

Florida Department of Environmental Protection



St. Lucie River and Estuary Basin Management Action Plan (BMAP)

March 13, 2013





Presentation Overview

- Review February 2013 allocation model updates.
- Discuss draft BMAP sections.
- Discuss draft BMAP review process.



February 2013 Allocation Model Updates



Allocation Model Updates

- Changes since January 16th meeting:
 - **Rounding Factors**
 - Added rounding factors to target loads per acre, starting loads, acres, allocations, and required reductions.
 - Factors were not included in any older version of model.
 - **Basin Runoff in C-44/S-153 Sub-basin**
 - Measured at S-308 and S-80 structures (1996-2005 data).
 - Per the South Florida Water Management District (SFWMD), 76.5% of the basin runoff actually reaches the estuary. The remaining 23.5% of the runoff enters Lake Okeechobee.
 - We adjusted the flows the C-44/S-153 sub-basin to account for this.
 - This change affected:
 - Target load per acre
 - Natural lands
 - Allocations/reductions for stakeholders in the C-44/S-153 sub-basin
 - Projects/project credits in C-44/S-153 sub-basin

Questions





Draft BMAP Sections



Draft BMAP

DRAFT

BASIN MANAGEMENT ACTION PLAN

**for the Implementation of Total Maximum Daily Loads for Nutrients
and Dissolved Oxygen Adopted by the Florida Department of
Environmental Protection**

in the

St. Lucie River and Estuary Basin

developed by the

St. Lucie River and Estuary Basin Technical Stakeholders

in cooperation with the

Florida Department of Environmental Protection

Division of Environmental Assessment and Restoration

Bureau of Watershed Restoration

Tallahassee, Florida 32399

March 2013



Draft BMAP Sections

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Acknowledgements

Allocation Entities	Agencies	Other Interested Parties
Agricultural Producers	Florida Department of Agriculture and Consumer Services	Florida Fruit and Vegetable Association
Martin County	Florida Department of Environmental Protection	Florida Oceanographic Society
Okeechobee County	South Florida Water Management District	St. Lucie West Services District
St. Lucie County	-	-
City of Fort Pierce	-	-
City of Stuart	-	-
Copper Creek Community Development District	-	-
Florida Department of Transportation-District 4	-	-
Turnpike	-	-
Hobe St. Lucie Conservancy District	-	-
North St. Lucie River Water Control District	-	-
Pal Mar Water Control District	-	-
Town of Sewall's Point	-	-
Tradition Community Development District	-	-
Troup-Indiantown Water Control District	-	-
Verano Community Development District	-	-



Executive Summary

- Summarizes report information on:
 - St. Lucie River and Estuary Basin;
 - Total maximum daily loads (TMDLs);
 - St. Lucie River and Estuary BMAP;
 - Key elements of the BMAP;
 - Anticipated outcomes of BMAP implementation;
 - BMAP cost;
 - BMAP follow-up; and
 - Commitment to plan implementation.



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



Background

- The BMAP represents the joint efforts of multiple stakeholders to prepare a restoration plan for the St. Lucie River and Estuary to work towards achieving TMDLs to restore the waterbodies in the basin.
- The BMAP includes projects that reduce watershed nutrient loading and a monitoring plan to guide effective long-term restoration efforts.



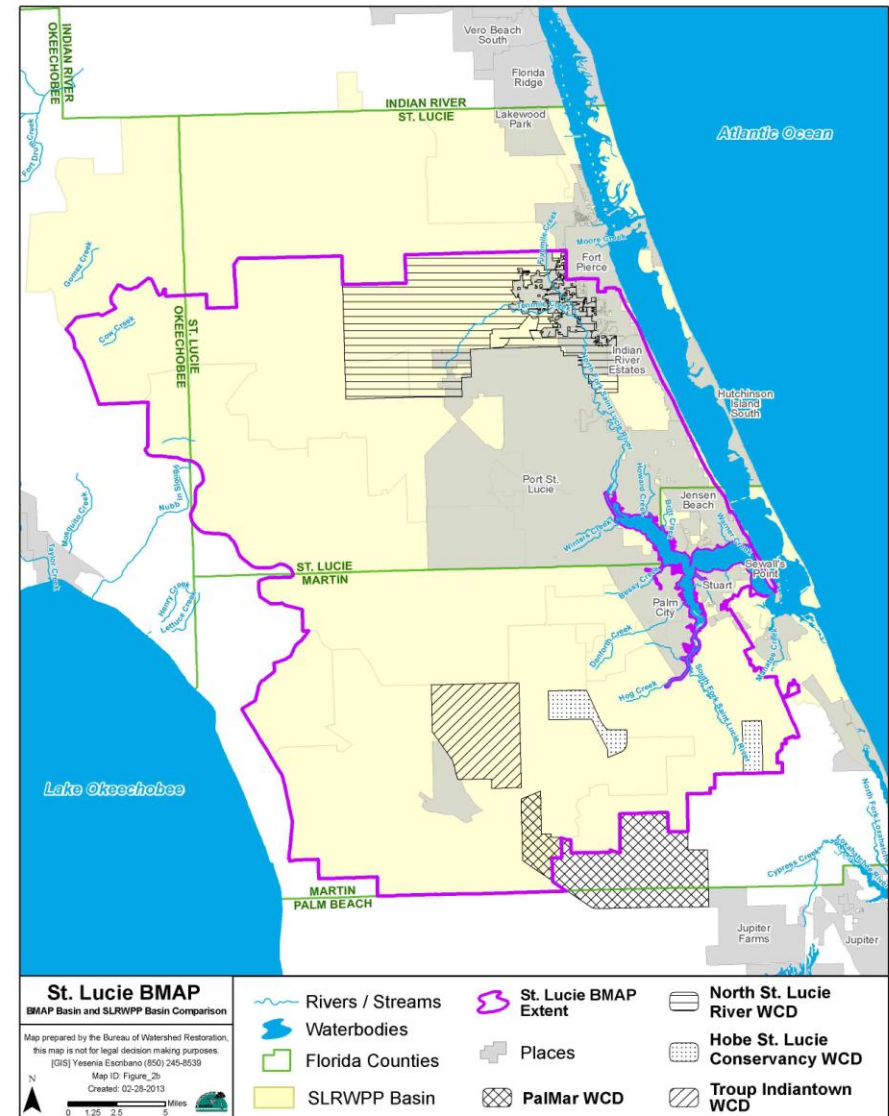
Stakeholder Involvement

- Technical meetings were held regularly throughout the BMAP development process.
- FDEP also met with stakeholders in one-on-one meetings to discuss project-specific information with stakeholders.
- All technical meetings were open to the public and noticed in the *Florida Administrative Weekly*, now known as the *Florida Administrative Register*.
- A public workshop will be held on **April 10, 2013**.



Includes 6 sub-basins:

- Basins 4, 5, and 6;
- C-23;
- C-24;
- C-44 and S-153;
- North Fork; and
- South Fork.





Plan Purpose and Scope

- The purpose of this BMAP is to implement total phosphorus (TP), total nitrogen (TN), and the related biochemical oxygen demand (BOD) reductions to achieve the St. Lucie River and Estuary TMDLs.
- The TMDL reductions will be achieved over a 15-year period.
- The first iteration of the BMAP will cover a 5-year period.
 - Approximately mid-2013 through mid-2018.
- Each entity is required to achieve 30% of its TN and TP reductions in this first iteration.



Basin TMDLs

WBID	Waterbody	Parameter	Annual TML Target (lbs or [mg/L])	NPDES Stormwater (% Reduction)	Load Allocation (% Reduction)
3193	St. Lucie Estuary	TN	[0.720]	21.4%	21.4%
3193	St. Lucie Estuary	TP	[0.081]	41.3%	41.3%
3194	North Fork	TN	140,134	25.0%	25.0%
3194	North Fork	TP	15,765	42.2%	42.2%
3194	North Fork	BOD	[2.0]	74.0%	74.0%
3194B	North Fork	TN	103,747	28.8%	28.8%
3194B	North Fork	TP	11,672	58.1%	58.1%
3197	C-24 Canal	TN	348,957	51.8%	51.8%
3197	C-24 Canal	TP	39,258	72.2%	72.2%
3197	C-24 Canal	BOD	[2.0]	33.3%	33.3%
3200	C-23 Canal	TN	242,202	51.7%	51.7%
3200	C-23 Canal	TP	27,248	78.6%	78.6%
3210	South Fork	TN	24,463	38.4%	38.4%
3210	South Fork	TP	2,752	57.2%	57.2%
3210A	South Fork	TN	90,471	47.1%	47.1%
3210A	South Fork	TP	10,178	61.8%	61.8%
3211	Bessey Creek	TN	29,981	23.9%	23.9%
3211	Bessey Creek	TP	3,373	51.2%	51.2%
3218	C-44 Canal	TN	242,929	51.2%	51.2%
3218	C-44 Canal	TP	27,330	55.0%	55.0%
3218	C-44 Canal	BOD	[2.0]	69.7%	69.7%



Assumptions

- The following **assumptions** were used in the BMAP process:
 - Reductions in TN and TP loading to the St. Lucie River and Estuary will increase DO concentrations and reduce chlorophyll-a concentrations to improve the water quality conditions in these waterbodies.
 - The allocations do not include required load reductions from natural land use areas from the 2004 SFWMD land use coverage. These loads are considered background, uncontrollable sources, and the stakeholders are not required to make reductions on natural lands. The focus of the TMDL allocations is on urban and agricultural stormwater sources in the basin.
 - Achieving the St. Lucie River and Estuary TMDLs is contingent on reductions from the Lake Okeechobee Basin. A separate BMAP is under development for the Lake Okeechobee Basin.
 - Certain best management practices (BMPs) were assigned provisional credit for load reductions in this iteration of the BMAP while additional research is conducted to quantify their effectiveness. These estimated reductions may change in future BMAP iterations, as additional research results become available.



Considerations

- During the BMAP process, several items were identified that should be addressed in future iterations to ensure that future BMAPs use the most accurate information:
 - **Land Uses** – The loading estimates in the BMAP are based on land uses at a particular point in time, which allows the model to be validated and calibrated. Land uses, however, change over time and, depending on local trends, can change significantly. The loading estimates for this BMAP iteration were based on year 2004 land use data. In the second iteration of the BMAP, the most up-to-date land use coverage should be used.
 - **Basin Boundaries** – During BMAP development, FDEP and SFWMD worked closely in consultation with the stakeholders to identify an appropriate basin boundary for both the BMAP and SLRWPP. Some of the sub-basins included in the St. Lucie River Watershed Protection Plan (SLRWPP), e.g., the South Coastal Basin, were not included in the BMAP due to lack of nutrient loading data. The BMAP monitoring plan includes stations to collect information in this area to enhance the data available in this sub-basin and to promote its inclusion in future BMAP iterations. FDEP and SFWMD will continue to work together during the first BMAP iteration to further align the basin boundaries for both plans. In addition, stakeholders identified the need to include a portion of the C-25 east sub-basin, which is located to the north of the current basin boundary. This modification to the boundary will also be considered before the next BMAP iteration. The SFWMD recently completed a St. Lucie River Sub-watershed boundary improvements study in February 2013. Where appropriate, these changes will be incorporated into the second iteration of the BMAP.



Considerations, Continued

- **Jurisdictional Boundaries** – Martin County and the City of Stuart are currently in discussions about several parcels of land owned by the city that are located within the county. Once these discussions are concluded, changes to the boundaries and/or allocations for these stakeholders may be made, which will be reflected in future BMAP iterations. In addition, St. Lucie County and Martin County are currently in discussions about the Beau Rivage neighborhood, which will be part of Martin County in summer 2013. This area will be added to Martin County's area in the next iteration of the BMAP.
- **Community Development District (CDD) Responsibilities** – FDEP has had several conversations with the City of Port St. Lucie and the numerous CDDs that are located within the city. CDDs were assigned allocations only if 3 criteria were met: (1) There is development, i.e., roads and infrastructure on the CDD; (2) The CDD discharges to the City of Port St. Lucie's MS4; and (3) The CDD pays a stormwater fee and receive a refund of this fee. As further details are provided (e.g., discharge locations from these CDDs), revisions to the city's allocations and boundaries will be made in future BMAP iterations. Furthermore, some of these CDDs that did not receive an allocation in this BMAP iteration may receive allocations in future BMAP iterations.



Considerations, Continued

- **Event Mean Concentrations (EMCs) and Runoff Coefficients (ROCs)**
 - Subsequent to the development of the BMAP model, additional information about the EMCs and ROCs in the basin was collected. Before the next BMAP iteration, FDEP will review the available data and make adjustments to the EMCs and ROCs in the model, as needed. In addition, the stakeholders noted that the current model uses EMCs that are based on untreated stormwater. FDEP plans to work with stakeholders to incorporate EMCs for both treated and untreated stormwater in future iterations of the model to the extent practical.
- **Water Quality Standards Modifications** – Stakeholders expressed concerns over current efforts to revise the state DO criteria. Once adopted, these criteria will be used in the St. Lucie River and Estuary Basin to determine whether impairments still exist. The required reductions in future BMAP iterations will also be adjusted, as needed, based on changes to the DO criteria.
- **Legacy Loads** – There may still be nutrient loads in the soils and waterbodies throughout the basin as a result of historical uses. It is unknown to what extent these legacy loads are affecting water quality in the basin. If additional information is gathered about legacy loading, this information can be included in future BMAPs.



Future Growth

- Section 403.067(7)(a)(2), Florida Statutes, requires: BMAPs to:
“...identify the mechanisms by which potential future increases in pollutant loading will be addressed.”
- The BMAP will not include an allocation for new development.
- New discharges cannot increase existing load and must meet “net environmental improvement” for the Environmental Resource Permit (ERP) program requirements.
- Potential implications for new “10/2” general permit that would be in lieu of an ERP for areas up to 10 acres.



Comments and Questions on Chapter 1





Chapter 2: St. Lucie River and Estuary Basin Setting



Land Uses

- Land uses for the St. Lucie River and Estuary Basin were aggregated using simplified Level 1 codes.
- 2004 land uses:
 - Agriculture (55.6%)
 - Natural Land Uses (27.0%)
 - Urban and Built Up (14.3%)
 - Transportation, Communication, Utilities (14.3%)
 - Barren Land (0.3%)

Land Use Code	Land Use	Acres	Percent Total
1000	Urban and Built Up	73,474.8	14.3%
2000	Agriculture	286,184.2	55.6%
3000	Rangeland	22,834.1	4.4%
4000	Upland Forests	43,709.2	8.5%
5000	Water	11,389.9	2.2%
6000	Wetlands	61,283.2	11.9%
7000	Barren Land	1,311.3	0.3%
8000	Transportation, Communication and Utilities	14,462.1	2.8%
N/A	Total	514,648.8	100.0%



Hydrology

- All waterbodies drain directly to either the St. Lucie Estuary or the Indian River Lagoon South (IRL-S).
- The South Fork and North Fork of the St. Lucie Estuary converge at the Roosevelt Bridge to form a single waterbody that extends eastward, where it joins the IRL-S.
- With the construction of drainage improvements in inland areas, the drainage area of the St. Lucie Estuary expanded to include almost all of Martin and St. Lucie counties.
- The C-44 canal connects Lake Okeechobee to the South Fork, and it provides a navigable connection between the east and west coasts of Florida. It serves as a flood control conveyance for Lake Okeechobee. The C-44 canal also transports runoff from urban and agricultural areas in the C-44/S-153 sub-basin.
- The construction of canals C-23 and C-24 provided connections between their respective sub-basins, and these canals discharge to the North Fork.



Water Quality Trends

- Overall, most TN and TP concentrations at the structures were higher than the TMDL targets.
- Although concentrations in 2006–2010 were slightly higher than 1995–2005, no significant change was observed between the 2 periods except for TP concentrations from S-80 (C-44/S-153 sub-watershed).
- TN and TP loads at water control structures S-308, S-80, S-48, and S-49 exhibited large inter-annual variations with higher loads in wet years than dry years. Both total average TN and TP loads were significantly lower during 2006–2010 than during 1995–2005.
- TP decreased in all segments except the South Fork, where no significant change was detected.
- Chlorophyll *a* decreased in the Middle and Lower estuarine segments but not in the South Fork or North Fork, where concentrations did not differ between the 2 time periods.
- Bottom DO decreased in the South Fork but increased in the other 3 segments.



Comments and Questions on Chapter 2





Chapter 3: Pollutant Sources and Anticipated Outcomes



Sources in the TMDL

- Urban stormwater
 - Municipal separate storm sewer systems (MS4s) and nonpoint sources.
- Agricultural stormwater
- Lake Okeechobee
 - Addressed in a separate BMAP.
- Groundwater
 - Part of the measured load at canal control structures and in water quality in the waterbodies.



MS4s

- The MS4s are all Phase II:
 - Martin County;
 - Okeechobee County;
 - St. Lucie County;
 - City of Fort Pierce;
 - City of Stuart;
 - City of Port St. Lucie;
 - FDOT District 4;
 - Florida Turnpike; and
 - Town of Sewall's Point.
- Permit includes self-implementing clause for BMAP load reduction responsibilities.



Nonpoint Sources

- The non-MS4s include:
 - Copper Creek Community Development District (CDD);
 - Hobe St. Lucie Conservancy District;
 - North St. Lucie River Water Control District (WCD);
 - Pal Mar WCD;
 - St. Lucie County non-MS4;
 - Tradition CDD;
 - Troup-Indiantown WCD; and
 - Verano CDD.
- The reductions for these sources are enforceable through the BMAP itself.



Agriculture

- The primary agricultural land uses in the watershed are cow/calf operations (pasture) and citrus.
- Due to urban encroachment, citrus health issues (freeze/disease), and the downturn in the economy, a large number of citrus operations have been destroyed or abandoned or have significantly lowered their production acreage.
- Agricultural producers must implement appropriate BMPs or water quality monitoring to show not having an impact.



Anticipated Outcomes

- Modest improvement in water quality trends in the watershed tributaries and the St. Lucie River and Estuary;
- Decreased loading of the target pollutants (TN, TP, and BOD);
- Increased coordination among state and local governments and within divisions of local governments in problem solving for surface water quality restoration;
- Determination of effective projects through the stakeholder decision-making and priority-setting processes;
- Enhanced public awareness of pollutant sources, pollutant impacts on water quality, and corresponding corrective actions; and
- Enhanced understanding of basin hydrology, water quality, and pollutant sources.



Comments and Questions on Chapter 3





Chapter 4: Detailed Allocations



Allocations

- Includes information reviewed at past meetings:
 - Collaborating with SLRWPP efforts;
 - Calculating starting loads;
 - Natural land uses and Florida Power and Light pond;
 - *De minimus* determination;
 - Target load per acre;
 - Allocations and required reductions; and
 - Allocations by source.



MS4 Allocations

Entity	30% TN Reductions (lbs/yr)	30% TN Reductions (MT/yr)	30% TP Reductions (lbs/yr)	30% TP Reductions (MT/yr)
FDOT District 4 MS4	1,531.8	0.69	512.7	0.23
Fort Pierce MS4	1,943.7	0.88	807.9	0.37
Martin County MS4	9,647.4	4.38	4,377.0	1.99
Port St. Lucie MS4	15,930.3	7.23	7,029.3	3.19
St. Lucie County MS4	2,018.4	0.92	854.7	0.39
Stuart MS4	1,428.0	0.65	618.6	0.28



Nonpoint Source Allocations

Entity	30% TN Reductions (lbs/yr)	30% TN Reductions (MT/yr)	30% TP Reductions (lbs/yr)	30% TP Reductions (MT/yr)
Hobe St. Lucie Conservancy District	2,838.6	1.29	1,056.0	0.48
North St. Lucie River WCD	26,353.8	11.95	10,090.2	4.58
St. Lucie County Non-MS4	2,926.8	1.33	1,350.3	0.61
Troup-Indiantown WCD	7,528.2	3.41	2,435.7	1.10



Agriculture Allocations

- This table combines the required reductions for agriculture as an entity (243,877.2 lbs/yr of TN and 92,117.7 lbs/yr of TP) and for agricultural lands within the special districts.

Entity	30% TN Reductions (lbs/yr)	30% TN Reductions (MT/yr)	30% TP Reductions (lbs/yr)	30% TP Reductions (MT/yr)
Agriculture	270,733.4	122.80	102,396.5	46.44



Comments and Questions on Chapter 4





Chapter 5: Management Actions



Project Collection

- Stormwater management focused.
- Stakeholders submitted projects that were completed or planned to achieve TN and TP reductions.
- Projects completed since January 1, 2000 and later were eligible for credit.
- Credit only counted for treatment above and beyond any permitted requirements.



MS4 TN Projects Summary

Entity	Structural Stormwater	Nonstructural Stormwater	Public Education	Street Sweeping	Total (lbs/yr)	Credit for Future BMAPs (lbs/yr)
FDOT District 4 MS4	577.7	N/A	31.3	1,419.0	2,028.0	496.2
Fort Pierce MS4	685.2	4,300.0	170.4	5,569.0	10,724.6	8,780.9
Martin County MS4	8,075.5	397.0	6,048.7	108.0	14,629.2	4,981.8
Port St. Lucie MS4	6,991.6	7,927.4	9,388.9	676.0	24,983.9	9,053.6
Sewall's Point MS4	165.0	N/A	8.9	25.0	198.9	198.9
St. Lucie County MS4	2,628.0	1,351.9	1,086.8	210.6	5,277.3	3,258.9
Stuart MS4	2,580.1	221.3	839.9	275.0	3,916.3	2,488.3
Turnpike MS4	23.2	N/A	N/A	N/A	23.2	23.2
Total	21,726.3	14,197.6	17,574.9	8,282.6	61,781.4	29,281.8



MS4 TP Projects Summary

Entity	Structural Stormwater	Nonstructural Stormwater	Public Education	Street Sweeping	Total (lbs/yr)	Credit for Future BMAPs (lbs/yr)
FDOT District 4 MS4	158.1	N/A	6.4	910.0	1,074.5	561.8
Fort Pierce MS4	282.0	2,641.0	38.8	3,571.0	6,532.8	5,724.9
Port St. Lucie MS4	3,168.9	3,200.1	2,100.9	434.0	8,903.9	1,874.6
Martin County MS4	3,564.9	161.0	1,342.1	69.0	5,137.0	760.0
Sewall's Point MS4	44.7	N/A	1.9	16.0	62.6	62.6
St. Lucie County MS4	1,033.2	616.1	247.6	135.2	2,032.1	1,177.4
Stuart MS4	1,231.4	58.9	186.4	176.0	1,652.7	1,034.1
Turnpike MS4	3.4	N/A	N/A	N/A	3.4	3.4
Total	9,486.6	6,677.1	3,924.1	5,311.2	25,399.0	11,198.8



Nonpoint TN Projects Summary

Entity	Structural Stormwater	Nonstructural Stormwater	Public Education	Street Sweeping	Total (lbs/yr)	Agricultural BMPs/ Land Use Change	Credit for Future BMAPs (lbs/yr)
Hobe St. Lucie Conservancy District	N/A	N/A	N/A	N/A	10,288.2	10,288.2	7,449.6
North St. Lucie River WCD	5,770.8	N/A	N/A	N/A	63,440.2	69,211.0	42,857.2
Pal Mar WCD	N/A	N/A	N/A	N/A	962.2	962.2	962.2
St. Lucie County Non-MS4	997.9	1,658.1	1,425.7	113.4	N/A	4,175.1	1,248.3
Troup-Indiantown WCD	N/A	N/A	N/A	N/A	25,055.3	25,055.3	17,527.1
Total	6,768.7	1,658.1	1,425.7	113.4	99,745.9	109,691.8	70,044.4



Nonpoint TP Projects Summary

Entity	Structural Stormwater	Nonstructural Stormwater	Public Education	Street Sweeping	Total (lbs/yr)	Agricultural BMPs/ Land Use Change	Credit for Future BMAPs (lbs/yr)
Hobe St. Lucie Conservancy District	N/A	N/A	N/A	N/A	3,302.1	3,302.1	2,246.1
North St. Lucie River WCD	0.0	N/A	N/A	N/A	18,166.1	18,166.1	8,075.9
Pal Mar WCD	N/A	N/A	N/A	N/A	91.7	91.7	91.7
St. Lucie County Non-MS4	390.3	656.9	364.3	72.8	N/A	1,484.3	134.3
Troup-Indiantown WCD	N/A	N/A	N/A	N/A	7,942.5	7,942.5	5,506.8
Total	390.3	656.9	364.3	72.8	29,502.4	30,986.7	16,054.8



Agriculture Allocation

Estimated Loads	TN (lbs/yr)	TP (lbs/yr)
Agricultural Starting Load	1,563,122.0	390,312.0
Agricultural Required Reduction	812,924.0	307,059.0
Required Reduction for First Phase of BMAP	243,877.2	92,117.7
Estimated Load Reductions via BMPs, 90% Target Enrollment*	197,216.6	40,442.0
Estimated Load Reduction Credit for Land Use Changes*	171,776.4	54,191.1
Total Estimated Reductions	368,993.0	94,663.1
Remaining Load Reductions Needed for First Phase of BMAP	-125,115.8 (credit)	-2,515.4 (credit)
Agricultural Starting Load	1,563,122.0	390,312.0



All Agriculture

Estimated Loads	TN (lbs/yr)	TP (lbs/yr)
Total Required Reduction for All Agricultural Lands	933,564.0	349,908.0
Total Required Reduction for First Phase of BMAP	280,069.2	104,972.4
Estimated Load Reductions via BMPs, 90% Target Enrollment	217,170.0	44,522.4
Credit for Land Use Change to Less Intensive/Fallow Agriculture	223,775.9	71,920.9
Credit for Land Use Change to Urban Development	27,757.0	7,692.2
Total Estimated Reduction Credits	468,702.9	124,135.5
Remaining Load Reductions Needed for First Phase of BMAP	-188,633.7 (credit)	-19,163.1 (credit)



Comments and Questions on Chapter 5





Chapter 6: Assessing Progress and Making Changes



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.



Objective and Network

- **Primary Objective** – Track trends in TN and TP loads in the major canals and tributaries, as well as the St. Lucie River and Estuary.
- Will be determined through the existing network:
 - Hobe St. Lucie Conservancy District – 1 annual station.
 - North St. Lucie River WCD – 9 quarterly stations.
 - Port St. Lucie – 21 stations sampled 1 or 2 times/year.
 - SFWMD – 51 stations at various frequencies.
 - St. Lucie County – 4 tri-weekly stations.
 - St. Lucie West Services District – 8 stations.
 - U.S. Geological Survey – 8 daily flow gages.
- Some information is still needed on these stations.



Biological Monitoring

Project	Number of Stations	Location	Frequency	Project Start Date
Seagrass Monitoring and Mapping	80+	Transects in all lagoon segments	Semiannually	1994
Seagrass Monitoring and Mapping	Lagoon-wide maps	Entire lagoon from St. Lucie Estuary upstream to Roosevelt Bridge (US 1)	Every 2-5 years	1986
Seagrass Monitoring and Mapping	10	IRL-S	Bi-monthly (3 sites near the St. Lucie Estuary monitored monthly)	2008
Oyster Monitoring and Mapping	9	St. Lucie Estuary	Semiannually	2005



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 Florida STORET or its replacement.
 - SFWMD data will be stored in DBHYDRO.
- Any biological data collected will be maintained by the entity collecting the data.
- Water quality data will be evaluated in year 4 of the BMAP.



Research Priorities

- During the BMAP process, the stakeholders identified several research priorities they would like to pursue, if funding becomes available.
- These research topics, which are also identified in the 2012 SLRWPP Update, include:
 - **Nutrient Budget** – This research includes dry season benthic flux measurements and a St. Lucie Estuary nutrient budget. Additional work is needed to look at wet season fluxes. The nutrient budget would estimate/quantify major sources and sinks of nutrient inputs.
 - **DO Dynamics** – This research includes DO data analyses to characterize DO variability and identify the factors causing DO impairments in the St. Lucie Estuary.



Comments and Questions on Chapter 6





Chapter 7: Commitment to Plan Implementation



Commitment

- The stakeholders have worked collaboratively to develop the BMAP.
- The stakeholders have committed to the activities included in the BMAP.
- The stakeholders will continue to confer with and support each other in their BMAP efforts.



Comments and Questions on Chapter 7





Appendices



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.



Appendices, Continued

- Appendix D: BMP Efficiencies and 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





BMAP Review Process and Next Steps



BMAP Review Process

Action	Responsible Party	Date
Draft BMAP to stakeholders for review	FDEP (draft BMAP), Technical Stakeholders (review BMAP)	March 6, 2013 - sent
Technical meeting to discuss Draft BMAP	FDEP and Technical Stakeholders	March 13, 2013 - today
Comments on Draft BMAP due to FDEP	Technical Stakeholders	March 27, 2013
Revised Draft BMAP for stakeholder and public review	FDEP	April 3, 2013
Public meeting on BMAP	Public/FDEP	April 10, 2013
Public comment period closes (30 days)	FDEP	May 2, 2013



FDEP Adoption Process

Action	Date
Brief FDEP Division of Environmental Assessment and Restoration (DEAR) management on BMAP	Mid-May 2013
Brief FDEP Deputy Secretary on BMAP	Mid-May 2013
Brief FDEP Secretary on BMAP and obtain Secretarial approval	End-May 2013
Notify interested parties and place FAR notice	End-May 2013
End of challenge period (21-days after notice)	End-June 2013
BMAP adopted and enforceable (if there are no challenges)	End-June 2013



Stakeholder Action Items

- By March 27th:
 - Please send comments to Katie Hallas (Katie.Hallas@dep.state.fl.us).
 - Please provide any missing information on the monitoring or projects to Katie Hallas (Katie.Hallas@dep.state.fl.us).

Questions

