



Florida Department of Environmental Protection

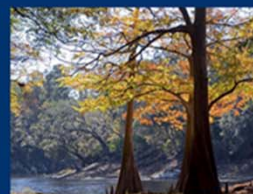
Water Quality Restoration Program

St. Lucie River and Estuary Basin Management Action Plan Annual Meeting

August 12, 2015

David Glassner

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Meeting Agenda

- **Welcome and Introductions**
- **Annual Update**
 - **Water Quality Analysis**
- **WaSh Model Update**
- **Project Presentation**
- **Next Steps**
- **Questions/Comments**
- **Adjourn**



Annual Update

***Reporting Period
July 1, 2014 through June 30, 2015***

- **Project Updates.**
- **Water Quality Analysis (Methodology).**
- **Project Calculations.**



Annual Update

City of Fort Pierce

Heathcote Botanical Gardens Treatment Train



Indian Hills Recreation Area - Outfall Structure, Pedestrian Bridge

Reductions

232.7 Total Nitrogen
(TN) lbs/yr
98.9 Total Phosphorus
(TP) lbs/yr



Indian Hills Recreation Area - Lake Expansion, Natural Island, Floating Islands

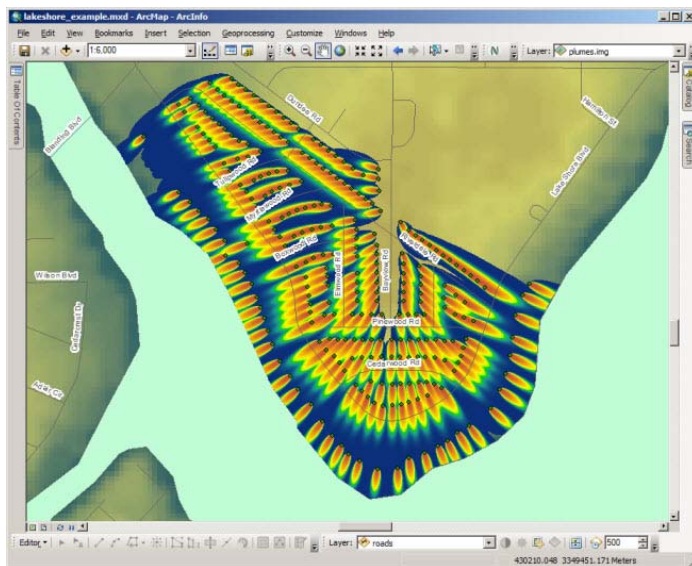


0.94 mile pedestrian trail
around perimeter of lake



Annual Update

City of Port St. Lucie Septic Tank Phase Outs



ArcNLET

File Execute Settings Help

Groundwater Flow | Particle Tracking | Transport | Denitrification | Abort

Input Layers

Source locations (point) [Layer Info](#) Water bodies (polygon) [Layer Info](#)

PotentialSepticTankLocations waterbodies

Particle paths (polyline) [Layer Info](#)

flow_lines

Options

Solution Type DomenicoRobbinsSSDecay2

Parameters

C0 [M/L ³]	M in [M/T]	Source Dim. [L] Y Z	Plume Cell Size [L]	Dispersivities [L] α_L α_{TH}	Decay Constant [1/T]	Volume Conversion Factor	More
-1	20000	6 [Auto]	0.4	2.113 0.234	0.008	1000.00000	

Outputs

Plumes (raster) C:\GIS\lakeshore_example\lakeshore_plumes.img

Reductions
*To be calculated
in ArcNLET by Florida State University (FSU).*



Annual Update

Martin County

Bessey Creek Hybrid Wetland Treatment Technology Facility



Reductions

6,038 TN lbs/yr

1,466 TP lbs/yr



Annual Update

Martin County

Rain Garden Planting and Educational Outreach



Hoke Library Rain Garden Installation



GWU Students Planting Rain Garden
at Halpatiokee Park



Annual Update

St. Lucie County

Platt's Creek Compensatory Mitigation Project





Annual Update

St. Lucie County

New Street Sweeper



Disclaimer: Street sweepers applied to agricultural lands are not a best management practice (BMP).



Annual Update

Town of Sewall's Point

Quail Run Basin





Annual Update

Water Quality Analysis (Methodology)

- BMAP calls for water quality analysis to be included in Year 4 Annual Update.
 - This is a program objective to do more water quality analysis in annual reports.

Why are we doing this now?

- Starting outreach now to stakeholders to organize data.
- Obtain all data, address errors, and locate missing data.



Annual Update

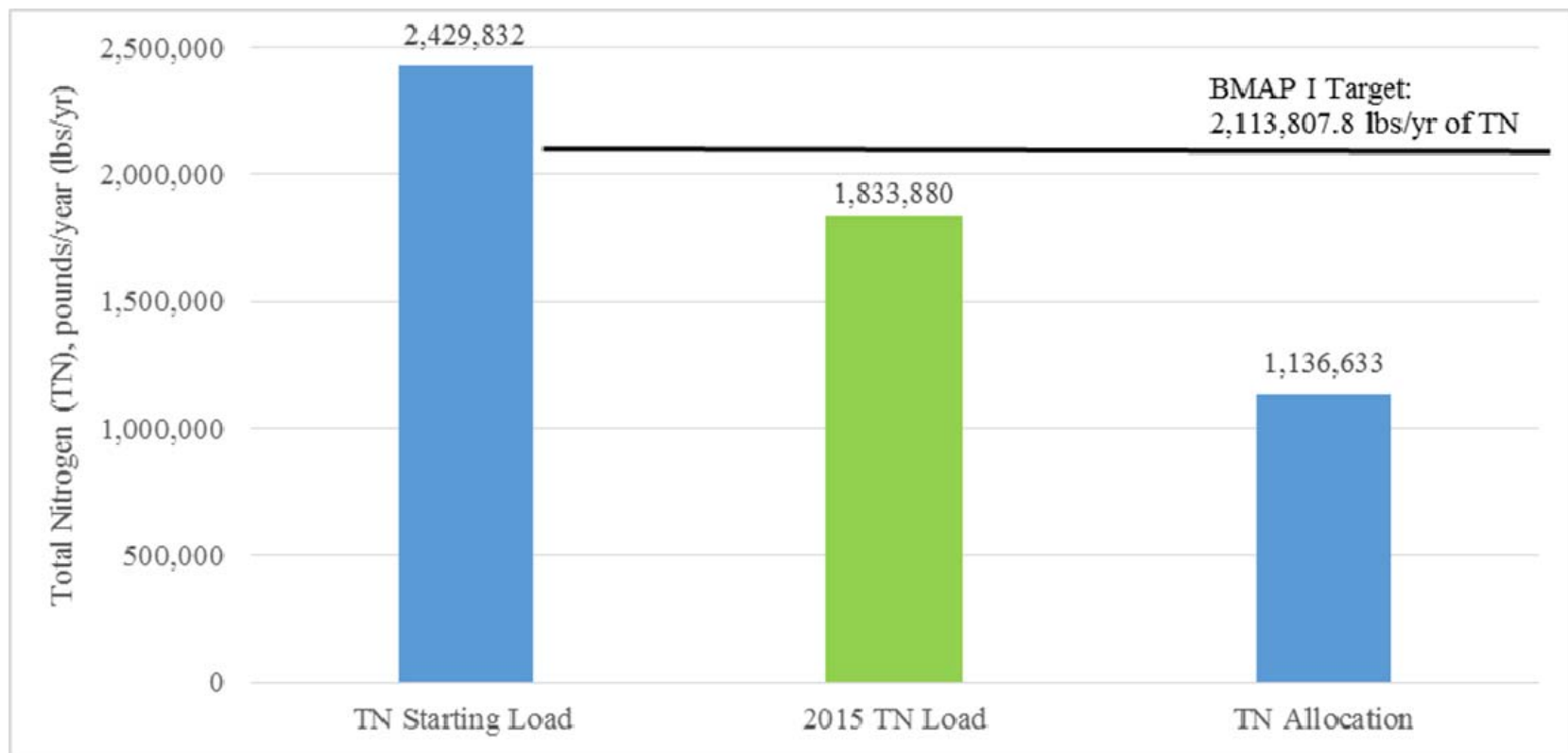
What are we going to do next?

- Start compiling data.
 - Outreach for more data.
 - Begin analysis.
 - Present draft results.
 - Get feedback.
- Goal is to provide actionable information.



Annual Update

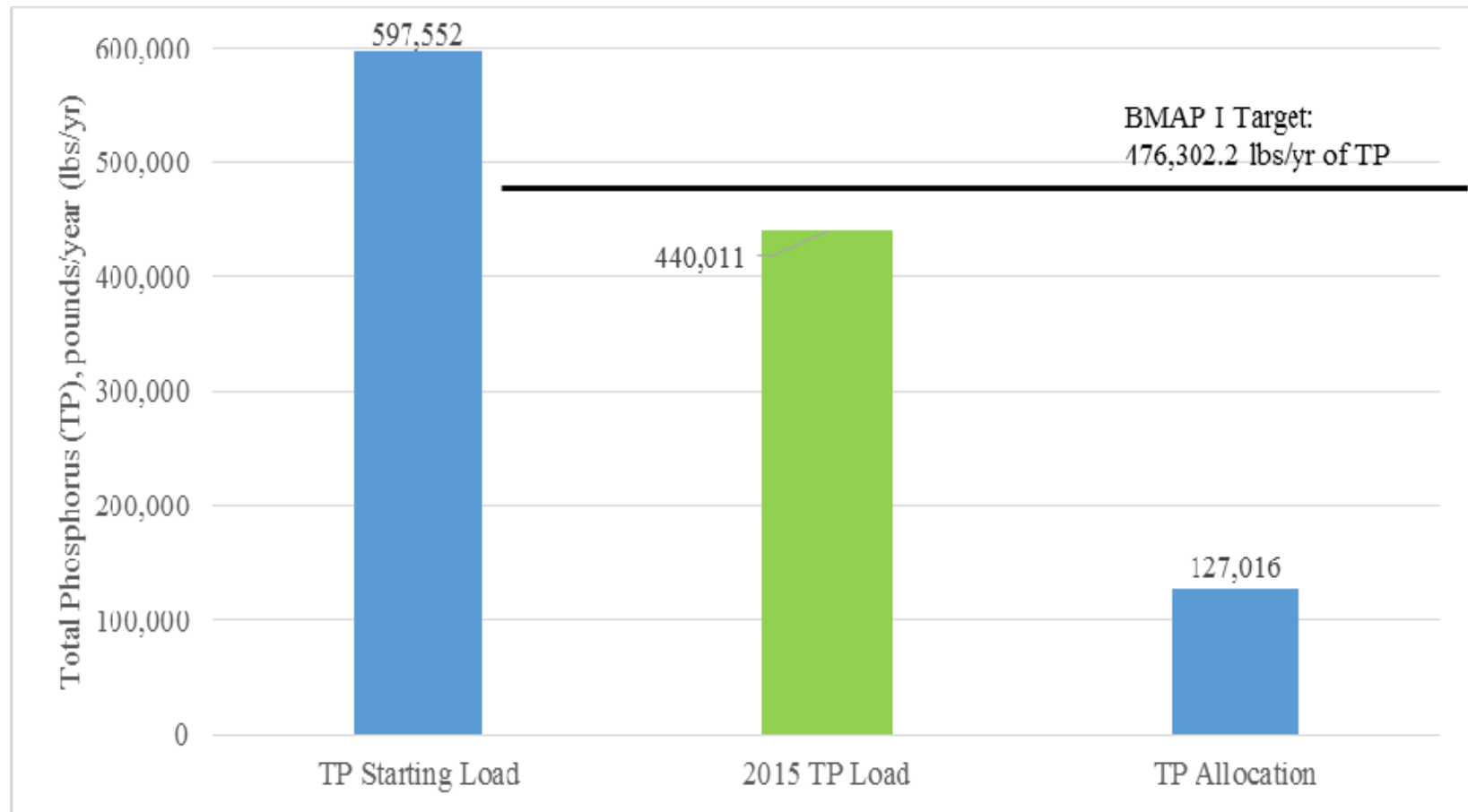
Draft TN Project Calculations:





Annual Update

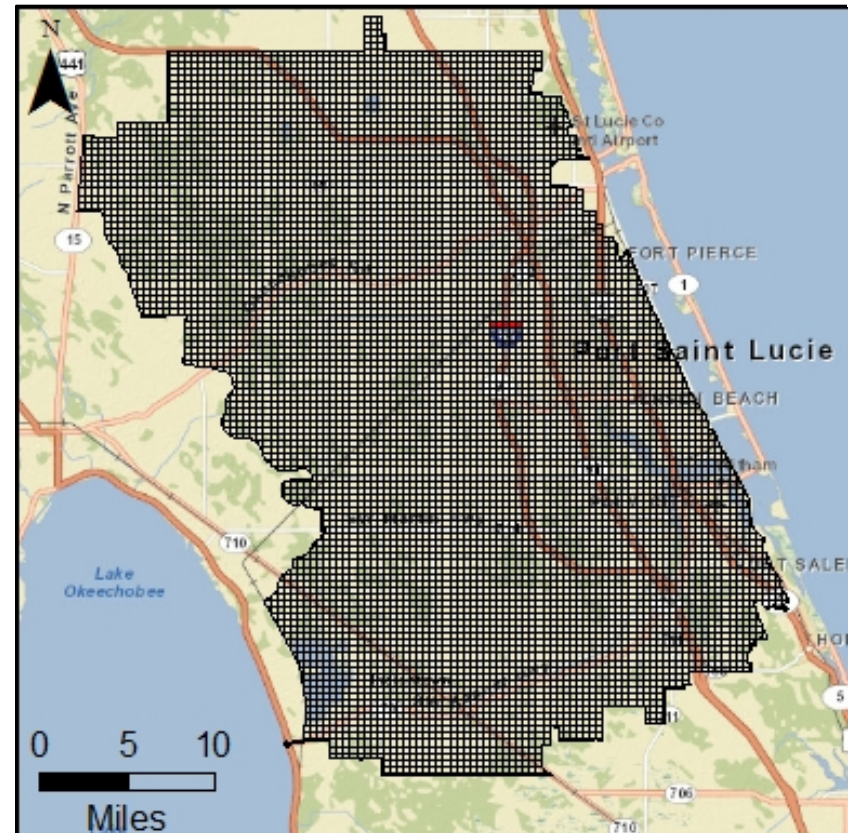
Draft TP Project Calculations:





WaSh Model Update

- Developing more detailed model.
- Useful to refine second-phase BMAP allocations.
- Stakeholders and South Florida Water Management District (SFWMD) found the WaSh model was the best-suited model.





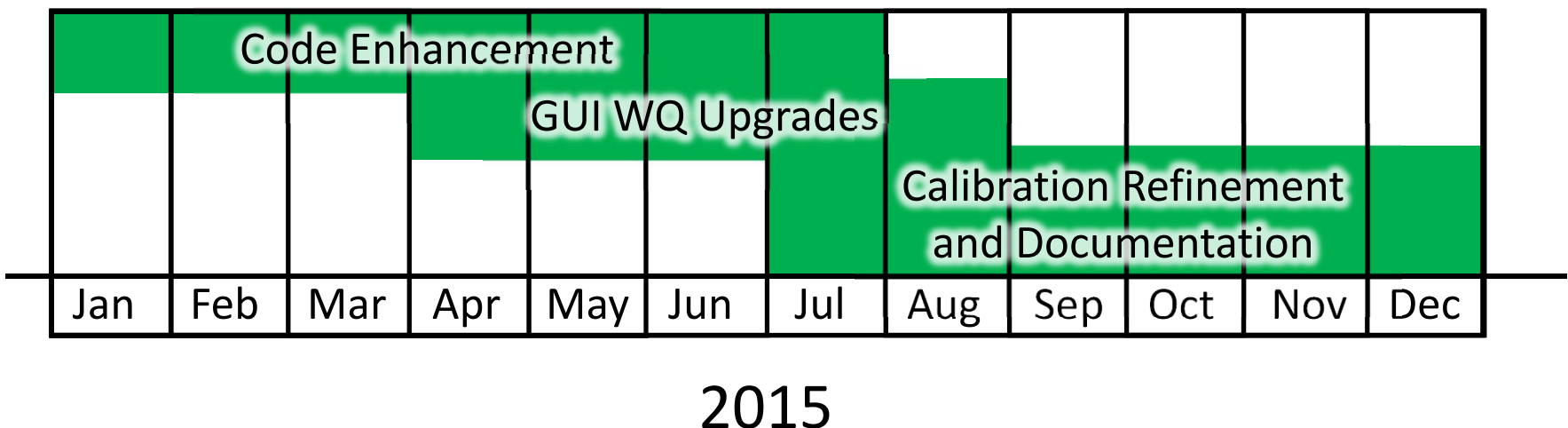
WaSh Model Update

- In order to meet BMAP needs, the water quality component of the WaSh model required enhancement.
 - FORTRAN algorithms being updated to include:
 - BMPs; and
 - Enhanced wetlands representation.
 - WaSh graphical user interface (GUI) being updated to support BMP applications and analyze user-defined sub-regions.
- Additional flow and water quality data available to refine calibration.
- Sections of mid-coastal and south-coastal basins that contribute to the estuary added to model domain.
- Update model documentation to reflect enhancements.



WaSh Model Update

- WaSh model developer began updates in January 2015. through a contract between DEP and SFWMD.
- Model updates scheduled to be completed by January 2016.





Project Presentation

Jason Bessey – St. Lucie County
*Indian Hills Recreation Area
Stormwater Improvements*

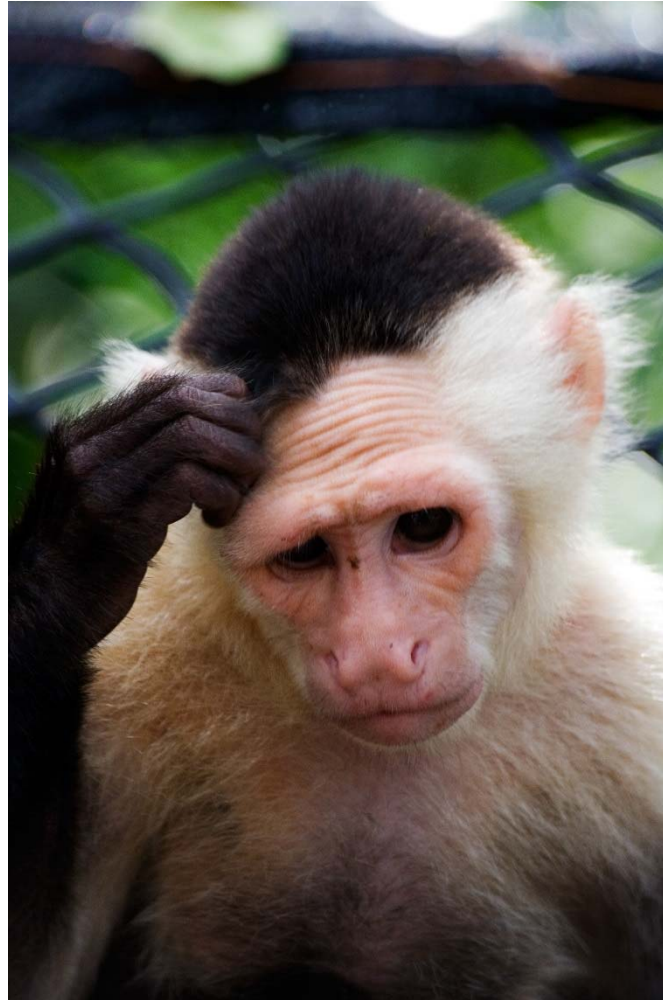


Next Steps

- Receive comments back on Annual Report
 - To be received by **September 12th**
- Outreach
 - Project specifics
 - Water quality data
 - Agricultural Enrollments
- Finalized Annual Report (Fall)
- Potential Water Quality Discussion [Meeting?]



Questions/Comments



<https://www.flickr.com/photos/michaelkeen/3892771349>



Adjourn

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For documents, please see:

<http://publicfiles.dep.state.fl.us/DEAR/BMAP/StLucie/>