



*Florida Department of
Environmental Protection*

Allocations and Project Credit

Banana River Lagoon BMAP Meeting

June 7, 2012



Allocation Approach

- The BRL A project zone is achieving seagrass depth limit targets; therefore, reductions are not required in this BMAP iteration.
- The allocations in the BRL B project zone were assigned to each entity based on achieving a target load per acre for the project zone.
 - The target load per acre was calculated based only on anthropogenic land uses in the project zone.





Calculating Baseline Loads

- Baseline (starting) loads are those loads that were used to calculate the TMDL based on 2000 land use from PLSM.
- The first step was to remove the areas associated with the land use land cover code 5400, which is the Banana River Lagoon.
- The resulting file was then clipped to the BRL A and BRL B project zone boundaries.





Calculating Baseline Loads, con't

- For the BRL B project zone, the individual entity shapefiles were then created by clipping each entity's jurisdiction, as follows:
 - Florida Department of Transportation (FDOT) roads and right-of-ways.
 - Areas with agricultural land uses.
 - Municipalities, each to its own jurisdictional boundary.
 - The remaining area was assigned to Brevard County.
- The baseline loads were calculated based on the anthropogenic areas.





Anthropogenic Baseline Loads for BRL B

Entity	Area (Acres)	TN Baseline Load (lbs/yr)	TP Baseline Load (lbs/yr)
Agriculture	126	702	174.5
Brevard County	5,393	64,236	13,774.0
Cape Canaveral	610	8,393	1,987.4
Cocoa Beach	1,709	18,300	3,811.5
FDOT District 5	474	5,076	1,598.3
Indian Harbour Beach	1,101	11,266	2,101.2
Melbourne	4	30	5.5
Patrick AFB	1,729	24,468	6,459.1
Port Canaveral	53	584	124.2
Satellite Beach	1,525	16,692	3,283.9
Total	12,724	149,747	33,319.6



De minimus *Loads*

- The net loads for TN and TP were sorted from highest to lowest to determine *de minimus* entities.
- Those entities whose total loads are very small in relation to the total loads for *both* TN and TP are considered *de minimus*.
- Agriculture, Port Canaveral, and Melbourne met the *de minimus* requirements.
- Combined they contribute approximately 1% of the total TN and TP load in the project zone.
- The *de minimus* load was not reassigned to other stakeholders for reductions.





Allocations

- The target loads per acre were calculated by dividing the TMDL anthropogenic target load by the total anthropogenic area in the BRL B project zone.
- The anthropogenic TN and TP target loads were calculated by subtracting the load associated with the natural lands from the TMDL target loading.

BRL B	TN	TP
TMDL Target (lbs/yr)	63,028	11,823
Natural Loading (lbs/yr)	11,267	995
Anthropogenic Target Loads (lbs/yr)	51,761	10,828
Anthropogenic Acres	12,724	12,724
Target Load (lbs/acre/yr)	4.07	0.85





Required Reductions

- The total required load reductions were calculated by multiplying each entity's acreage by the target load per acre.
 - This resulted in each entity's allocation (allowable load).
- By subtracting the allocation from each entity's net load, the required reductions were determined.





BMAP Phase I TN Reductions for BRL B

Entity	Area (acres)	TN Target (lbs/acre/yr)	TN Allocation (lbs/yr)	TN Baseline Load (lbs/yr)	TN Required Reduction (lbs/yr)	15% of TN Required Reduction (lbs/yr)
Brevard County	5,393	4.07	21,949	64,236	42,287	6,343.1
Cape Canaveral	610	4.07	2,484	8,393	5,909	886.4
Cocoa Beach	1,709	4.07	6,954	18,300	11,346	1,701.9
FDOT District 5	474	4.07	1,930	5,076	3,146	471.9
Indian Harbour Beach	1,101	4.07	4,482	11,266	6,784	1,017.6
Patrick AFB	1,729	4.07	7,037	24,468	17,431	2,614.7
Satellite Beach	1,525	4.07	6,206	16,692	10,486	1,572.9
Agriculture – <i>de minimus</i>	126	4.07	-	702	-	-
Melbourne – <i>de minimus</i>	4	4.07	-	30	-	-
Port Canaveral – <i>de minimus</i>	53	4.07	-	584	-	-
Total	12,724	N/A	51,042	149,747	97,389	14,608.4





BMAP Phase I TP Reductions for BRL B

Entity	Area (acres)	TP Target (lbs/acre/yr)	TP Allocation (lbs/yr)	TP Baseline Load (lbs/yr)	TP Required Reduction (lbs/yr)	15% of TP Required Reduction (lbs/yr)
Brevard County	5,393	0.85	4,584.0	13,774.0	9,190.0	1,378.5
Cape Canaveral	610	0.85	519.0	1,987.4	1,468.4	220.3
Cocoa Beach	1,709	0.85	1,452.0	3,811.5	2,359.5	353.9
FDOT District 5	474	0.85	403.0	1,598.3	1,195.3	179.3
Indian Harbour Beach	1,101	0.85	936.0	2,101.2	1,165.2	174.8
Patrick AFB	1,729	0.85	1,470.0	6,459.1	4,989.1	748.4
Satellite Beach	1,525	0.85	1,296.0	3,283.9	1,987.9	298.2
Agriculture – <i>de minimus</i>	126	0.85	-	174.5	-	-
Melbourne – <i>de minimus</i>	4	0.85	-	5.5	-	-
Port Canaveral – <i>de minimus</i>	53	0.85	-	124.2	-	-
Total	12,724	N/A	10,660.0	33,319.6	22,355.4	3,353.3





TN Project Credit in BRL B

Entity	15% BMAP I TN Required Reduction (lbs/yr)	Project TN Credit (lbs/yr)	% BMAP I TN Reduction Achieved	TN Reduction Remaining (lbs/yr)
Brevard County	6,343.1	5,893.0	92.9%	450.1
Cape Canaveral	886.4	1,821.0	205.4%	-934.6
Cocoa Beach	1,701.9	2,769.0	162.7%	-1,067.1
FDOT District 5	471.9	2,246.0	475.9%	-1,774.1
Indian Harbour Beach	1,017.6	1,025.5	100.8%	-7.9
Patrick AFB	2,614.7	4,012.0	153.4%	-1,397.3
Satellite Beach	1,572.9	2,521.0	160.3%	-948.1



TP Project Credit in BRL B

Entity	15% BMAP I TP Required Reduction (lbs/yr)	Project TP Credit (lbs/yr)	% BMAP I TP Reduction Achieved	TP Reduction Remaining (lbs/yr)
Brevard County	1,378.5	1,515.7	110.0%	-137.2
Cape Canaveral	220.3	613.3	278.4%	-393.0
Cocoa Beach	353.9	782.0	221.0%	-428.1
FDOT District 5	179.3	495.5	276.4%	-316.2
Indian Harbour Beach	174.8	289.3	165.5%	-114.5
Patrick AFB	748.4	1,059.2	141.5%	-310.8
Satellite Beach	298.2	576.6	193.4%	-278.4



Project Credit in BRL A

- The stakeholders in BRL project zone A also provided projects, although reductions are not required in this project zone.

Entity	Project TN Credit (lbs/yr)	Project TP Credit (lbs/yr)
Brevard County	142.0	48.0
Cape Canaveral Air Force Station	3,436.0	1,813.1
FDOT District 5	152.0	31.7
Kennedy Space Center	18,301.0	2,787.4





Questions?

