms
- Appendix F: Bibliography of Key References and Websites





Comments and Questions on Appendices





Steps to BMAP Adoption





Stakeholder and FDEP Staff Actions

Action	Responsible Party
Comments on first Draft BMAP due <i>July 13th</i>	Stakeholders
Technical meeting to review updated Draft BMAP	FDEP and Technical Stakeholders
Comments on second Draft BMAP due	Stakeholders
Policy briefing on final Draft BMAP	FDEP, Policy Makers, and Technical Stakeholders
Public meeting on BMAP	Public/FDEP
Public comment period closes (30 days after meeting)	FDEP
Review of public comments by staff complete (about 1 week after end of public comment period)	FDEP
Letters of commitment due for inclusion in BMAP package to FDEP Secretary	Policy Makers and Technical Stakeholders





FDEP Secretarial Adoption Process

- Brief FDEP DEAR management on BMAP.
- Brief FDEP Deputy Secretary on BMAP.
- Brief FDEP Secretary on BMAP and obtain Secretarial approval.
- Notify interested parties and place Florida Administrative Weekly (FAW) notice.
- End of challenge period (21-days after notice).
- BMAP adopted and enforceable (if there are no challenges).





Questions?

