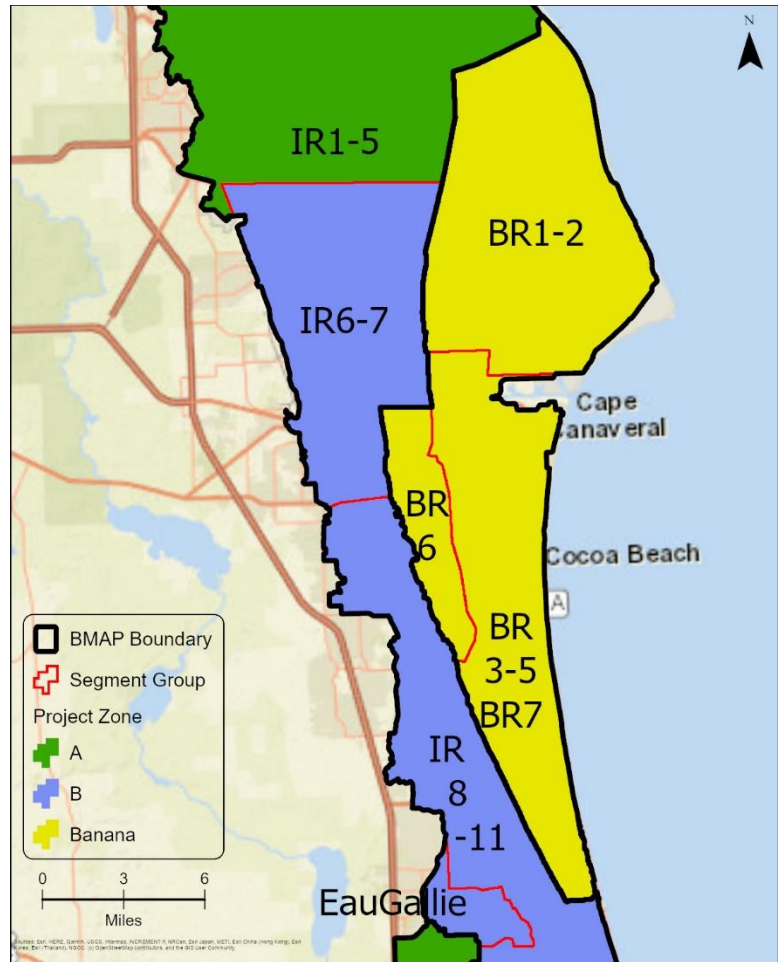


City of Indian Harbour Beach
Banana River Lagoon Basin Management Action Plant (BMAP)
Draft Allocations March 2020

Summary:

- Used load estimation tool (LET) developed from Spatial Watershed Iterative Loading (SWIL) Model to calculate total nitrogen (TN) and total phosphorus (TP) starting loads for each total maximum daily load (TMDL) "Segment Group"
- Applied percent reduction from TMDL for each Segment Group (see tables below) to calculate total TN and TP load reduction required for each Segment Group
- Used LET to calculate total anthropogenic starting load in each Segment Group and determine the percent each entity contributed to the total anthropogenic starting load.
- Multiplied the load reduction required in the Segment Group by the percent each entity contributed to the total anthropogenic starting load to calculate each entity's required reductions within each Segment Group.

Note: Numbers have been rounded for display in this document but were not rounded during the full calculation process.



Required Reductions Per TMDL Segment Group

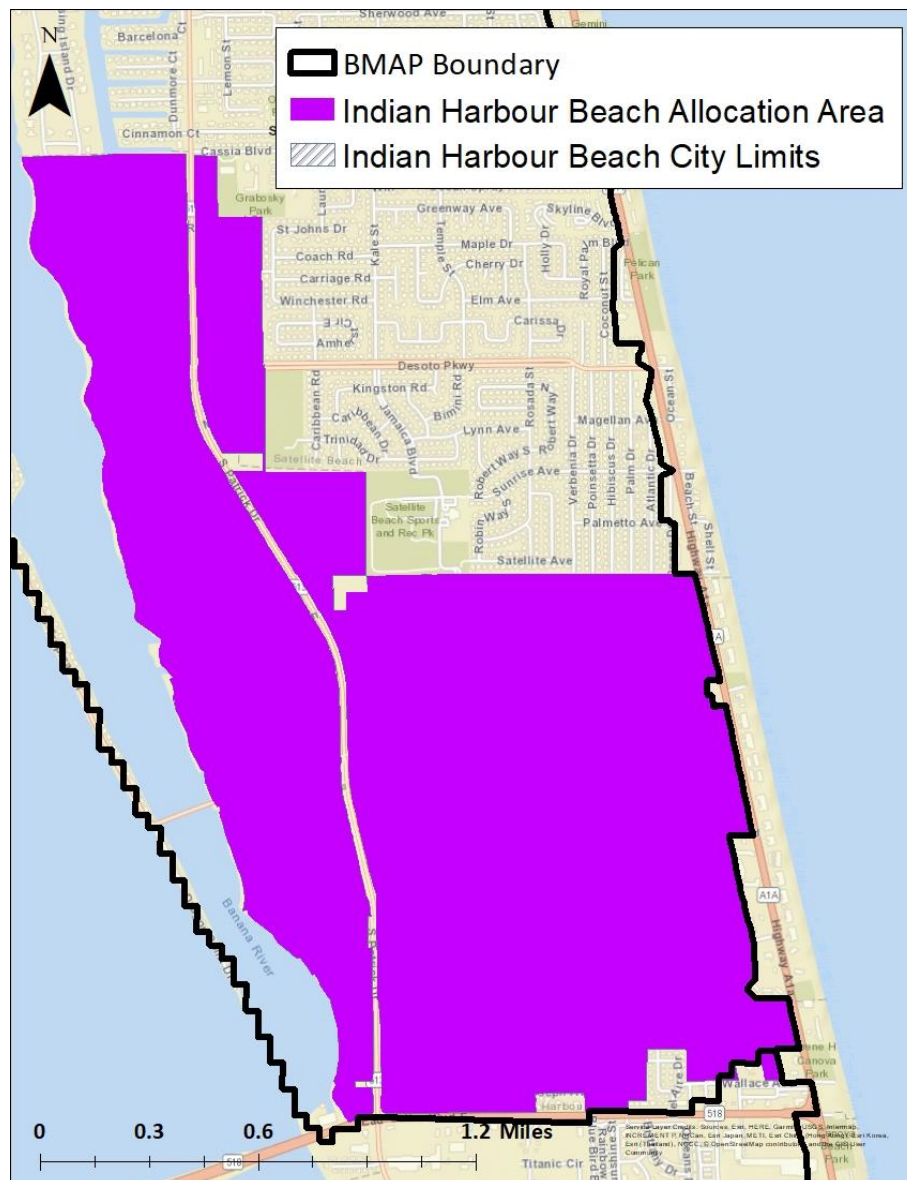
BMAP	Project Zone	TMDL Segment Group	% TN TMDL Total Reduction	% TP TMDL Total Reduction
North IRL	A	IR1-5	35%	47%
North IRL	B	IR6-7	36%	53%
North IRL	B	IR8-11	36%	48%
North IRL	B	EauGallie	51%	58%

BMAP	Project Zone	TMDL Segment Group	% TN TMDL Total Reduction	% TP TMDL Total Reduction
Banana River	Banana	BR1-2	67%	72%
Banana River	Banana	BR3-5, BR7	59%	64%
Banana River	Banana	BR6	66%	70%

New Load Calculations from SWIL Model

BMAP	Project Zone	TN (lbs/yr)			TP (lbs/yr)		
		Starting Load	Required Reductions	Allocation	Starting Load	Required Reductions	Allocation
Banana River	Banana	10,857	7,848	3,009	1,670	1,262	408
Total		10,857	7,848	3,009	1,670	1,262	408

BMAP	Project Zone	TN (lbs/yr)			TP (lbs/yr)		
		Starting Load	Required Reductions	Allocation	Starting Load	Required Reductions	Allocation
North Indian River	B	21	9	13	3	2	2
Total		21	9	13	3	2	2



Draft Project Credit Recalculations

Using the LET and geographic information systems (GIS) tools, base loads for the project treatment areas were updated for all projects that require a base load for credit calculations. This allowed the project credits to be recalculated using the same foundation that was used for the updated allocations.

Current verified and completed projects:

Banana River Lagoon

TN (lbs/yr)			TP (lbs/yr)		
Required Reductions	Updated Project Credits	% Reductions Achieved	Required Reductions	Updated Project Credits	% Reductions Achieved
7,848	1.464	19%	1,262	356	28%

North Indian River Lagoon

TN (lbs/yr)			TP (lbs/yr)		
Required Reductions	Updated Project Credits	% Reductions Achieved	Required Reductions	Updated Project Credits	% Reductions Achieved
9	24	267%	2	4	200%

These credits represent the City of Satellite Beach's status as of April 2020 – there will continue to be opportunities to submit new projects and obtain additional credits.

Notes:

- For several projects (**IHB-12, IHB-13, IHB-14, IHB-15, IHB-17, IHB-18, and IHB-19**) the retention depth seems very small. Please confirm in your records the reported retention depth.
- Additional information is needed to calculate the project efficiency at reducing nutrients for project **IHB-37**.

Potential future reductions - [underway or not yet verified]:

North Indian River Lagoon Project Zone A

TN (lbs/yr)			TP (lbs/yr)		
Required Reductions	Updated Project Credits	% Reductions Achieved	Required Reductions	Updated Project Credits	% Reductions Achieved
7,848	2,078	27%	1,262	449	36%

Notes:

- There are 3 projects with load reductions listed as "TBD" which can be calculated with the LET or other methods and added to total reductions once additional project information is received.
- There were 9 projects (**IHB-20, IHB-21, IHB-22, IHB-23, IHB-29, IHB-30, IHB-31, IHB-32, and IHB-33**) that had enough data to estimate reductions. Please confirm that the data used for these calculations is up to date and the most accurate.