

2015 PROGRESS REPORT

for the Lower St. Johns River Main Stem Basin Management Action Plan

prepared by the

Division of Environmental Assessment and Restoration
Water Quality Restoration Program
Florida Department of Environmental Protection

with participation from the
**Lower St. Johns River TMDL
Executive Committee**

March 2016

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ACKNOWLEDGMENTS

This *2015 Lower St. Johns River Main Stem Basin Management Action Plan Progress Report* was prepared as part of a statewide watershed management approach to restore and protect Florida's water quality. It was prepared by the Florida Department of Environmental Protection with participation from the following Lower St. Johns River Main Stem stakeholders:

- Agriculture.
- Anheuser Busch.
- Camp Blanding.
- City of Atlantic Beach.
- City of Green Cove Springs.
- City of Jacksonville.
- City of Jacksonville Beach.
- City of Neptune Beach.
- City of Palatka.
- Clay County.
- Clay County Utility Authority.
- Florida Department of Agriculture and Consumer Services.
- Florida Department of Transportation.
- Georgia-Pacific.
- JEA.
- Naval Air Station Jacksonville.
- Naval Station Mayport.
- Putnam County.
- Seminole Electric.
- Smurfit-Stone Container.
- St. Johns County.
- St. Johns River Water Management District.
- Town of Hastings.
- Town of Orange Park.
- Town of Welaka.

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LIST OF ACRONYMS AND ABBREVIATIONS

µg/L	Micrograms Per Liter
µmhos/cm	Micromhos Per Centimeter
AGM	Annual Geometric Mean
APRICOT	A Prototype Realistic Innovative Community of Today
BMAP	Basin Management Action Plan
BMP	Best Management Practice
BNR	Bionutrient Removal
CBC	Clapboard Creek
CCUA	Clay County Utility Authority
cfs	Cubic Feet Per Second
CM	Channel Marker
COJ	City of Jacksonville
DEP	Florida Department of Environmental Protection
DO	Dissolved Oxygen
DOSAT	Dissolved Oxygen Saturation
EQIP	Environmental Quality Incentives Program
FDACS	Florida Department of Agriculture and Consumer Services
FDOT	Florida Department of Transportation
HWTT	Hybrid Wetlands Treatment Technology
kg	Kilograms
kg/yr	Kilograms Per Year
lbs/yr	Pounds Per Year
LSJR	Lower St. Johns River
mgd	Million Gallons Per Day
mg/L	Milligrams Per Liter
MS4	Municipal Separate Storm Sewer System
N	Nitrogen
NAS	Naval Air Station
NOI	Notice of Intent
NRCS	Natural Resources Conservation Service
NWQIP	National Water Quality Incentives Program
O&M	Operation and Maintenance
OAWP	Office of Agricultural Water Policy
ppt	Parts Per Thousand
RIB	Rapid Infiltration Basin
RST	Regional Stormwater Treatment
RWLARS	Reclaimed Water Land Application and Recovery System
SAV	Submerged Aquatic Vegetation
SCR	Selective Catalytic Reduction
SJRWMD	St. Johns River Water Management District
SSAC	Site-Specific Alternative Criteria
STORET	Storage and Retrieval (Database)
TCAA	Tri-County Agricultural Area
TMDL	Total Maximum Daily Load
TN	Total Nitrogen
TP	Total Phosphorus

UF–IFAS	University of Florida–Institute of Food and Agricultural Sciences
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
WBID	Waterbody Identification
WWTP	Wastewater Treatment Plant
WWTF	Wastewater Treatment Facility

SUMMARY

PROGRESS TOWARDS TOTAL MAXIMUM DAILY LOADS (TMDLS)

During 2015, the City of Jacksonville continued work on septic tank phase-outs by connecting some properties where sewer lines were available. Jacksonville also completed 2 water quality credit trades with JEA and the Florida Department of Transportation (FDOT), for a total of 40,910 kilograms per year of nitrogen reductions. Camp Blanding regraded over 38 miles of roads to achieve water quality improvements. The U.S. Naval Air Station Jacksonville completed the second phase of its reuse project that redirects wastewater discharges away from the river. St. Johns County completed Phase I of the Masters Tract Regional Stormwater Treatment (RST) system and substantially completed improvements to the Deep Creek West RST. Putnam County completed the Hiawatha Wastewater Treatment Facility (WWTF) phase-out and brought the new East Palatka WWTF on-line. JEA completed new reclaimed water transmission lines to Nocatee Oaks Phase 4 and increased the reclaimed water service capacity at its Arlington East facility by 2 million gallons per day (mgd). In addition, the Florida Department of Agriculture and Consumer Services (FDACS) continued to enroll producers in best management practices (BMPs) in the freshwater reach, increasing BMP enrollment by 16,911.1 acres in 2015.

The U.S. Naval Station Mayport began the design of its new wastewater facility in 2015. The reductions associated with this effort will be reported when the facility is operational.

The tables and figures below (**Table ES-1** and **Figure ES-1**, **Table ES-2** and **Figure ES-2**, and **Table ES-3** and **Figure ES-3**) illustrate the overall load reductions made by the stakeholders in the Lower St. Johns River (LSJR) Basin and the remaining reductions in nutrient loading needed to achieve the TMDLs in each segment of the river. Although some source categories have exceeded their reductions, there are individual stakeholders that still need to make reductions to meet their basin management action plan (BMAP) allocations.

Table ES-1: Progress towards the total phosphorus (TP) TMDL in the freshwater reach

* Exceeds the total required reductions for the source category.

Source	% of Controllable Load	Starting Load in Kilograms per Year (kg/yr)	2015 Load (kg/yr)	Allocation (kg/yr)	Remaining Reductions (kg/yr)	% Complete
WWTF*	45%	81,015	37,881	44,386	0	100%
MS4*	1%	1,500	1,256	1,256	0	100%
Non-MS4	7%	12,358	10,157	9,408	749	75%
Agriculture	47%	83,455	75,626	70,974	4,652	63%
Total	100 %	178,329	124,920	126,025	5,401	90 %

As indicated in **Table ES-1**, the reductions achieved by the wastewater facilities and the municipal separate storm sewer systems (MS4s) exceed the allocations to these sources. There are still reductions remaining that have been assigned to non-MS4 areas and to agricultural land uses, for an overall 90% completion.

Figure ES-1 shows the progress in reducing loads since the TMDL data period. As the wastewater facilities and MS4s exceed their requirements, the estimated 2015 TP load is less than the TP allocation for the river. Additional TP reductions are expected from those entities that have not met their individual TP reduction requirements.

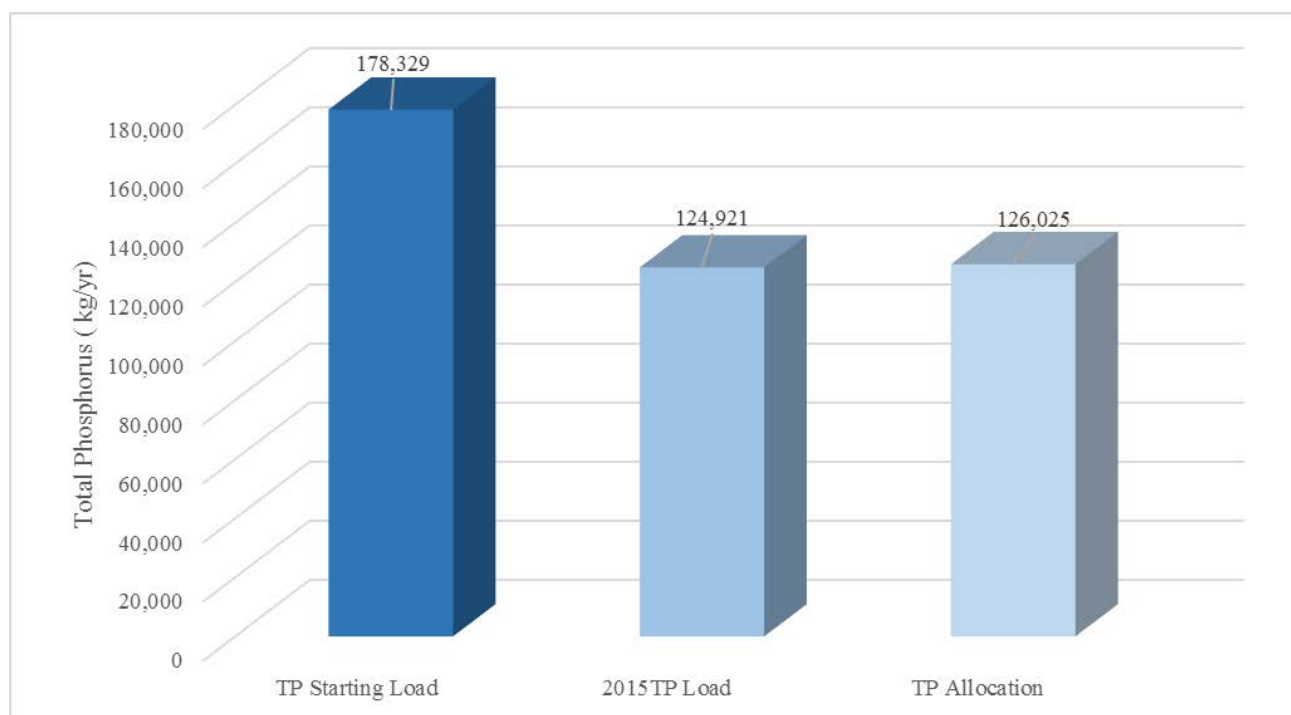
**Figure ES-1: Progress towards the TP TMDL in the freshwater reach**

Table ES-2: Progress towards the total nitrogen (TN) TMDL in the freshwater reach

* Exceeds the total required reductions for the source category.

Source	% of Controllable Load	Starting Load (kg/yr)	2015 Load (kg/yr)	Allocation (kg/yr)	Remaining Reductions (kg/yr)	% Complete
WWTF*	47%	364,650	195,560	237,200	0	100%
MS4*	1%	9,731	8,685	8,685	0	100%
Non-MS4	11%	88,705	75,828	74,119	1,709	88%
Agriculture	40%	310,700	232,709	194,336	38,373	67%
Total	100 %	773,786	512,782	514,340	40,232	84%

As indicated in **Table ES-2**, the freshwater TN reductions achieved by the wastewater facilities and the MS4s exceed the allocations to these sources, similar to the TP reductions. There are still reductions remaining that have been assigned to non-MS4 areas and to agricultural land uses, for an overall 84% completion.

Figure ES-2 shows the progress in reducing TN loads in the freshwater section since the TMDL data period. As the wastewater facilities and MS4s exceed their requirements, the estimated 2015 TN load is less than the TN allocation for the river. Additional TN reductions are expected from those entities that have not met their individual TN reduction requirements.

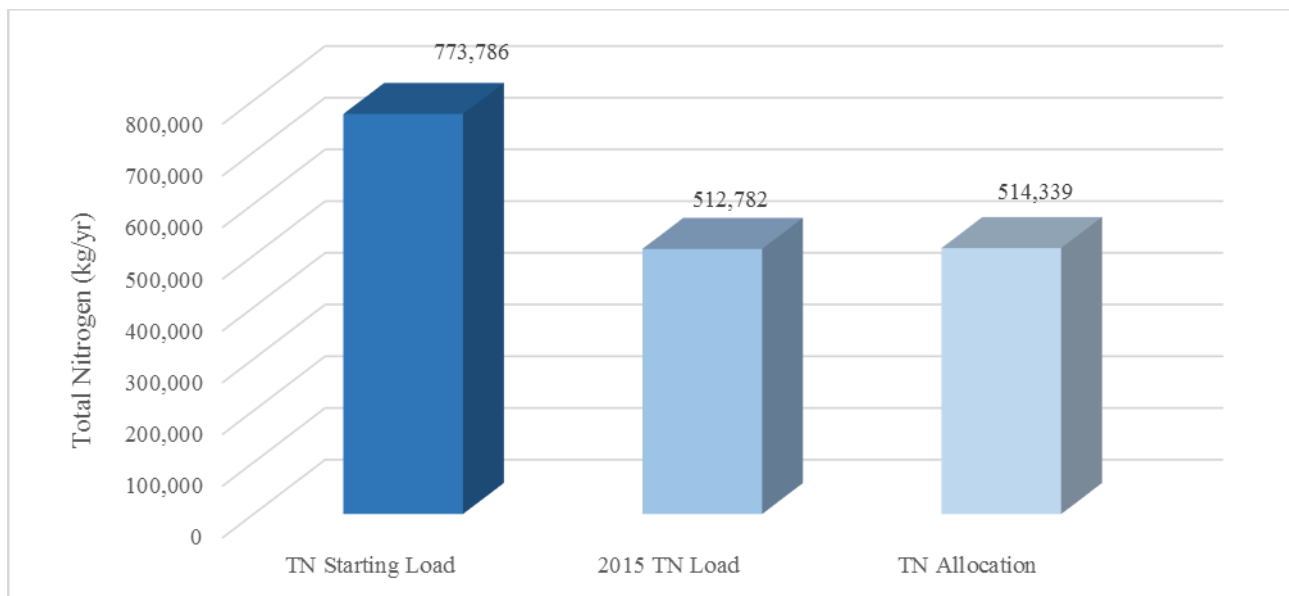
**Figure ES-2: Progress towards the TN TMDL in the freshwater reach**

Table ES-3: Progress towards the TN TMDL in the marine reach

* Exceeds the total required reductions for the source category.

** Reductions have not occurred for the agricultural sources; however, based on an evaluation of recent land uses, there does not appear to be agriculture remaining in the marine reach.

Source	% of Control- lable Load	Starting Load (kg/yr)	2015 Load (kg/yr)	Allocation (kg/yr)	Remaining Reductions (kg/yr)	% Complete
WWTF*	84%	1,786,542	838,561	878,326	0	100%
MS4	14%	291,657	222,526	136,422	86,104	45%
Non-MS4	1%	24,767	21,785	17,192	4,593	39%
Agriculture**	1%	12,800	12,800	4,170	8,630	0%
Total	100 %	2,115,766	1,095,672	1,036,110	99,327	94%

As described in **Table ES-3**, the TN reductions achieved by the marine section wastewater facilities exceed the allocations to these sources. There are reductions remaining that have been assigned to MS4 areas, non-MS4 areas, and to agricultural land uses, for an overall 94% completion.

Figure ES-3 shows the progress in reducing TN loads in the marine section since the TMDL data period. As the wastewater facilities exceed their requirements, the estimated 2015 TN load is more than the TN allocation for the marine section, but shows more progress than the outstanding reductions would indicate, because of the reductions beyond the requirements. Additional TN reductions are expected from those entities that have not met their individual TN reduction requirements.

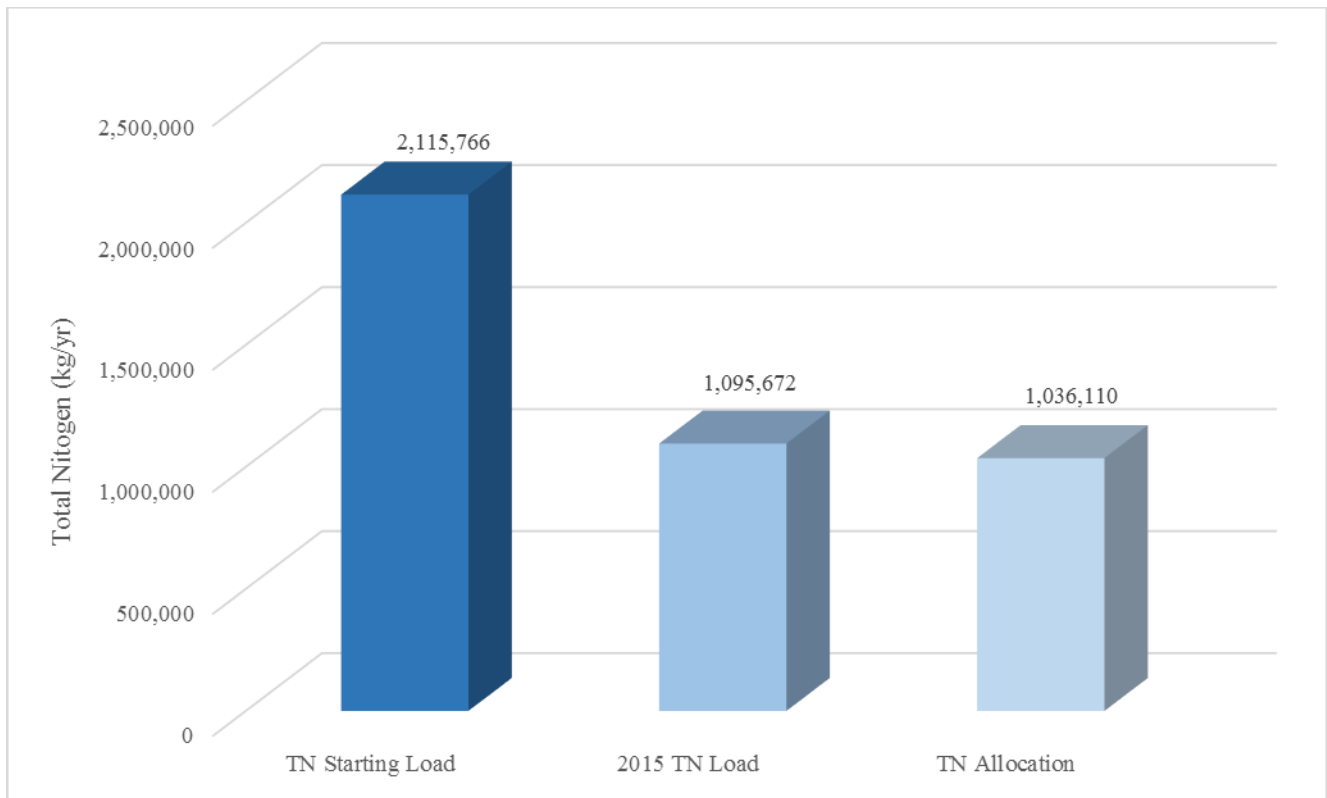


Figure ES-3: Progress towards the TN TMDL in the marine reach

WATER QUALITY EVALUATION

The annual report examined trends in both river and tributary nutrient concentrations, as well as the achievement of river water quality targets established during TMDL development. For 2015, the annual rainfall pattern in the LSJR Basin was similar to the long-term average both in terms of total accumulation and timing. For most river monitoring locations, TN and TP concentrations exhibit significant downward trends. TN concentrations are declining for all sites in the LSJR, while TP concentrations are declining significantly from Green Cove Springs northward. The trends in mean annual chlorophyll-*a* concentration appear to contradict the nutrient trends, with increasing trends in river segments from Green Cove Springs through Orange Park to south Jacksonville.

For the long-term monitoring station near Racy Point in the segment labeled as waterbody identification (WBID) K, TN concentrations have declined consistently and significantly since 1999. Similar declines have not occurred in TP concentrations. Elevated TP concentrations at Racy Point appear to be the result of loads entering the LSJR at the long-term river monitoring station located near Racy Point. At river mile 64, chlorophyll-*a* peaked at 60.3 micrograms per liter (µg/L) on June 8, 2015. Phytoplankton samples indicated a freshwater blue-green algal bloom occurring the second week in June. This bloom

was the largest occurring in the freshwater LSJR reach since the extreme *Aphanizomenon flos-aquae* bloom in 2010.

In the marine reach, the DO monitoring station at the Dames Point Bridge continued to meet the DO site-specific alternative criteria (SSAC) in 2015. During 2015, data were not available for the Clapboard Creek site due to equipment failure, and minimal data were available for the channel marker 36 site.

Section 1: INTRODUCTION

1.1 Purpose of the Report

This is the seventh annual report for the Lower St. Johns River (LSJR) Main Stem Basin Management Action Plan (BMAP). **Section 2** provides an overview of water quality trends during the first seven years of BMAP implementation. **Section 3** describes the major accomplishments during the period from January 1, 2015, through December 31, 2015. **Section 4** includes a summary of efforts for the upcoming year (January 1, 2016–December 31, 2016).

1.2 Total Maximum Daily Loads (TMDLs) for the LSJR Basin

The Florida Department of Environmental Protection (DEP) adopted TMDLs for the main stem of the LSJR Basin in June 2008. The TMDLs include total phosphorus (TP) and total nitrogen (TN) in the freshwater reach to achieve reductions in chlorophyll-*a* levels in this portion of the river. A TN TMDL was also established in the marine reach to meet dissolved oxygen (DO) levels that would be protective of aquatic life uses. TMDLs and pollutant load allocations adopted by rule for the watershed can be found on [the DEP final TMDL webpage](#).

1.3 LSJR Basin

The area addressed by the LSJR BMAP is the portion of the St. Johns River that flows between the mouth of the Ocklawaha River, its largest tributary, and the Atlantic Ocean, encompassing a 2,750-square-mile drainage area (see **Figure 1**). Within this reach, the St. Johns River is 101 miles long and has a water surface area of approximately 115 square miles. Major centers of population in the LSJR Basin include Palatka, a city of 10,700 at the southern entrance to the basin; Green Cove Springs, a city of 4,700 at the midpoint; and the Orange Park, Middleburg, and Jacksonville metropolitan area, with a population of over 1 million, in the northern portion of the basin.

For assessment purposes, DEP has divided the LSJR Basin into water assessment polygons with a unique waterbody identification (WBID) number for each watershed or stream reach. The main stem of the LSJR is divided into 15 WBID segments (see **Figure 1**). The LSJR is also divided into 2 reaches based on salinity: marine and freshwater (**Figure 2**).



Figure 1: Location of the LSJR Basin in northeast Florida



Figure 2: Marine and freshwater reaches in the LSJR Basin

Section 2: WATER QUALITY EVALUATION

2.1 Precipitation and Hydrologic Conditions for 2015

Because the nonpoint source nutrient load to the LSJR, as well as the location and severity of algal blooms, depends on runoff and river flow, it is worthwhile to review the annual precipitation pattern. For 2015, the annual rainfall pattern in the LSJR Basin was similar to the long-term average, both in terms of total accumulation and timing, as shown in **Figure 3**.

In the figures, blue lines and symbols identify the 1995 to 2014 mean, while red lines represent 2015. **Figure 3a** compares the 2015 rainfall accumulation with the 20-year mean for stations at Elkton, Penny Farms, and the Jacksonville International Airport. The cumulative rainfall plot shows the total accumulation with instantaneous slope for any specific duration indicating the rate of accumulation. The typical pattern exhibits a moderate rate of accumulation from January through May, and from October through December, with a higher rate of accumulation from June through September. Deviations from the long-term pattern are apparent in May and June, when the precipitation rate lagged the long-term average, and in August and September, when the long-term rate is exceeded.

The upstream St. Johns River discharge entering the LSJR matched the long-term pattern, with the exception of lower than average inflow in July (**Figure 3b**). Discharge at Palatka was calculated as the sum of measured discharge at the Buffalo Bluff and Dunns Creek stations. Tributary flows in the basin for Black Creek (**Figure 3c**) and Deep Creek (**Figure 3d**) appeared to respond to the rainfall pattern, with lower than average flow (for Black Creek) in June, but higher than average flow in September. For 2015, the maximum upstream encroachment of the statutory marine salinity condition of 1,500 milligrams per liter (mg/L) chloride reached river mile 43, very close to the long-term average location and the line of demarcation used to separate fresh and marine reaches for the TMDL.

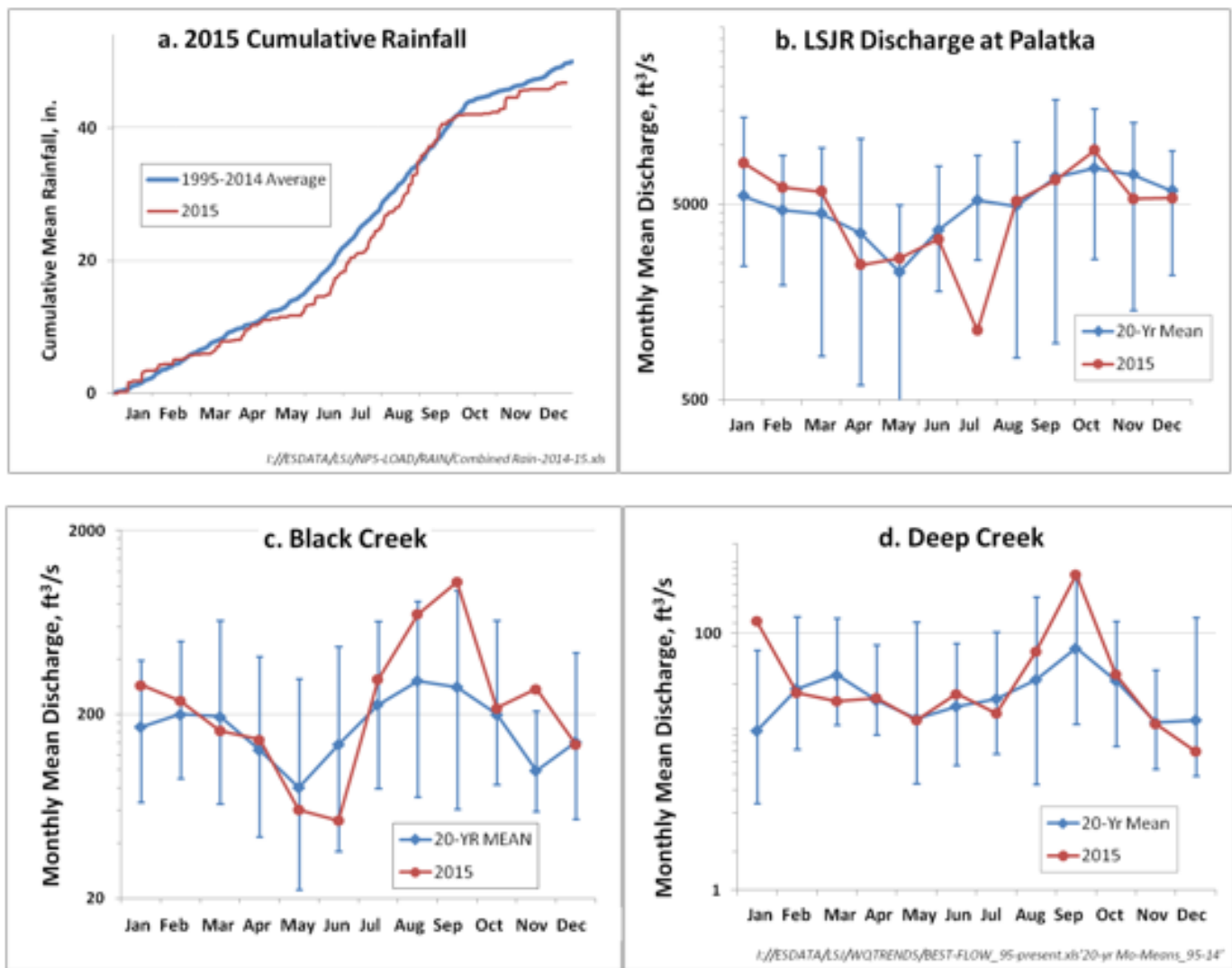


Figure 3. Precipitation and discharge conditions in the LSJR Basin for 2015

2.1.1 River Patterns in Nutrient Concentrations and Algal Productivity

The LSJR exhibits distinct longitudinal trends in TN, TP and chlorophyll-*a* from Lake George to the mouth (**Figure 4**). Horizontal bars represent the 15-year annual geometric mean (AGM) concentrations, with blue error bars bracketing the 95% confidence intervals for the mean. Red circles represent the 2015 mean concentrations for the corresponding locations. Green bars indicate that the location exhibits a significant decreasing trend in concentration for the 15-year record; yellow indicates no significant trend; and red indicates a significant increasing trend. Trends are taken from the St. Johns River Water Management District (SJRWMD) annual Status and Trends Assessment.

The outlet of Lake George exhibits the highest average TN concentrations in the estuary, originating in part from the incorporation of atmospheric nitrogen from the productivity of nitrogen (N)-fixing blue-

green algae (**Figure 4, Panel a**). A second longitudinal peak is discernible from river mile (RM) 64 through 50, again in part due to external inputs and to the fixation of atmospheric N by blue-green algae that thrive in the lacustrine freshwater reach of the estuary. In the last 20 miles of river, TN concentrations decline sharply in response to the dilution with lower concentration Atlantic shelf water through tidal mixing. The longitudinal pattern is reversed for TP (**Figure 4, Panel b**), with the lowest concentrations just downstream of the inflow of the Ocklawaha River and at Palatka, and from there increasing to a peak near downtown Jacksonville, before declining due to tidal mixing. Chlorophyll-*a*, the standard measure of algal biomass, follows a pattern similar to TN, with the highest levels at Lake George, and within the LSJR freshwater reach (**Figure 4, Panel c**). This pattern exists because the shallower upstream freshwater portions of the estuary have a larger proportion of the water column illuminated and hence suitable for algal productivity. Though the chlorophyll-*a* pattern is correlated with the longitudinal TN pattern, TN is most likely not the cause of higher algal biomass, but more likely a result of algal N-fixation.

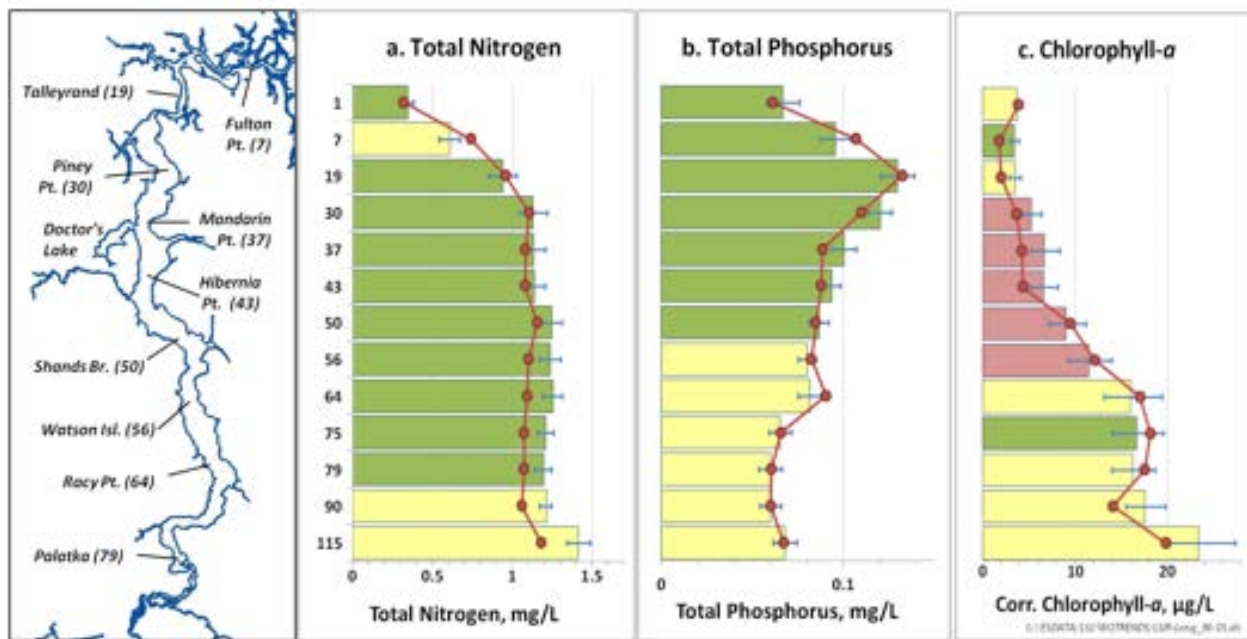


Figure 4. Longitudinal patterns in TN, TP, and chlorophyll-*a* concentrations for the St. Johns River Estuary

The bars of **Figure 4** are color-coded based on the 15-year trends in annual mean concentrations for river monitoring locations. Green bars identify significantly decreasing trends, yellow bars indicate no significant trend, while red bars indicate a significant upward trend. For most river monitoring locations, TN and TP concentrations exhibit significant downward trends. TN concentrations are declining for all

sites in the LSJR, while TP concentrations are declining significantly from Green Cove Springs northward. The trends in mean annual chlorophyll-*a* concentration appear to contradict the nutrient trends, with increasing trends in river segments from Green Cove Springs through Orange Park to south Jacksonville. This anomaly is believed due to the recent increased occurrence of high discharge in the spring bloom season at the end of the trend assessment record. High river discharge in spring leads to freshwater conditions down-estuary, creating conditions that are conducive for the growth of blue-green algae. Though TN and TP concentrations have been declining in this reach, concentrations are still sufficiently high for algae to reach high biomass levels if the satisfactory hydrodynamic conditions occur.

The red circles in **Figure 4** chart the 2015 annual mean concentrations. At most locations, TN concentrations fall below the long-term average and should positively influence the prevailing downward TN trend. TP concentrations in 2015 also appear consistent with current trends, with freshwater reach mean concentrations matching the long-term means, perpetuating the stable trend for this reach. Further, oligohaline reach means are below the long-term means in the reach, which should favor their continued downward trend. Throughout the freshwater reach, 2015 chlorophyll-*a* concentrations were slightly above the long-term mean but below the long-term mean for stations in the oligohaline reach. These lower 2015 annual means may be sufficient to curtail the upward trends in chlorophyll-*a* in this reach.

2.1.2 Long-Term and Annual Patterns in Nutrients and Algal Growth in the Worst-Case WBIDs

During the development of the LSJR TMDL, agency technical staff proposed the concept of the "worst-case WBID" to refer to the waterbody identification system locations where the major symptoms of eutrophication in the LSJR, algal blooms and low DO, were manifested most severely. The basic tenet of the concept was that if nutrient reductions were proposed that led to the attainment of designated use in these segments, then the remainder of the river would also be protected. In the freshwater reach, these worst-case WBIDs are situated between Rice Creek and Toco Creek (WBIDs K and L), while in the marine reach, where the river exhibited its lowest DO levels, the worst-case WBID is between Fulton Point and Dames Point (WBID B).

For the long-term monitoring station near Racy Point in WBID K, TN concentrations have declined consistently and significantly since 1999, and the 2015 annual mean TN concentration, at 1.1 mg/L, is 32% lower than the peak of 1.6 mg/L observed in 1999 (**Figure 5**). Similar declines have not occurred in TP concentrations. The 2015 annual mean of 0.09 mg/L is equivalent to the 78th percentile for the

normalized distribution of annual means from 1995 to 2015. Elevated TP concentrations at Racy Point appear to be the result of loads entering the LSJR, as TP concentrations upstream at Palatka are trending downward, and the difference between Racy and Palatka paired annual means and individual sample date values have increased significantly over time.

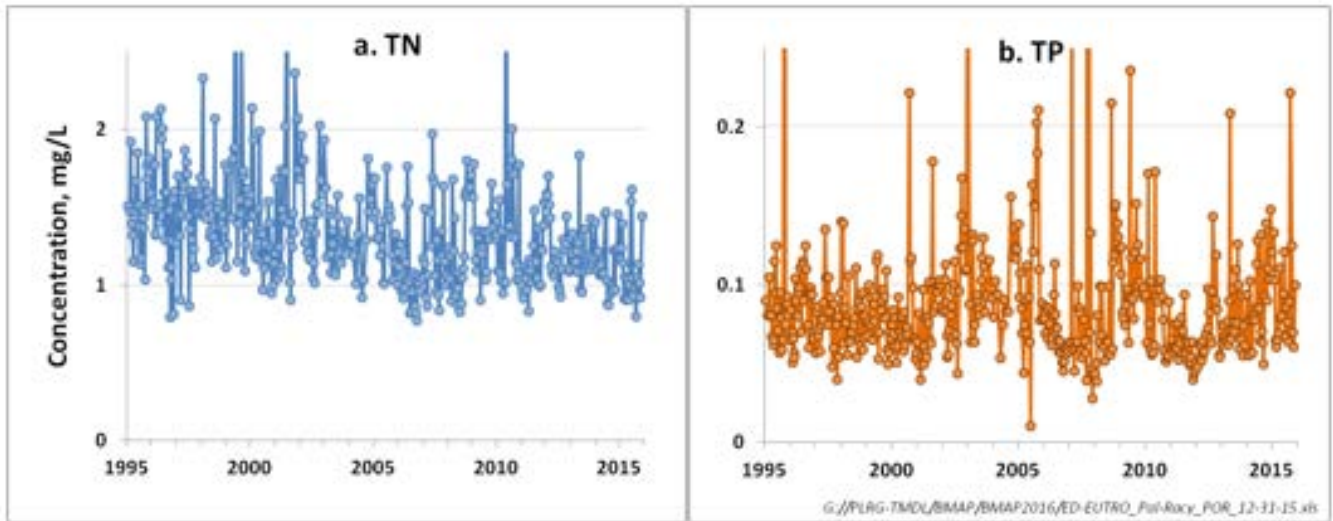


Figure 5: Temporal trend in TN and TP concentrations for the long-term monitoring station in WBID K near Racy Point

Figure 6 charts the concentrations of chlorophyll-*a* and DO in the freshwater WBIDs K and L for 2015. Green and purple circles represent the concentrations measured for instantaneous grab samples collected at Racy Point in WBID K, while smooth lines are the data collected at the U.S. Geological Survey (USGS) continuous sensor site at Dancy Point in WBID L. Green lines are daily average chlorophyll-*a* converted from YSI phycocyanin sensor readings, while purple lines are the 15-minute DO measurements. At the long-term river monitoring station located near Racy Point at RM 64, chlorophyll-*a* peaked at 60.3 micrograms per liter ($\mu\text{g/L}$) on June 8, 2015.

The highest concentrations in 2015 in the LSJR were observed just downstream of these "worst-case" WBIDs, between Toco Creek and the Shands Bridge, where chlorophyll-*a* peaked at 82 $\mu\text{g/L}$. Phytoplankton samples indicated that this freshwater reach bloom was dominated by the filamentous, non-nitrogen-fixing blue-green *Limnothrix* spp. During this bloom, several sites recorded slightly elevated levels of the algal toxins cylindrospermopsin and saxitoxin, though at levels well below proposed recreational guidelines (adopted standards do not currently exist for these toxins). As is typical of LSJR freshwater blue-green blooms, they disappear quickly in a rapid senescence with an associated

low DO episode, which **Figure 6** shows in the second week in June. During this senescence, DO dropped briefly below the 38% percent saturation minimum, though with insufficient duration to constitute an exceedance of this standard. The bloom was the largest in the freshwater LSJR since the extreme *Aphanizomenon flos-aquae* bloom in 2010, though it remained below the TMDL target, which seeks to limit the duration of algal blooms (defined as a concentration of chlorophyll-*a* greater than 40 µg/L) to less than 40 days. The total duration above the bloom level of 40 µg/L at Racy Point was 30 days (**Figure 7**). Downstream at the site of the chlorophyll-*a* maximum, the duration was 32 days.

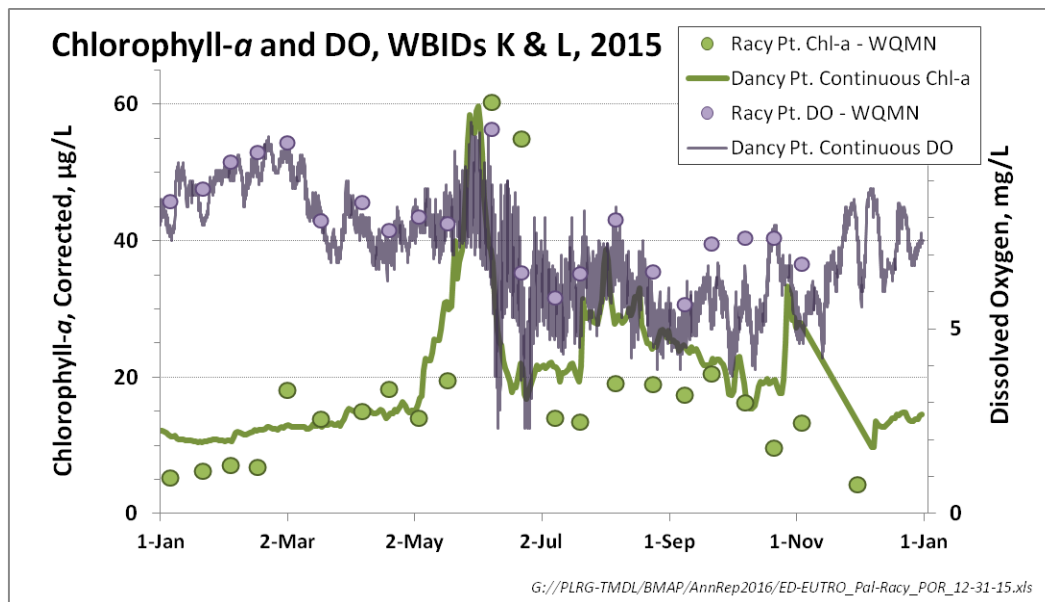


Figure 6: Chlorophyll-*a* and DO in 2015 at monitoring sites in the LSJR freshwater reach, WBIDs K and L

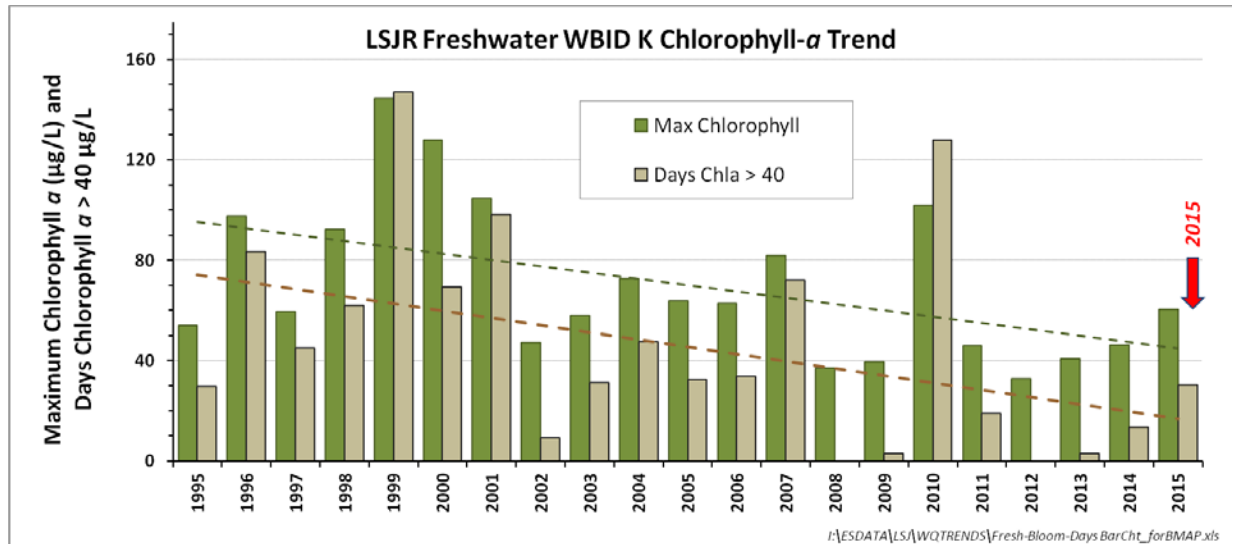


Figure 7: Long-term trend in chlorophyll-a maximum (green bars) and total bloom duration (tan bars) for the benchmark LSJR freshwater reach monitoring site at Racy Point, 1995–2015

In the marine reach of the river, concentrations of TN and TP continue to trend downward. To assess marine reach trends for the BMAP progress report, DEP examined nutrient concentrations at the long-term monitoring site near the Talleyrand section of Jacksonville. Though this station is located in WBID D, ten miles upstream of the worst-case WBID B, it has a longer-term data record and is less influenced by tidal mixing, thus providing a stronger signal of river water quality trends.

TN concentrations have significantly decreased at this location, with the mean concentration observed in 2015 (0.95 mg/L; SJRWMD data for surface, ebb tide) roughly 20% lower than the average annual mean from 1995 to 1999 (**Figure 8a**). Concentrations of TP at this location peaked around 2005 (**Figure 8b**) and since have declined significantly. Data collected by the SJRWMD are shown in blue diamonds, while data collected by Jacksonville are shown in red circles. Daily data collected by the SJRWMD are the mean of flood and ebb slack collections from 2003 to 2010, and from this time are just the ebb slack condition. Jacksonville data are collected regardless of tide.

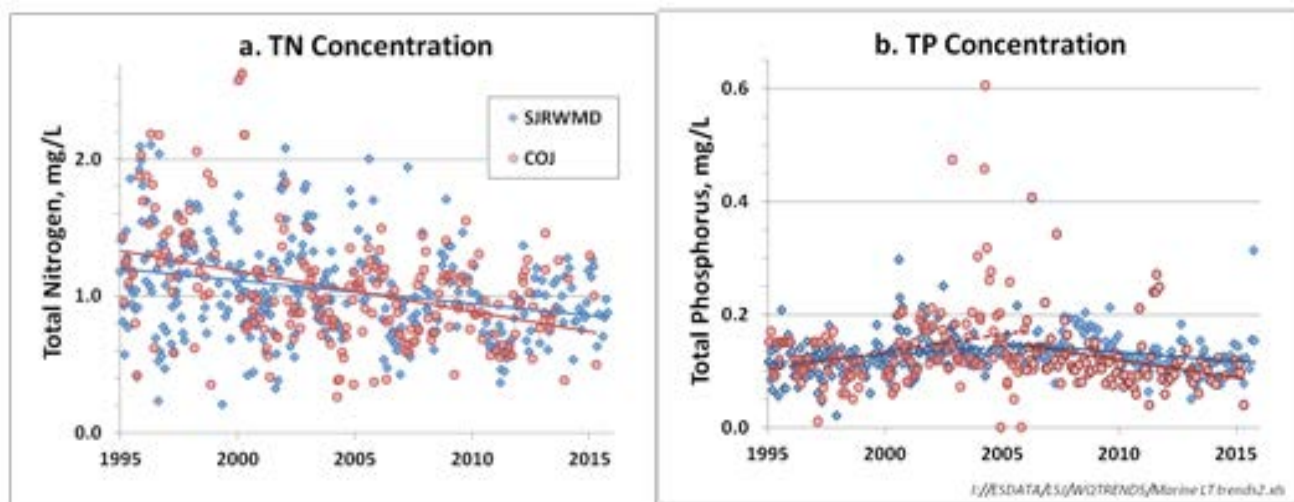


Figure 8: Temporal trends in Surface TN and TP at the long-term monitoring site near Talleyrand in Jacksonville, 1995–2015

2.2 Evaluation of the Dames Point Sonde Data for 2015

2.2.1 Introduction

Hourly DO, specific conductance, and water temperature measurements reported from 2 depths (approximately 8 feet and 15 feet below the average water surface level) by the USGS at the Dames Point Bridge (USGS 302309081333001) in 2015 were processed to obtain daily average DO concentrations and DO saturation (DOSAT). Note that the dataset is marked as provisional at this time. Specific conductance measurements were converted to salinity for the calculation of DOSAT. Dates

with fewer than 16 observations were excluded from further analysis. Daily average DO concentrations were then ranked from low to high to assign observations in the respective bins to determine whether the DO site-specific alternative criteria (SSAC) were attained. The DO SSAC was expressed as follows:

$$\left(\text{Total Fractional Exposure} \right) = \frac{\text{Days between } 4.0 - < 4.2 \text{ mg/L}}{16 \text{ day Max}} + \frac{\text{Days between } 4.2 - < 4.4 \text{ mg/L}}{21 \text{ day Max}} + \frac{\text{Days between } 4.4 - < 4.6 \text{ mg/L}}{30 \text{ day Max}} + \frac{\text{Days between } 4.6 - < 4.8 \text{ mg/L}}{47 \text{ day Max}} + \frac{\text{Days between } 4.8 - < 5.0 \text{ mg/L}}{55 \text{ day Max}}$$

The total fractional exposure must be at or below 1.0 for the annual evaluation period for attainment. Annual graphs are presented of daily average DO (**Figure 9**) and DOSAT (**Figure 10**) at the 2 depths along with summary statistics (**Table 1**). The total fractional exposure for 2015 was calculated to be 0.53 and 0.61 for the Dames Point top and bottom measurements, respectively (**Table 2**).

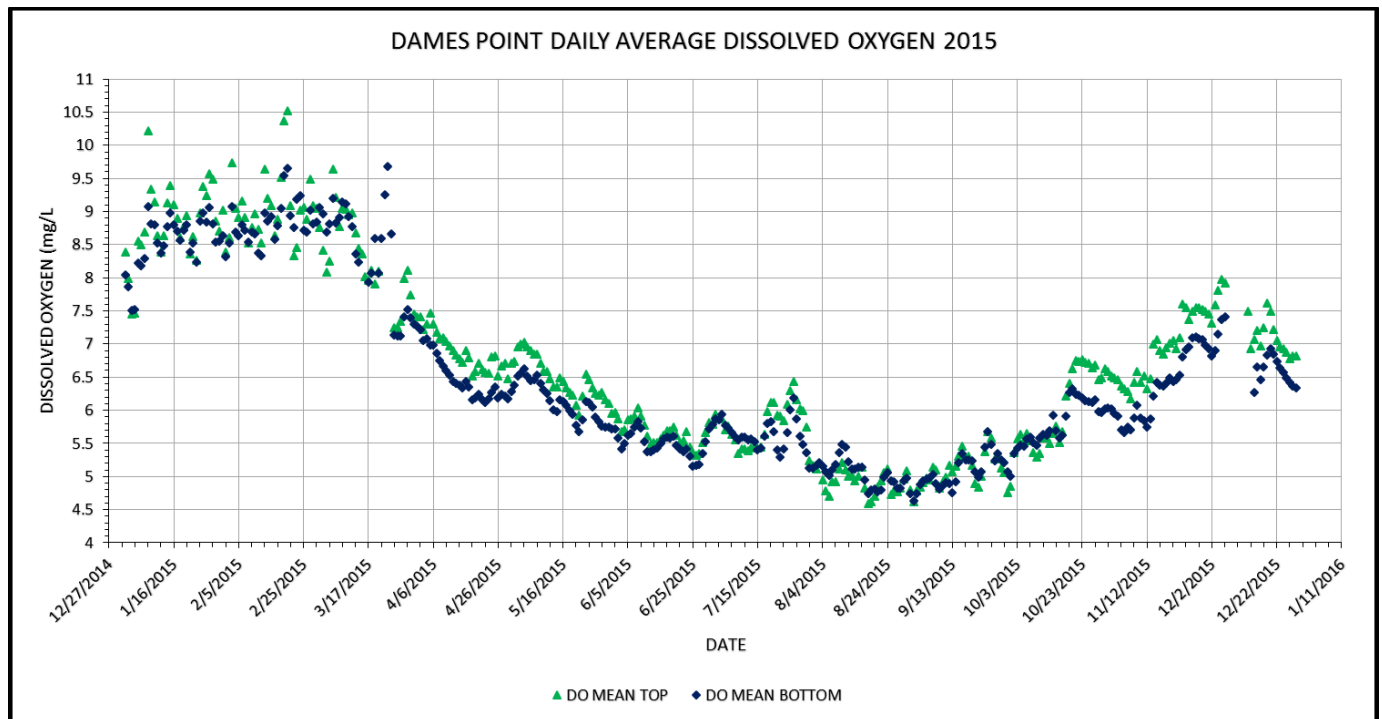


Figure 9: Daily average DO concentrations at Dames Point in 2015

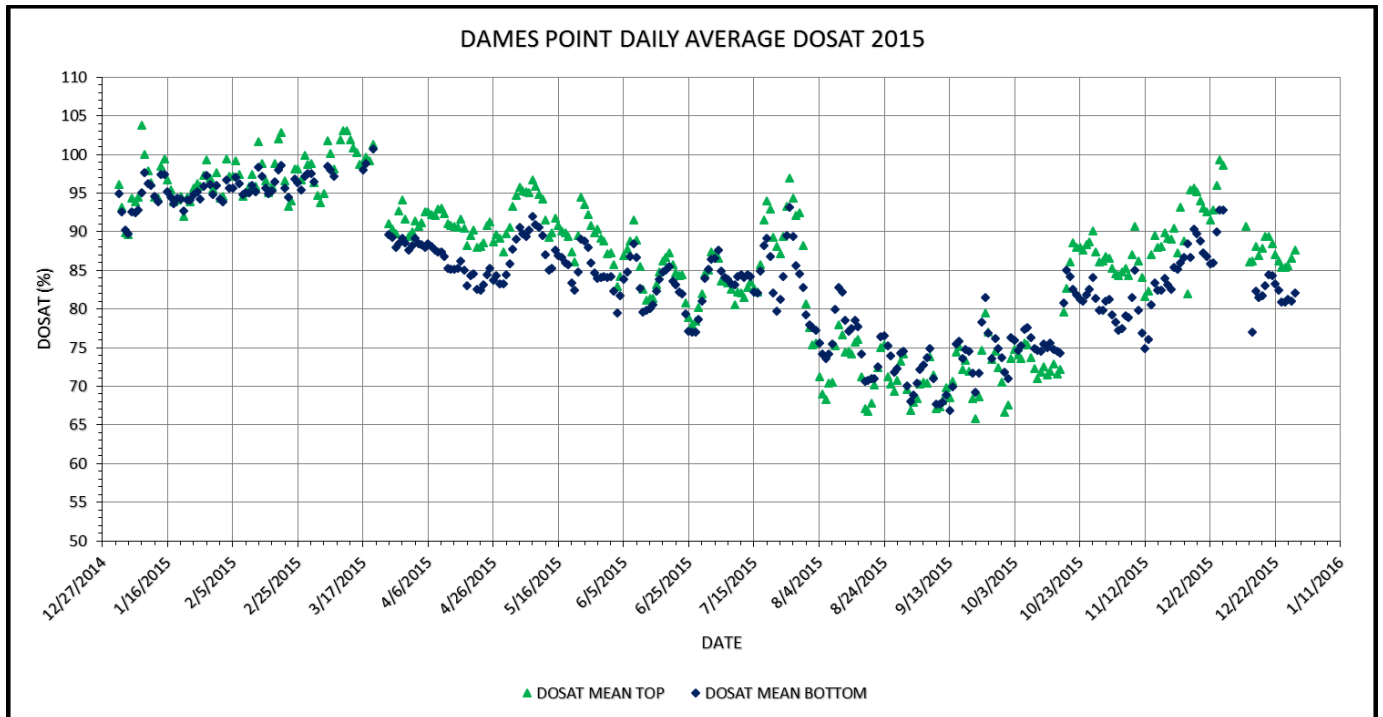


Figure 10: Daily average DOSAT at Dames Point in 2015

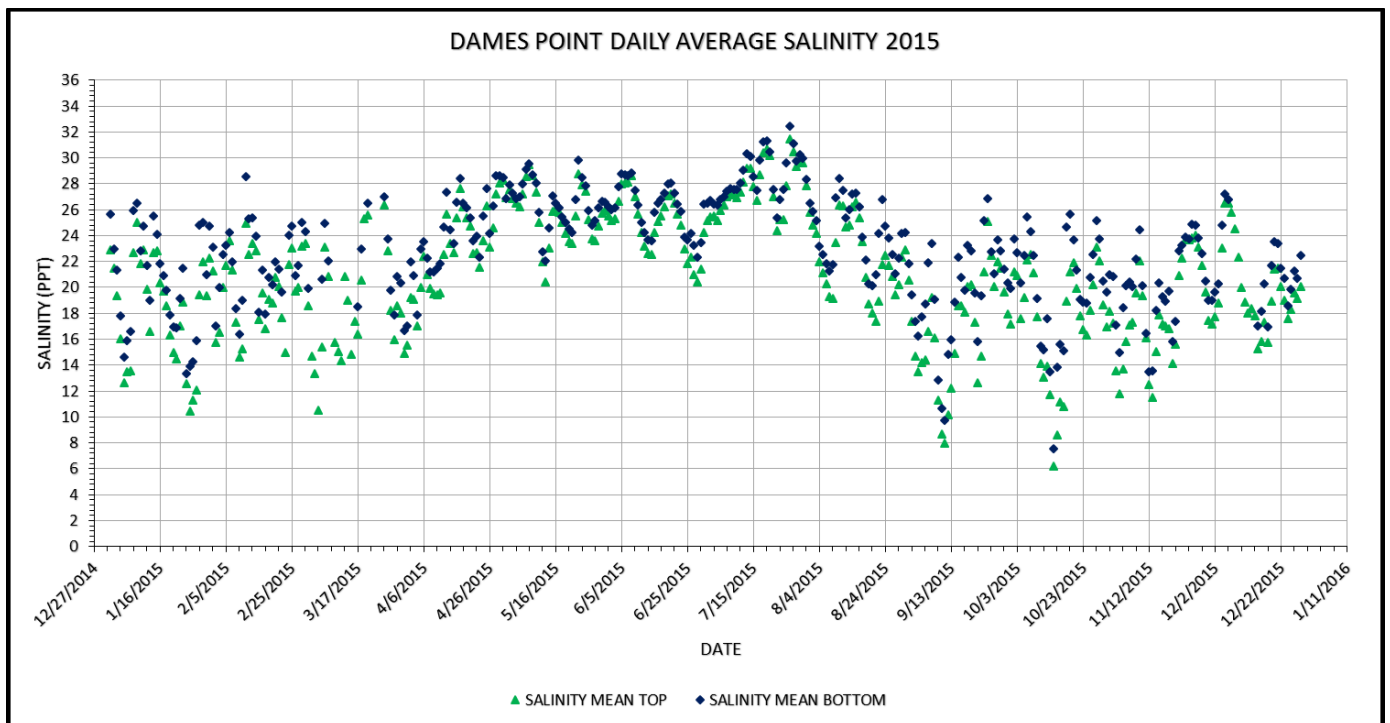
Table 1: Summary of daily average DO and DOSAT for 2015

Statistic	Bottom DO (mg/L)	Bottom DOSAT (%)	Top DO (mg/L)	Top DOSAT (%)
N of Cases	352	337	352	351
Minimum	4.64	66.89	4.60	65.84
Maximum	9.69	100.68	10.53	103.76
Mean	6.51	84.25	6.72	86.70
Standard Deviation	1.34	7.70	1.39	9.40
Pct1	4.75	67.94	4.70	66.82
Pct5	4.92	71.28	4.85	69.38
Pct10	5.08	74.25	5.04	71.45
Pct20	5.41	77.00	5.42	75.62
Pct25	5.50	78.66	5.56	81.38
Pct30	5.60	80.73	5.68	83.48
Pct40	5.81	82.48	6.16	86.59
Pct50	6.14	84.18	6.52	88.53
Pct60	6.40	85.33	6.85	90.38
Pct70	6.92	88.05	7.29	92.70
Pct75	7.24	89.23	7.55	94.03
Pct80	8.24	91.98	8.13	94.86
Pct90	8.80	95.56	8.92	97.49
Pct95	8.97	97.15	9.15	99.39
Pct99	9.25	98.46	9.74	102.84

Table 2: Total fractional exposure calculation for 2014

Sonde	DO 4.0-<4.2	DO 4.2-<4.4	DO 4.4-<4.6	DO 4.6-<4.8	DO 4.8-<5.0	Exposure
Top	0	0	0	8	20	0.53
Bottom	0	0	1	11	19	0.61

Figure 11 and **Figure 12** illustrate the corresponding daily average salinity and specific conductance at Dames Point during 2015. Salinities at Dames Point ranged between 6.2 and 32.42 parts per thousand (ppt). Based on Subsection 62-302.200(30), Florida Administrative Code (F.A.C.), predominantly marine waters means specific conductance $\geq 4,580$ micromhos per centimeter ($\mu\text{mhos/cm}$) measured in the bottom half of the water column. The minimum daily average specific conductance in 2015 was 10,708 $\mu\text{mhos/cm}$. **Figure 13** shows the daily average water temperature at Dames Point during 2015. **Table 3** summarizes the total fractional exposure calculated based on the USGS measurements at the Dames Point Bridge over the 2008 to 2015 period.


Figure 11: Daily average salinity at Dames Point in 2015

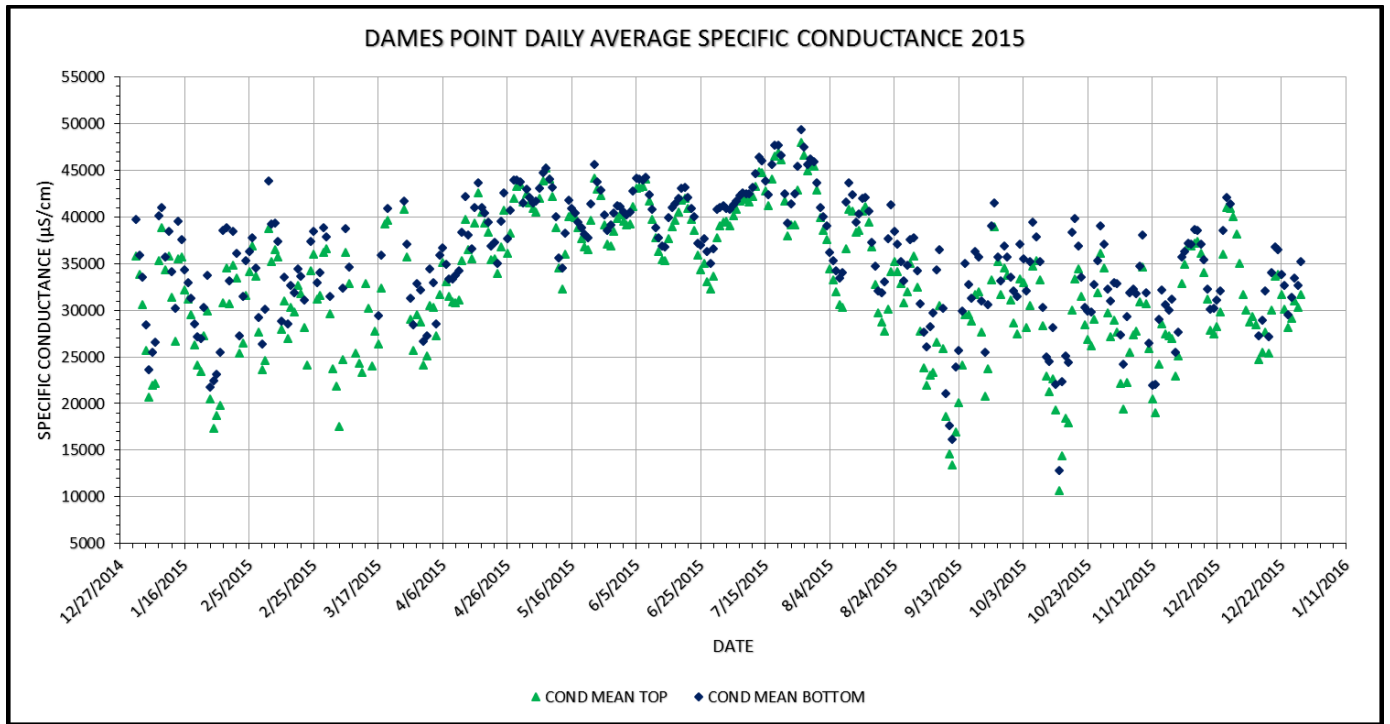


Figure 12: Daily average specific conductance at Dames Point in 2015

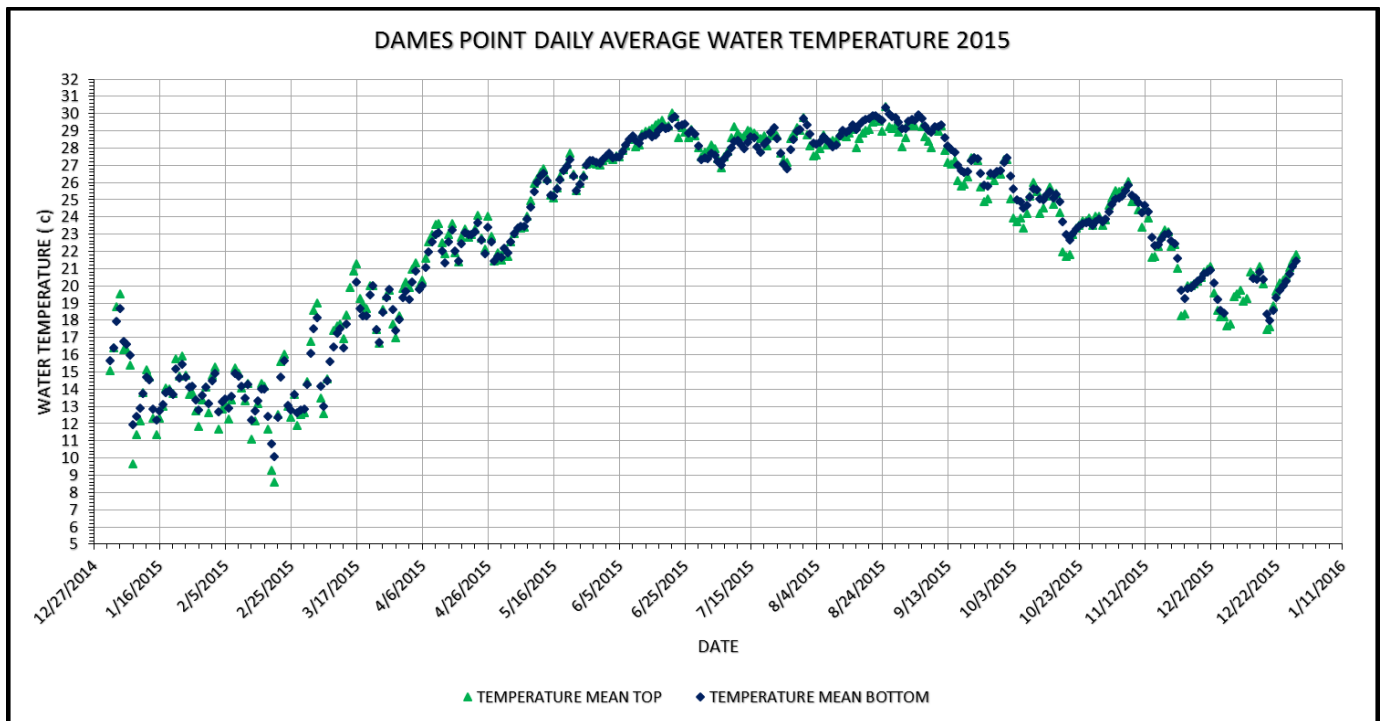


Figure 13: Daily average water temperature at Dames Point in 2015

Table 3: Total fractional exposure calculation at Dames Point, 2008–15

Year	Top	Bottom
2008	0.07	0.00
2009	0.24	0.56
2010	0.00	0.00
2011	0.04	0.25
2012	0.09	0.05
2013	0.05	0.13
2014	0.00	0.13
2015	0.53	0.61

2.3 Evaluation of the Buckman Bridge DO Sonde Data 2015

2.3.1 Introduction

Thirty-minute DO, specific conductance, and water temperature measurements reported from two depths by the USGS at the Buckman Bridge (USGS 301124081395901) in 2015 were processed to obtain daily average DO concentrations and DOSAT. Specific conductance measurements were converted to salinity for the calculation of DOSAT. Dates with fewer than 24 observations were excluded from further analysis.

Annual graphs are presented of daily average DO (**Figure 14**) and DOSAT (**Figure 15**) at the two depths along with summary statistics (**Table 4**). The minimum daily DO at both depths was greater than 6 mg/L. Note that this DO station was not operational for a period in May and June 2015, and therefore data from that time are unavailable.

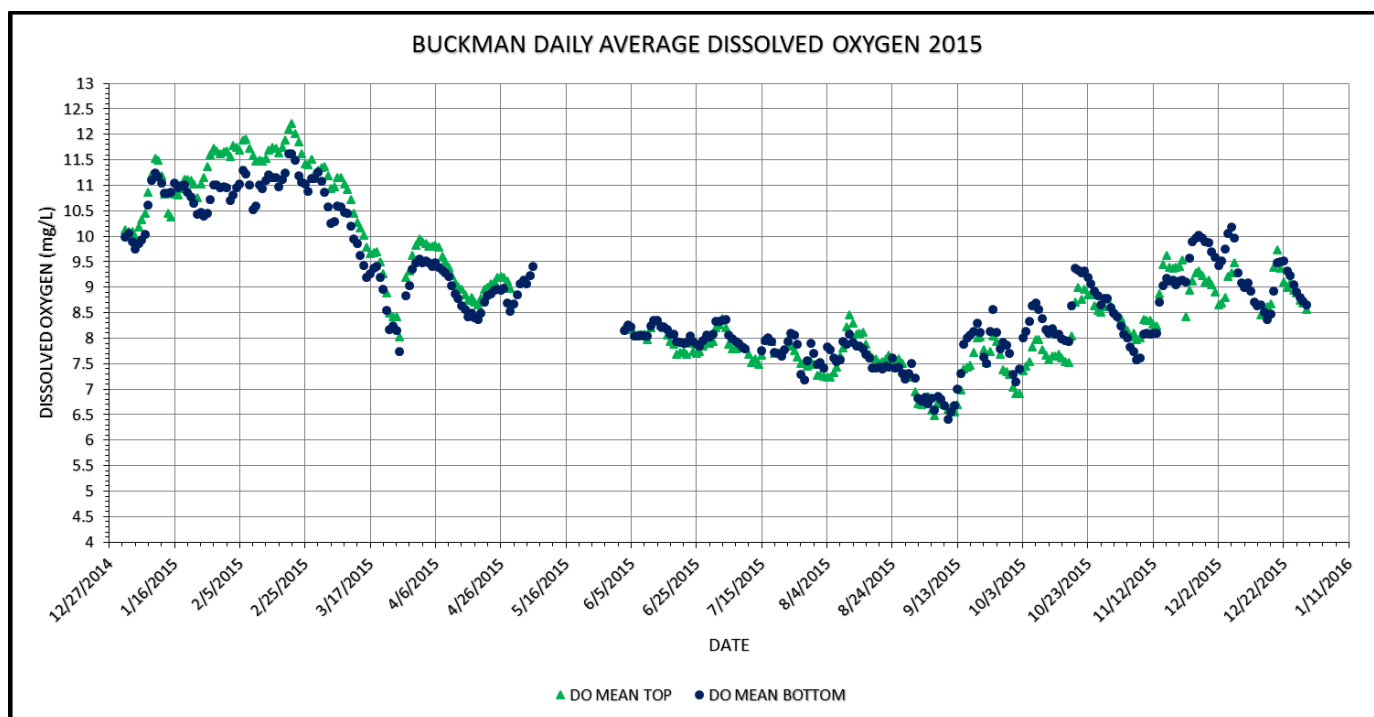


Figure 14: Daily average DO concentrations at Buckman Bridge in 2015

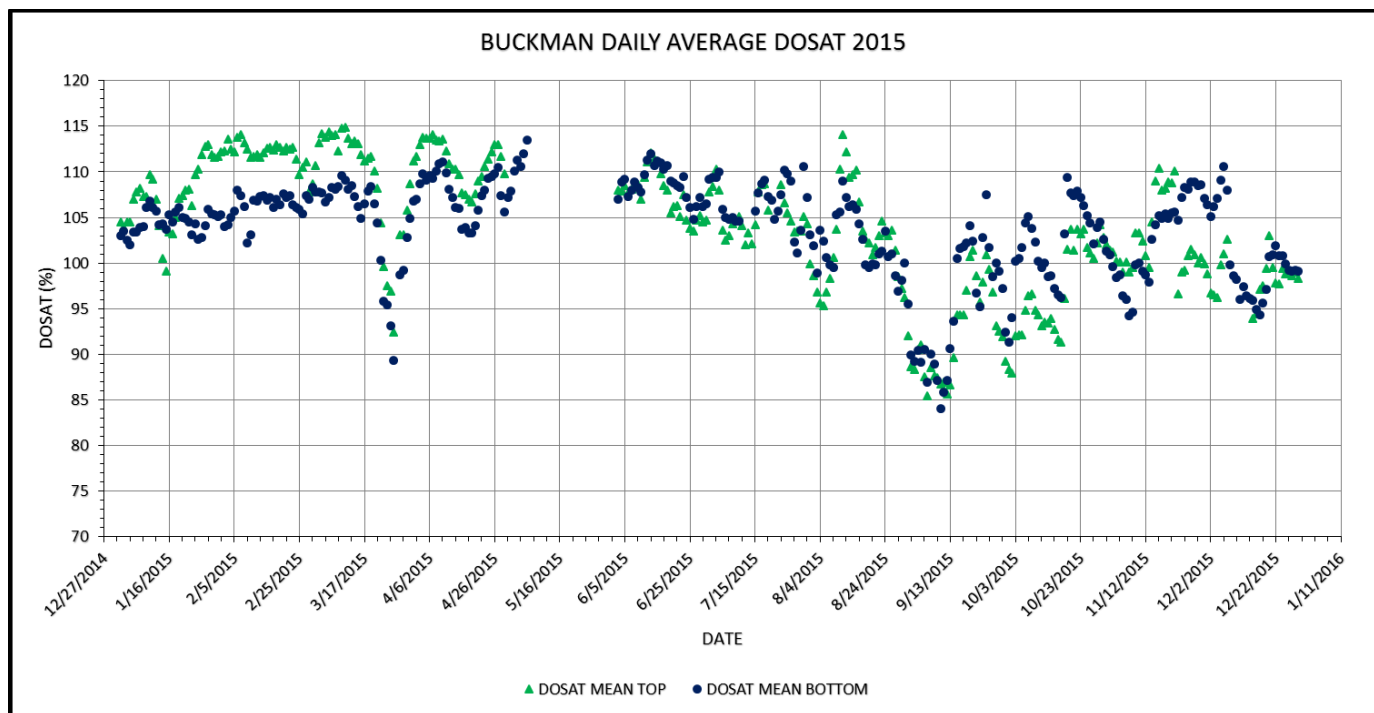


Figure 15: Daily average DOSAT at Buckman Bridge in 2015

Table 4: Summary statistics of daily average DO and DOSAT for 2015

Statistic	Bottom DO (mg/L)	Bottom DOSAT (%)	Top DOSAT (mg/L)	Top DOSAT (%)
N of Cases	331	331	318	318
Minimum	6.42	84.09	6.48	85.45
Maximum	11.61	113.48	12.20	114.91
Mean	8.88	103.74	8.93	104.12
Standard Deviation	1.24	5.34	1.47	7.13
Pct1	6.66	87.07	6.61	86.73
Pct5	7.23	93.13	6.97	90.74
Pct10	7.50	96.34	7.41	93.91
Pct20	7.88	99.75	7.66	98.30
Pct25	7.94	100.67	7.75	99.44
Pct30	8.05	101.94	7.89	100.60
Pct40	8.24	103.86	8.18	103.07
Pct50	8.65	104.98	8.59	104.52
Pct60	9.05	106.12	9.00	107.52
Pct70	9.41	107.17	9.41	109.01
Pct75	9.68	107.43	9.81	110.25
Pct80	10.04	108.04	10.44	111.38
Pct90	10.96	109.30	11.45	112.68
Pct95	11.10	110.19	11.69	113.56
Pct99	11.33	111.41	11.95	114.22

As shown in **Figure 16**, daily average salinities at the Buckman Bridge in 2015 ranged between 0.26 and 11.79 ppt. **Figure 17** graphs daily average specific conductance. **Table 5** presents summary statistics of the daily average specific conductance at the two depths. Based on Subsection 62-302.200(30), F.A.C., predominantly marine waters means specific conductance greater than or equal to 4,580 $\mu\text{mhos/cm}$ measured in the bottom half of the water column. Based on observations from the bottom sample depth, approximately 77% of the daily average specific conductance values were below the predominantly marine threshold. **Figure 18** graphs daily average temperatures.

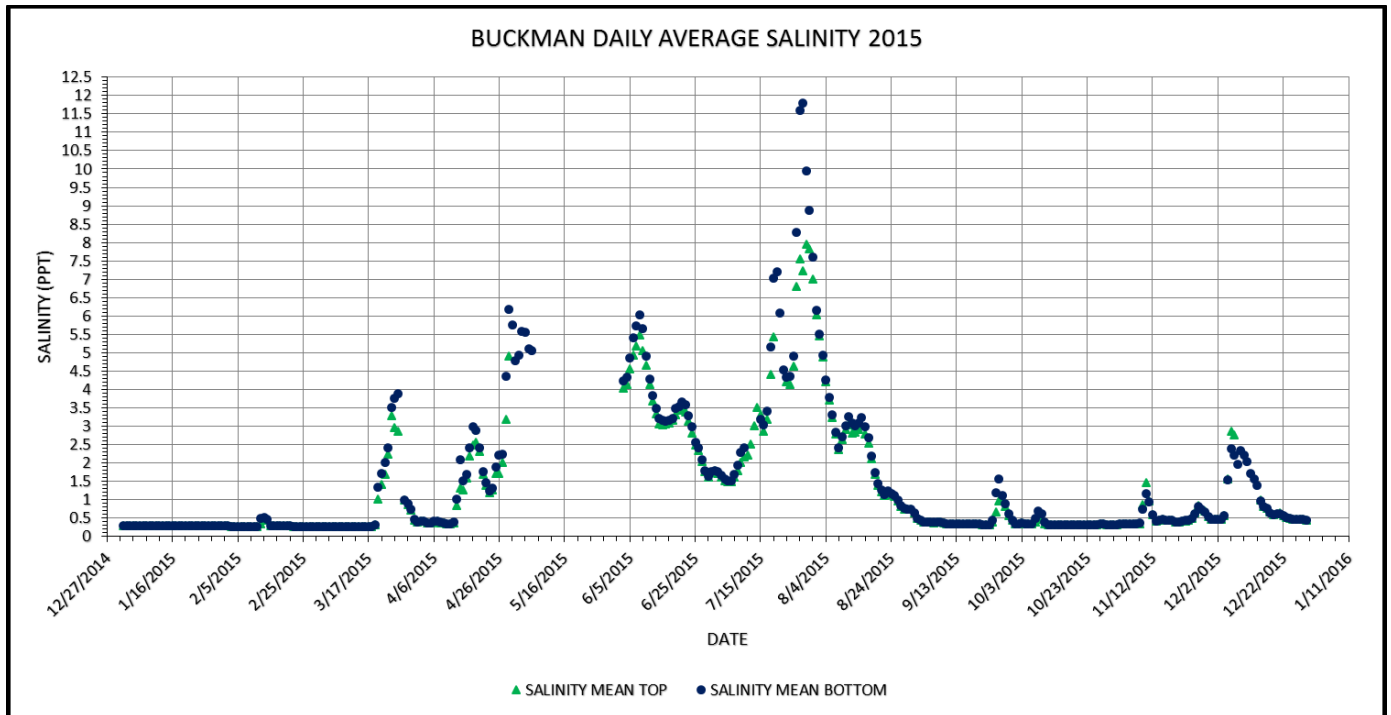


Figure 16: Daily average salinity at Buckman Bridge in 2015

Table 5: Summary statistics of daily average specific conductance at Buckman Bridge in 2015

Statistic	Bottom Conductance (µS/cm)	Top Conductance (µS/cm)
N of Cases	331	318
Minimum	590	589
Maximum	19,440	13,553
Mean	2,832	2,449
Standard Deviation	3,292	2,701
Pct1	593	593
Pct5	610	609
Pct10	627	626
Pct20	660	659
Pct25	715	704
Pct30	738	731
Pct40	837	783
Pct50	1,003	975
Pct60	1,671	1,434
Pct70	3,250	2,756
Pct75	4,150	3,355
Pct80	5,271	4,660
Pct90	7,708	6,076
Pct95	9,721	8,271
Pct99	15,289	12,525

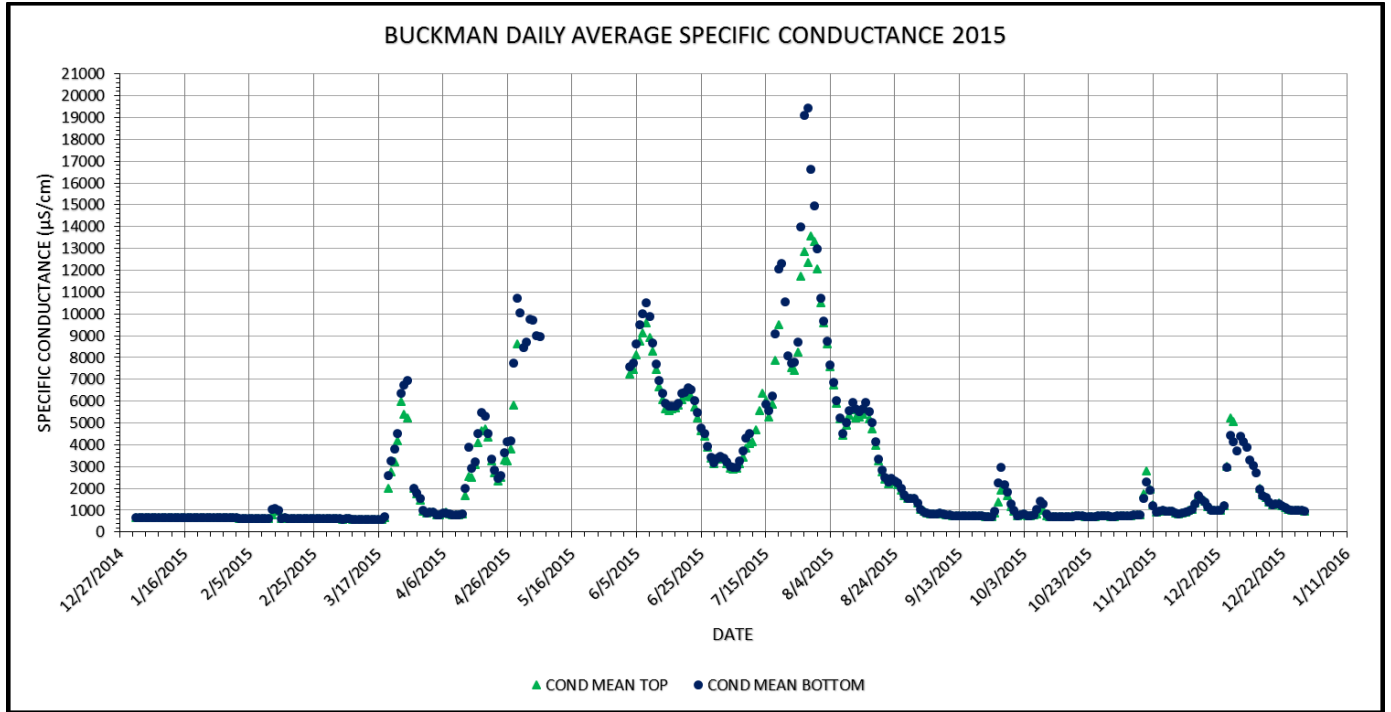


Figure 17: Daily average specific conductance at Buckman Bridge in 2015

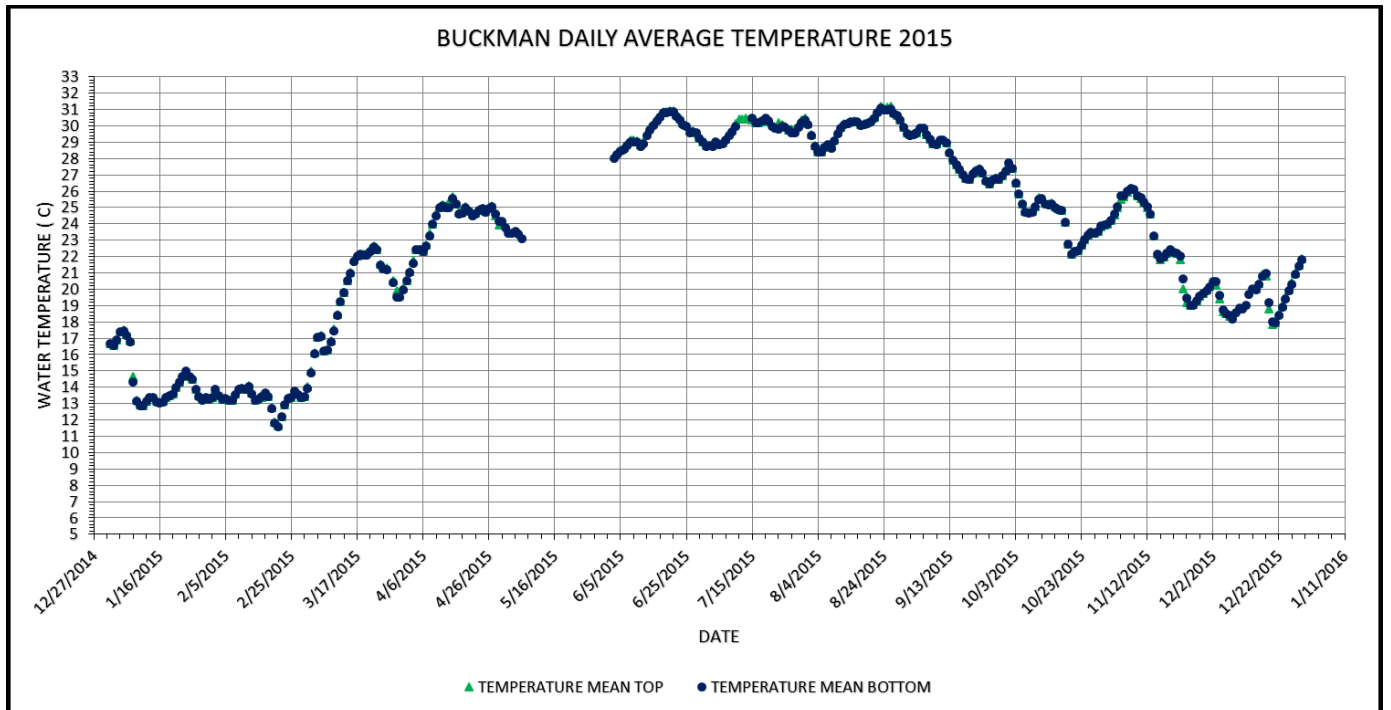


Figure 18: Daily average water temperature at Buckman Bridge in 2015

2.4 Analysis of Clapboard Creek (CBC) and Channel Marker (CM) 36 Sonde Data for 2015

2.4.1 Location of CBC and CM 36 Data Sondes

Figure 19 shows the locations of the CBC and CM 36 data sondes. A single data sonde is deployed at the CBC site, and two sondes are deployed at the CM site. Because ship traffic has "taken out" the channel marker several times over the past six years, it has been difficult to obtain a long-term record of DO conditions at that location. The current location, shown in **Figure 19**, is approximately 200 meters east of the historical location of the channel marker.

2.4.1.1 CBC DO Station Site

No data sonde records were available for 2015 at the CBC site due to equipment failure.

2.4.1.2 CM 36 DO Station Site

CM TOP SONDE

Observations were available from February 12, 2015, through April 27, 2015. Daily minimum, average, and maximum concentrations for DO, DOSAT, water temperature, salinity, and specific conductance were calculated for 75 days. The lowest daily average DO concentration was 6.26 mg/L and the lowest daily average DOSAT was 84.5%. If there were fewer than 50 observations in a day, the date was excluded from further analysis.

Figure 20, Figure 21, Figure 22, and Figure 23 illustrate daily average concentrations of DO, DOSAT, water temperature, and salinity, respectively. The average depth of measurements was 1.75 meters (m) (range 1.46 to 2.08 m). Daily average salinities ranged between 13.38 and 29.19 ppt, with an average of 22.31 ppt.

Due to the limited dataset, a fractional exposure for the year was not calculated.

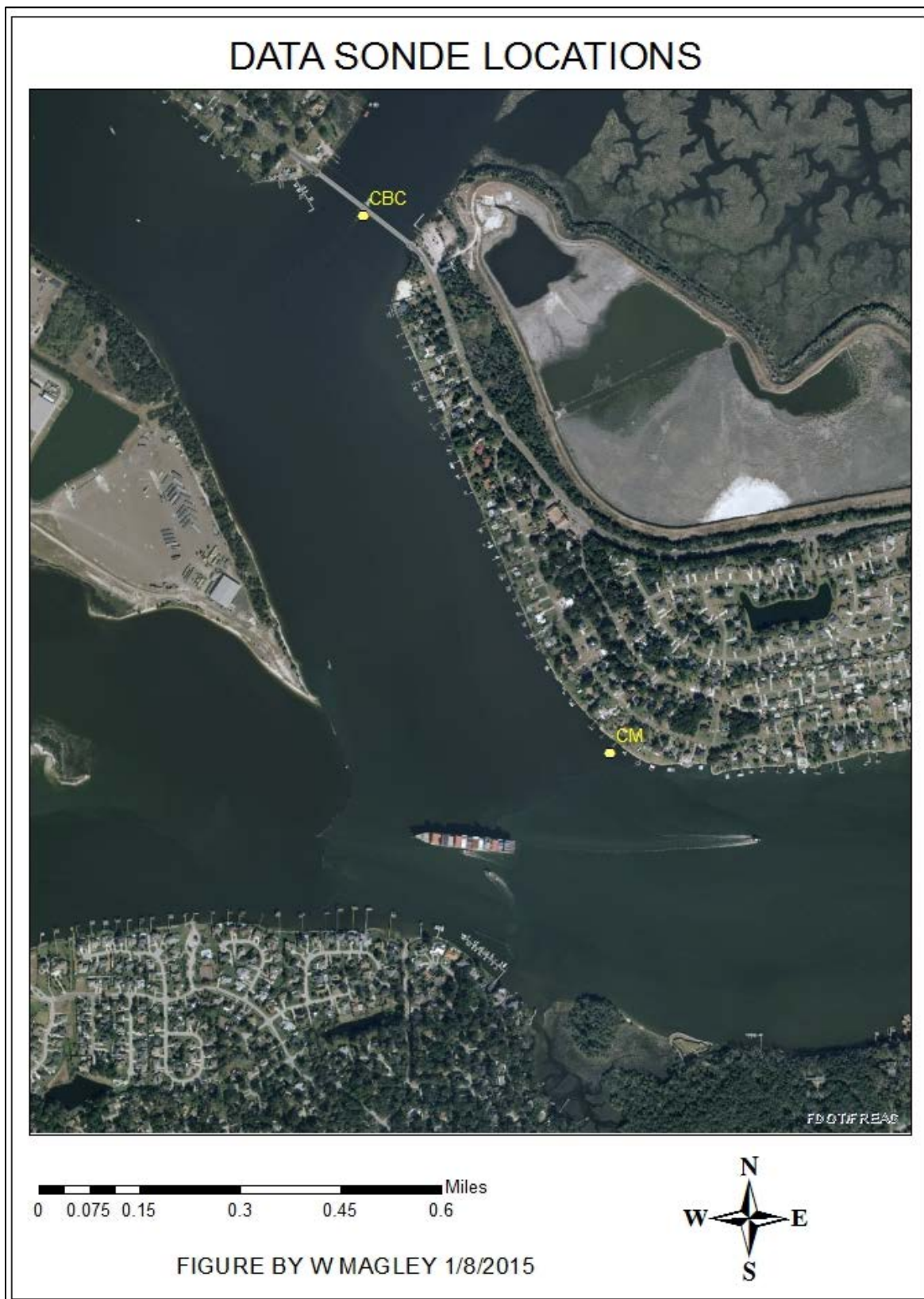


Figure 19: Location of Clapboard Creek and the CM 50 data sondes

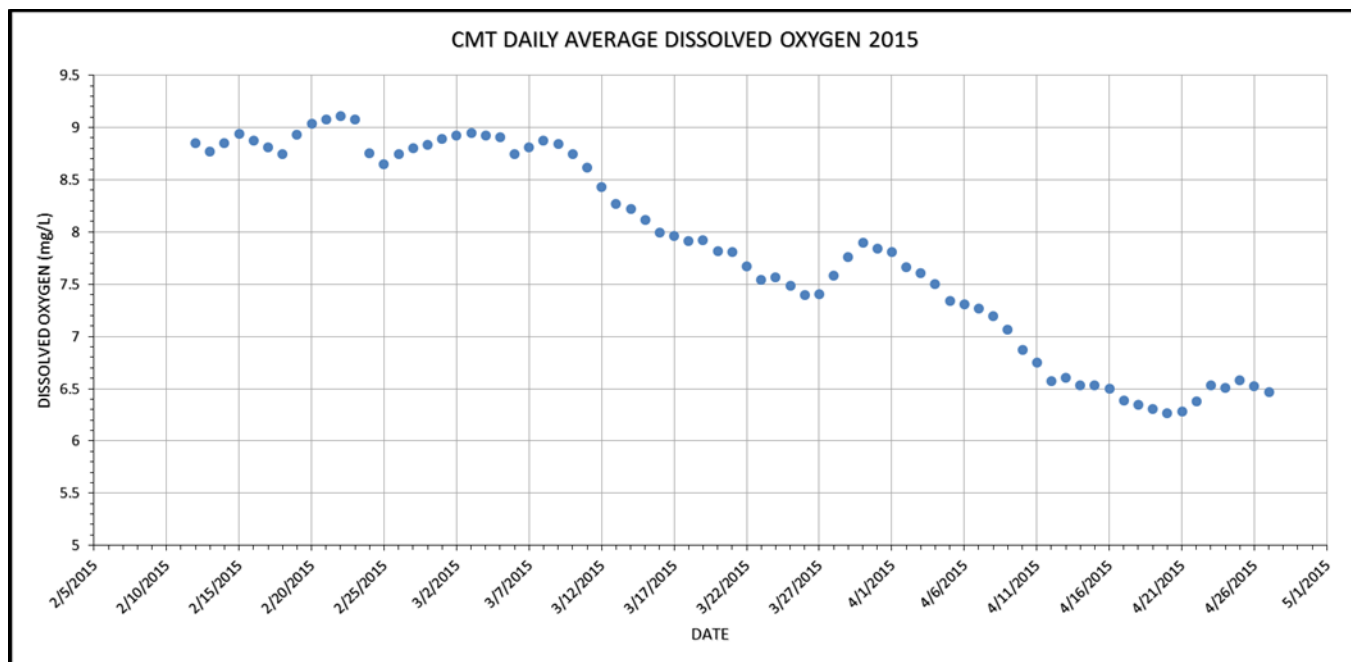


Figure 20: Daily average DO concentration at the CM top sonde site

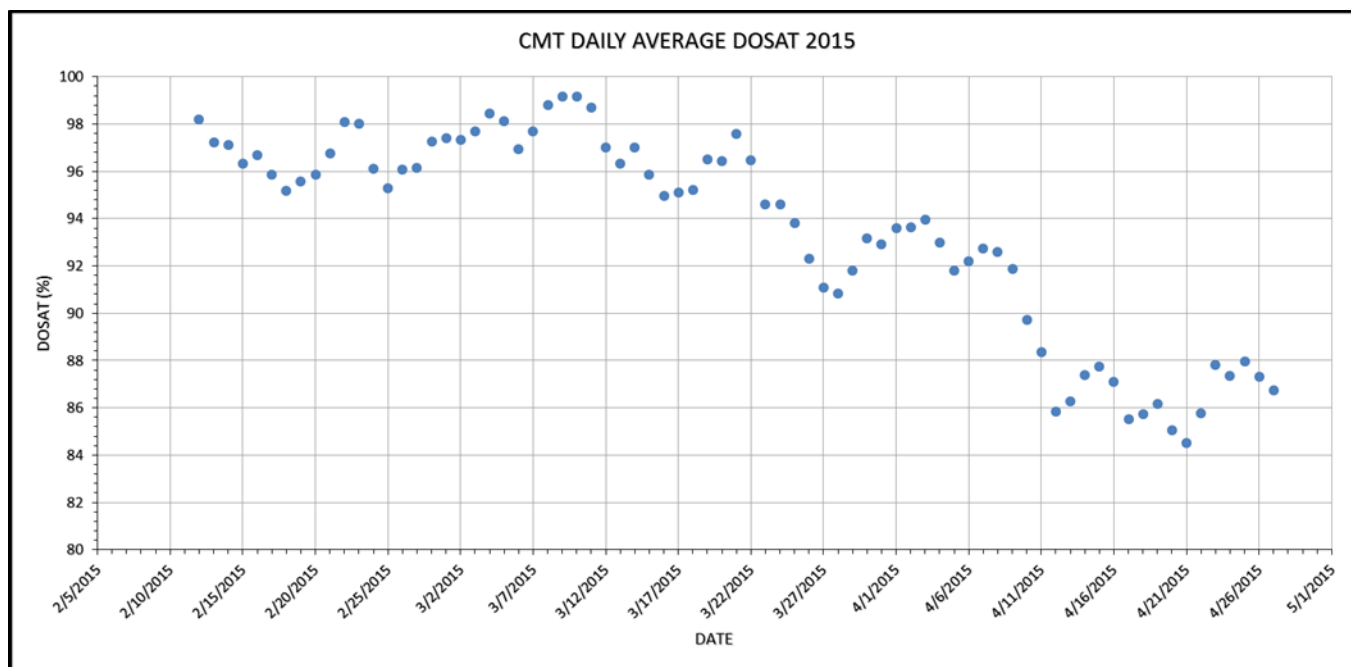


Figure 21: Daily average DOSAT at the CM top sonde site

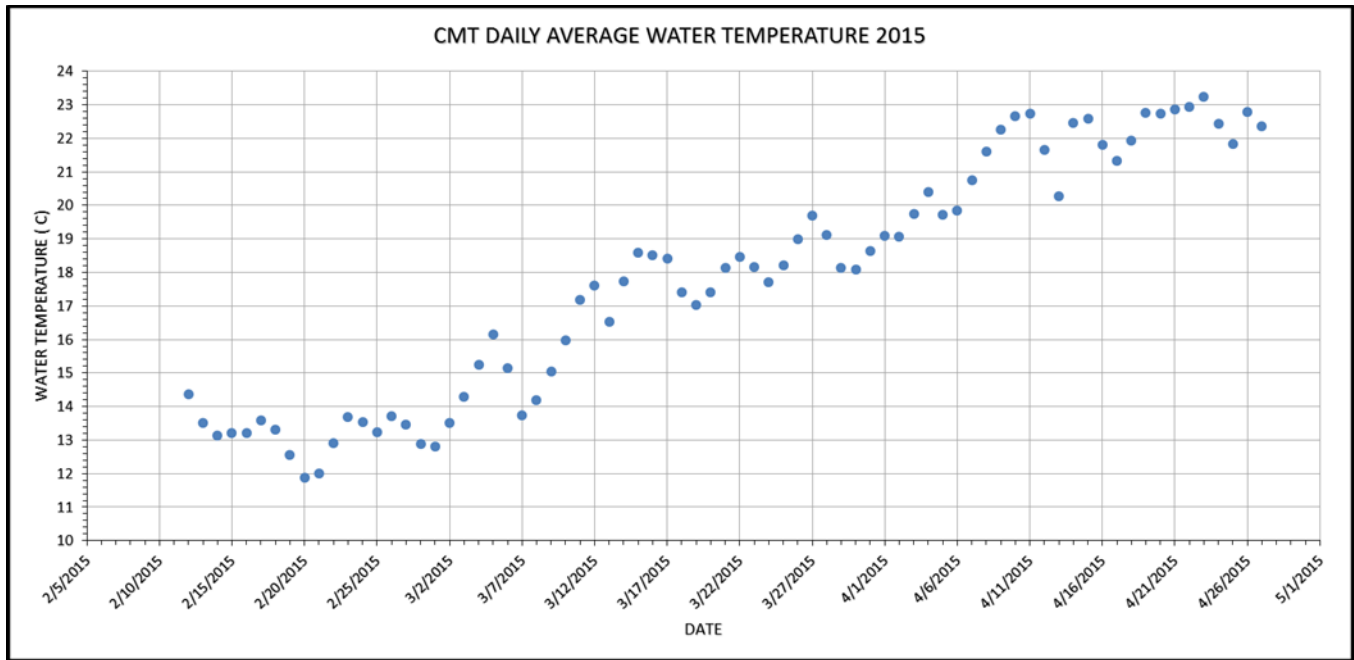


Figure 22: Daily average water temperature at the CM top sonde site

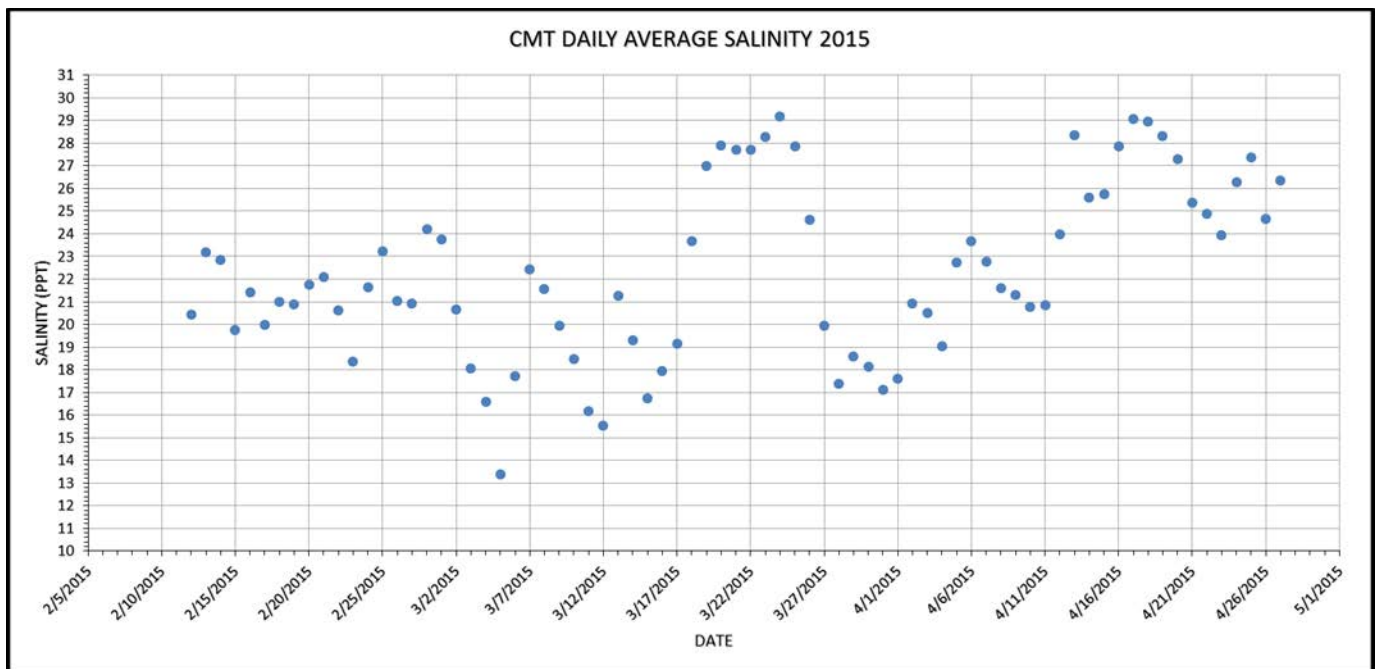


Figure 23: Daily average salinity at the CM top sonde site

CM BOTTOM SONDE

Observations were available from February 12, 2015, through April 27, 2015. Daily minimum, average, and maximum concentrations for DO, DOSAT, water temperature, salinity, and specific conductance were calculated for 75 days. The lowest daily average DO concentration was 6.43 mg/L and the lowest

daily average DOSAT was 86.5%. If there were fewer than 50 observations in a day, the date was excluded from further analysis.

Figure 24, Figure 25, Figure 26, and Figure 27 illustrate daily average concentrations of DO, DOSAT, water temperature, and salinity. The average depth of measurements was 2.34 m (range 2.14 to 2.72 m). Daily average salinities ranged between 13.76 and 29.179 ppt, with an average of 22.54 ppt.

Due to the limited dataset, a fractional exposure for the year was not calculated.

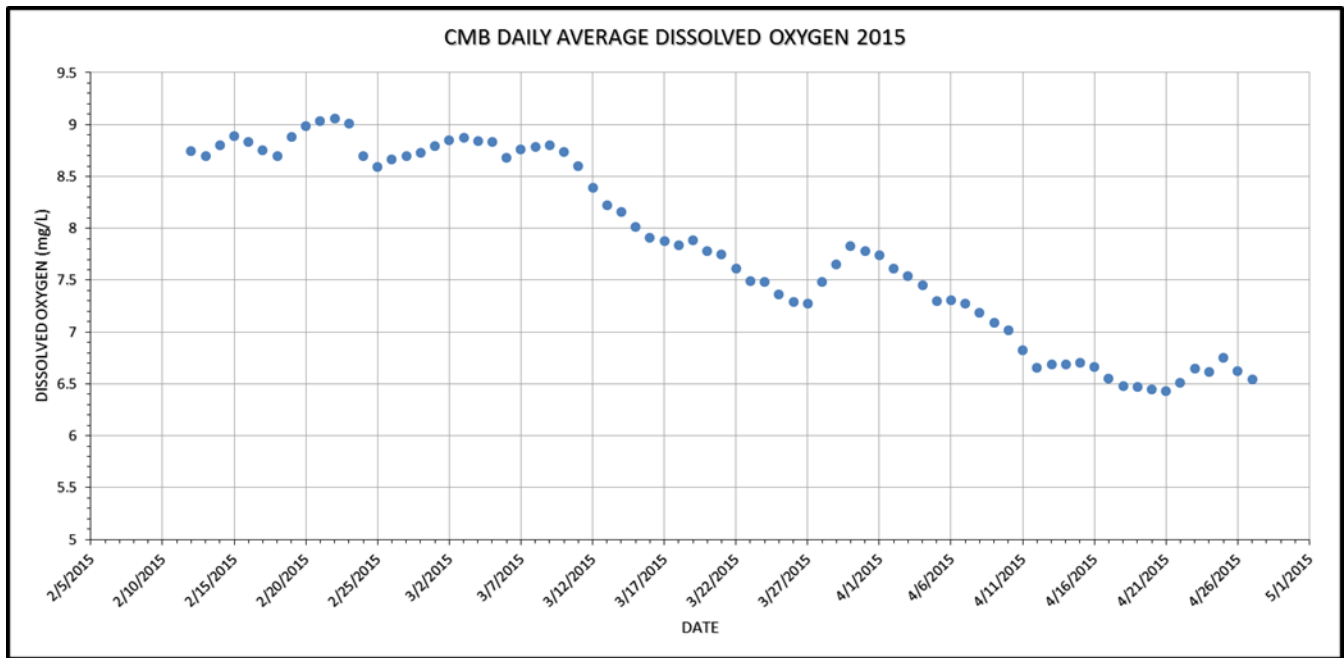


Figure 24: Daily average DO concentration at the CM bottom sonde site

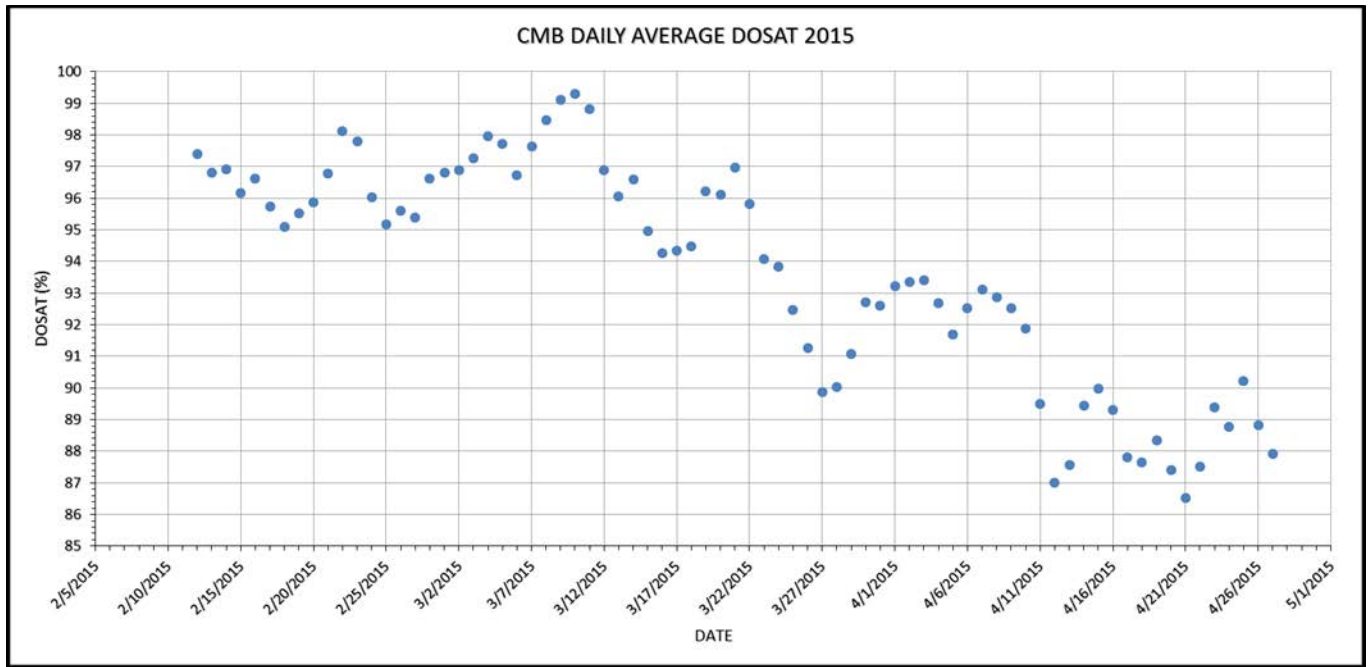


Figure 25: Daily average DOSAT at the CM bottom sonde site

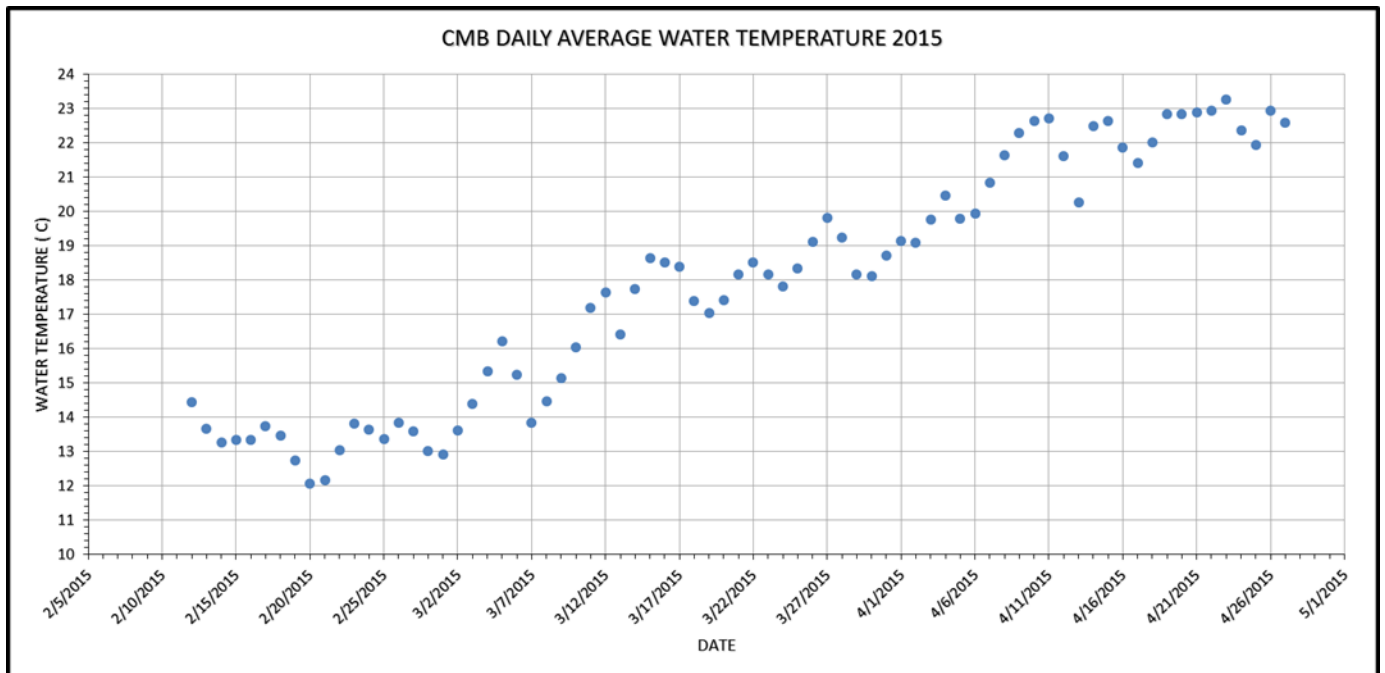


Figure 26: Daily average water temperature at the CM bottom sonde site

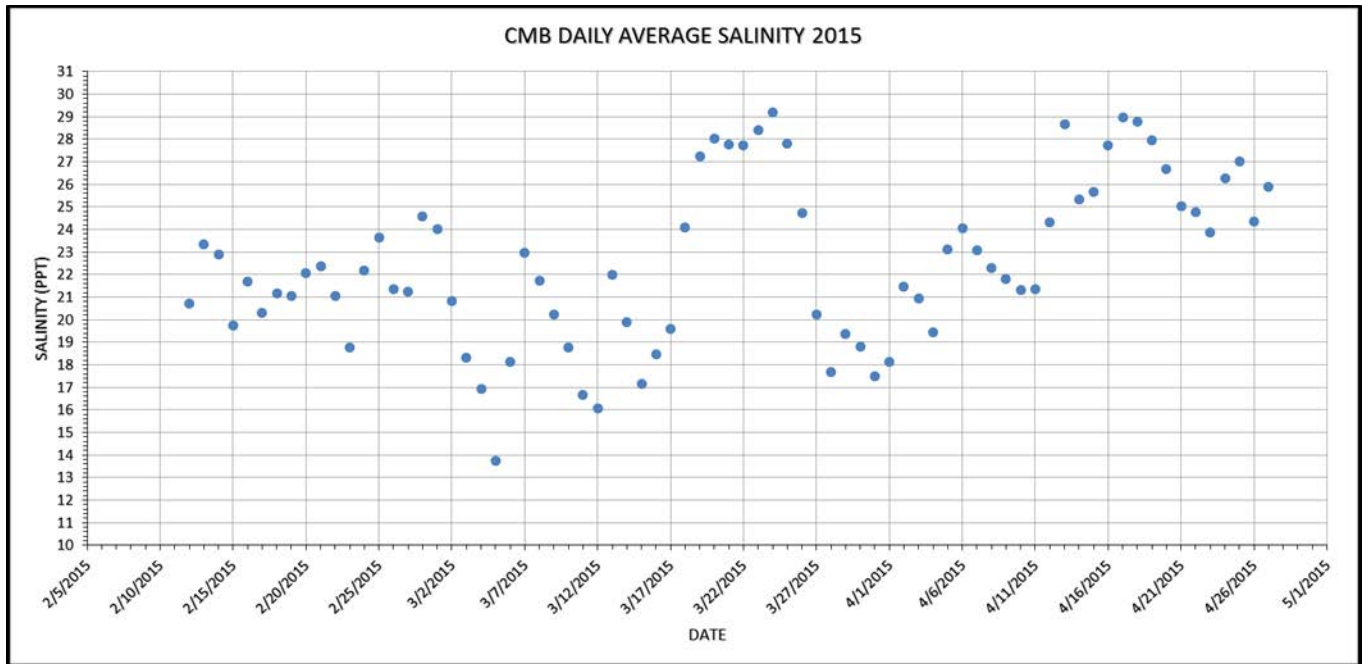


Figure 27: Daily average salinity at the CM bottom sonde site

2.4.2 Summary of Data Sonde Deployments at CBC and CM 36, 2010–15

As described in previous reports and meetings, the operation and maintenance of data sondes at these locations has been problematic. Due to ship traffic that has "taken out" CM 36 several times over the past six years, it has been difficult to obtain a long-term record of DO conditions at that location and the sonde was relocated to the current position shown in **Figure 19**. These stations have had frequent issues with boat strikes that disable and/or causes permanent loss of the equipment. **Table 6**, **Table 7**, and **Table 8** summarize the extent of records analyzed over the 2009 through 2015 period at the CBC and CM 36 locations for evaluation of the total fractional exposure.

Table 6: CBC data sonde records, 2010–15

N/A = Not applicable

Year	Deployment Period	# Days Analyzed	Total Fractional Exposure	Deployment Issues
2009	7/21 – 10/04	49	N/A	
2010	7/15 – 12/31	50	N/A	
2011	1/1 – 11/20	124	1.31	
2012	1/9 – 11/9	264	0.20	
2013	No Data			Equipment failure
2014	9/2 – 12/1	103	0.04	
2015	No Data			Equipment failure

Table 7: CM 36 top data sonde records, 2010–15

N/A = Not applicable

Year	Deployment Period	# Days Analyzed	Total Fractional Exposure	Deployment Issues
2009	7/21 – 10/04	64	N/A	Equipment failure
2010	8/12 – 11/29	105	0.09	
2011	1/1 – 11/20	321	0.00	
2012	1/5 – 2/26	53	N/A	Channel marker taken out by barge
2013	No Data			Channel marker taken out by barge
2014	3/18 – 12/1	156	0.07	
2015	2/12 – 4/27	75	N/A	Equipment failure

Table 8: CM 36 bottom data sonde records, 2010–15

N/A = Not applicable

Year	Deployment Period	# Days Analyzed	Total Fractional Exposure	Deployment Issues
2009	7/21 – 10/04	76	N/A	Equipment failure
2010	8/12 – 12/31	26	N/A	
2011	1/1 – 11/20	324	0.44	
2012	1/5 – 3/7	63	N/A	Channel marker taken out by barge
2013	No Data			Channel marker taken out by barge
2014	9/2 – 12/1	56	N/A	
2015	2/12 – 4/27	75	N/A	Equipment failure

Section 3: ACCOMPLISHMENTS DURING THE REPORTING PERIOD

During the reporting period, Jacksonville completed several stormwater treatment projects and executed two water quality credit trading agreements that provide a total of 40.91 metric tons per year TN reduction. The U.S. Naval Air Station (NAS) Jacksonville completed the second phase of its reuse project that redirects wastewater discharges away from the river. St. Johns County completed Phase I of the Masters Tract Regional Stormwater Treatment (RST) system and substantially completed improvements to the Deep Creek West RST. Putnam County completed the Hiawatha Wastewater Treatment Facility (WWTF) phase-out and brought the new East Palatka WWTF on-line. In addition, the Florida Department of Agriculture and Consumer Services (FDACS) continued to enroll producers in BMPs in the freshwater reach. **Section 3.1** provides details of the major accomplishments over the past year, and **Appendix A** contains the individual project tables.

3.1 Accomplishments by Source Type

3.1.1 WWTFs

3.1.1.1 Freshwater Reach

WWTF PROGRESS TOWARDS THE FRESHWATER TMDLS

The WWTFs in the freshwater reach (City of Green Cove Springs, City of Palatka, Georgia-Pacific, and Seminole Electric) exceed (more than 100% of the TN and TP required reductions) their portion of the TP and TN TMDLs, as shown in **Figure 28** and **Figure 29**. These facilities exceed the TP required reductions by 6,505 kg/yr and the TN required reductions by 41,640 kg/yr. The first bar in the figures shows the starting load for the freshwater WWTFs, as calculated in the BMAP. The second bar shows the estimated 2015 load based on all completed freshwater WWTF projects. The third bar indicates the total allocation allowed for the WWTFs in the freshwater reach of the river.

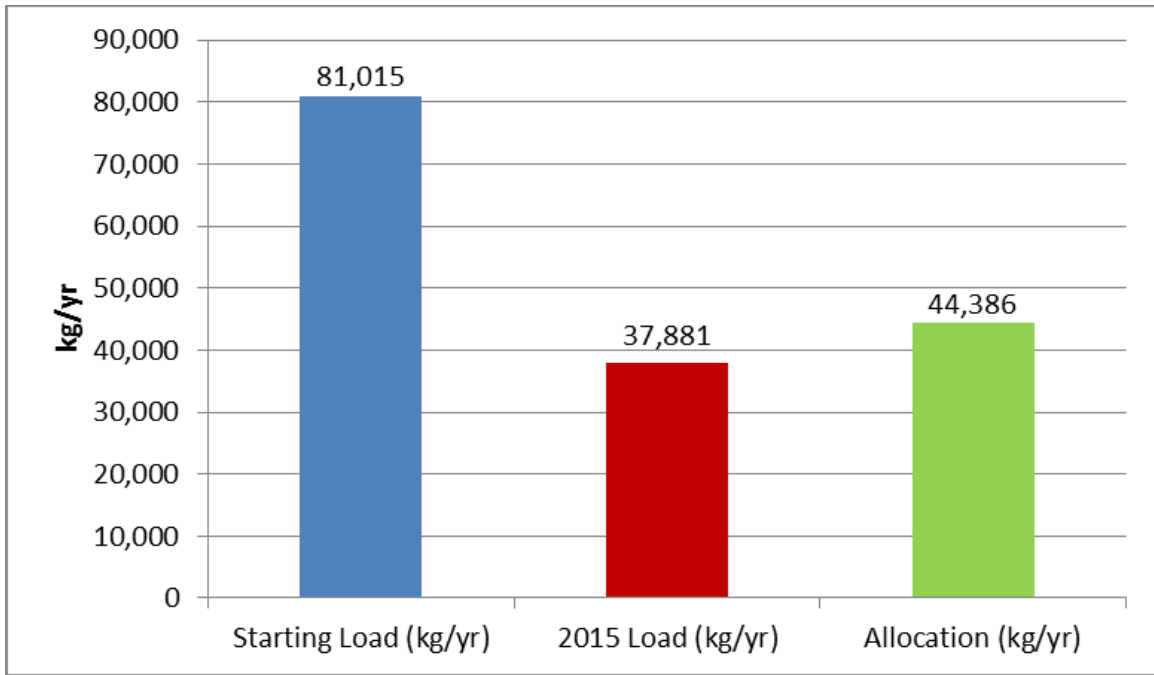


Figure 28: WWTF progress towards the TP freshwater TMDL

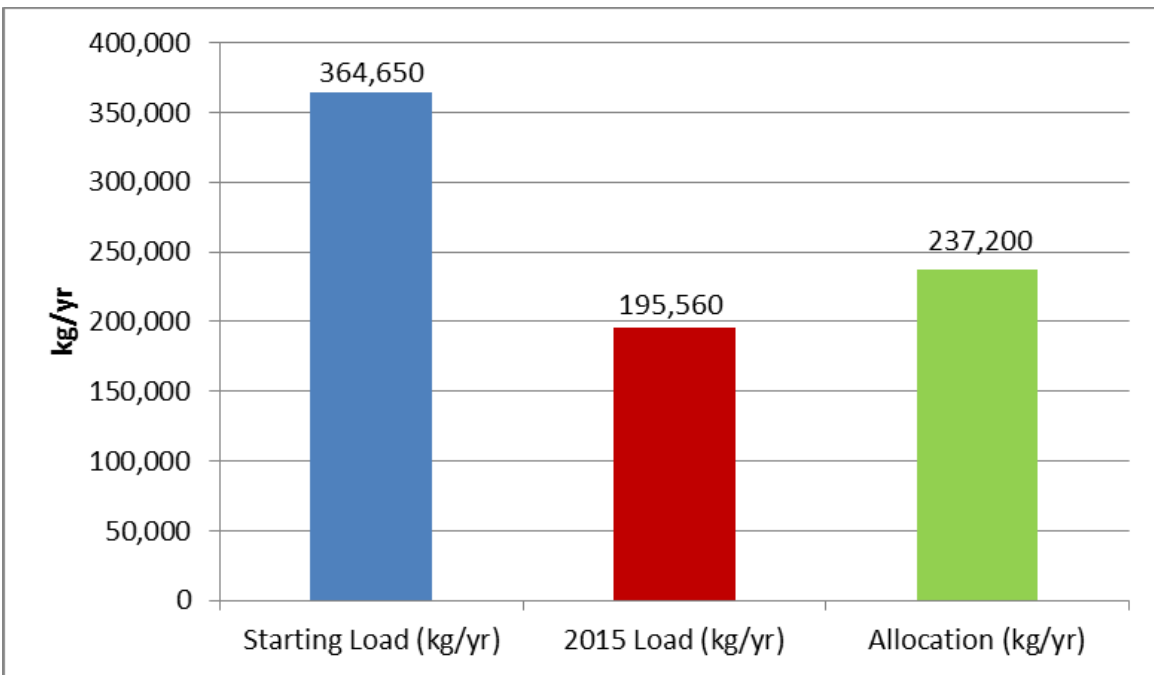


Figure 29: WWTF progress towards the TN freshwater TMDL

3.1.1.2 Marine Reach

JEA

JEA's obligations under the terms of the BMAP were fulfilled in the 2013 calendar year. However, JEA continues to optimize the operations of its wastewater treatment plants and expand its reclaimed water system. DEP recognized JEA's ongoing reuse expansion by awarding the 2015 David W. York Award for JEA's south grid reuse system. JEA added 1,700 new south grid reuse customers in 2015, the utility's area of greatest growth.

U.S. NAS JACKSONVILLE

NAS Jacksonville completed the Wastewater Reuse Construction Phase II project on December 1, 2015. The project expands the wastewater reuse system at NAS Jacksonville by constructing an 8-inch-diameter wastewater reuse pipeline approximately 10,000 feet to further land-apply treated wastewater treatment plant (WWTP) effluent to a 60-acre sprayfield area. This area of the installation is known as the "Antenna Farm."

WWTF PROGRESS TOWARDS THE MARINE REACH TMDL

Section 3.1.1.1 describes all efforts in the past year related to project implementation in the freshwater reach, including design and construction. These important milestones lead to project completion and actual load reductions. The WWTFs in the freshwater reach have already achieved their reductions.

Table 9 lists the WWTF projects in the marine reach completed during the last year and their associated load reductions.

Table 9: WWTF projects completed in the marine reach for TN in 2015

Entity	Project Number	Description	TN Project Reduction (kg/yr)
U.S. Navy Aggregate	USN-2	NAS Jax WWTF FL0000957	2,790
Total			2,790

3.1.2 MS4s

3.1.2.1 Freshwater Reach

CLAY COUNTY

The St. Johns River Riverkeeper (Riverkeeper) helped Ridgeview High School's Leadership Academy implement a rain barrel program in Clay County schools. Through the Leadership Academy's partnership with Chick-fil-A, and the added help from Coca Cola to provide the barrels, students

painted, assembled, and distributed 300 rain barrels to all Clay County schools. Chick-fil-A recognized the students' efforts early in the project and hired a film crew to follow them over a 2-day event. Students assembled barrels on the first day and toured Black Creek with the Riverkeeper on the second day. The filmed material was included in the show "Small Town Big Deal" that aired on the cable network RFD TV in June 2015. Following this, additional spotlight moments occurred during nationally televised college football games sponsored by Chick-fil-A. To continue the excitement and the students' efforts, Chick-fil-A will provide the Leadership Academy with \$12,000 over the next 3 years to implement more projects.

MS4 PROGRESS TOWARDS MEETING THE FRESHWATER TMDLS

Figure 30 and **Figure 31** show progress towards meeting the MS4 portion of the freshwater TP and TN TMDLs, respectively. Through completed projects identified in the BMAP and 2009 and 2010 progress reports, as well as the ongoing efforts listed above, the MS4s in the freshwater reach have met 100% of the TP and TN reductions required under the BMAP.

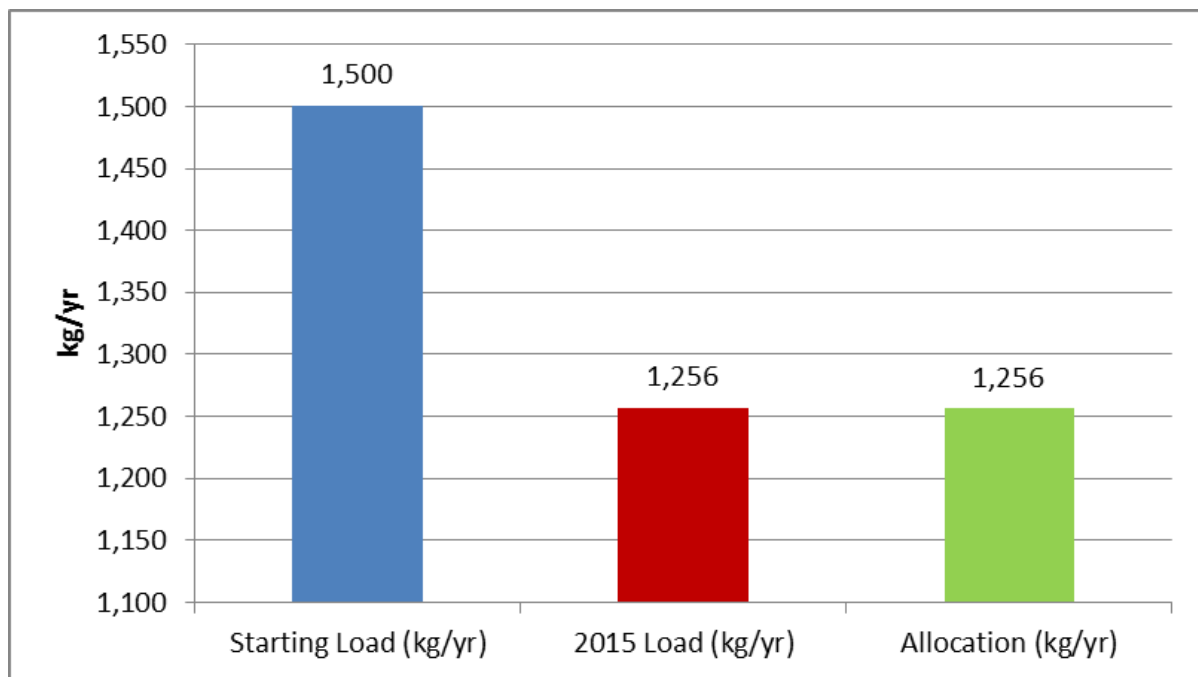


Figure 30: MS4 progress towards the TP freshwater TMDL

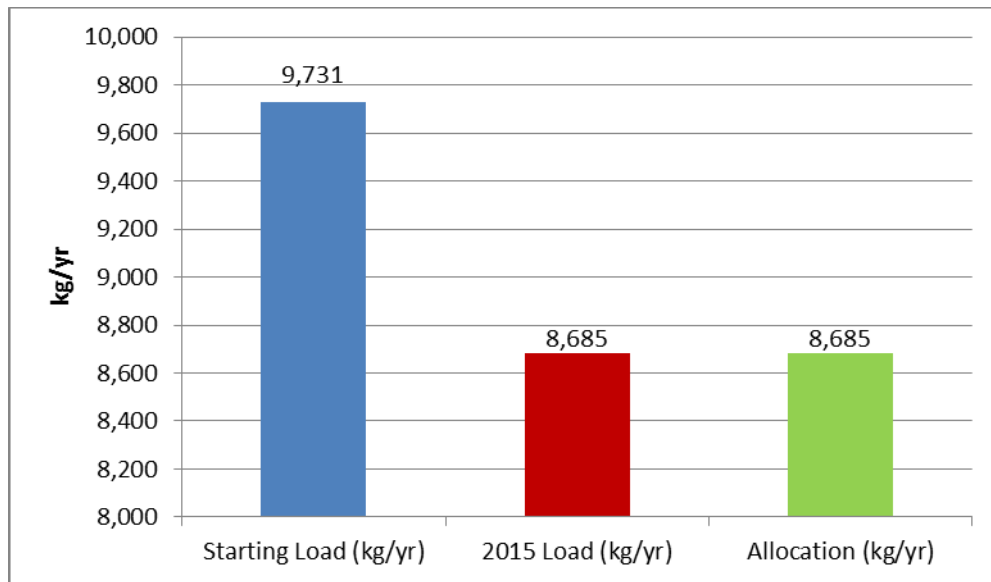


Figure 31: MS4 progress towards the TN freshwater TMDL

3.1.2.2 Marine Reach

JACKSONVILLE

Jacksonville outlined a toolbox approach in the BMAP to reduce TN discharged to the LSJR. Completed stormwater projects include the following:

- **Avenue B and Zinnia Avenue Drainage Improvements** — Install a box culvert to address erosion and safety issues.
- **Country Creek** — Remove sedimentation at three roadway bridge and culvert crossings and install rip rap to reduce erosion at three locations.
- **Hamilton Jersey Drainage Improvements** — Install two second-generation baffle boxes as part of a neighborhood drainage collection system with raised inlets and perforated pipe.
- **Leonid Road Drainage Basin Reconstruction** — Redesign and construct a pond on Leonid Road.

The Mandarin Area Drainage project is ongoing and will reduce flooding in the area by replacing several roadway culvert crossings to improve the outfall.

CLAY COUNTY

Clay County constructed a 0.60-acre pond to alleviate flooding and treat stormwater runoff in the Bear Run subdivision. The county also paved two dirt roads for a total of two miles. In addition, the established water quality trading mechanism with the Clay County Utility Authority (CCUA) continued in 2015 (an interlocal agreement was executed in September 2009).

ST. JOHNS COUNTY

St. Johns County completed construction on two large RST projects. Completed in August 2015, the first phase of the Masters Tract RST consisted of a pump station, pond, and outfall. The second phase, comprising treatment wetlands and Canal 4 improvements, is currently under construction and is scheduled for completion by August 2016. The county completed improvements to the Deep Creek West RST, which is currently operational.

The county continued collaborating with the SJRWMD to identify regional projects, evaluate their effectiveness, and assist with grant funding. These regional projects help the county meet its Algal Initiative load reduction requirements.

MS4 PROGRESS TOWARDS MEETING THE MARINE TMDLS

Figure 32 shows the progress meeting the MS4 portion of the marine TN TMDL. The first bar in the figure shows the starting load for the marine MS4s from the BMAP. The second bar shows the estimated 2015 load based on all completed marine MS4 projects (from the BMAP; 2009, 2010, 2011, 2012, 2013, and 2014 progress reports; and those listed above). The third bar indicates the total allocation allowed for the MS4s in the marine reach of the river. Based on completed projects, 45% of the TN required reductions have been achieved.

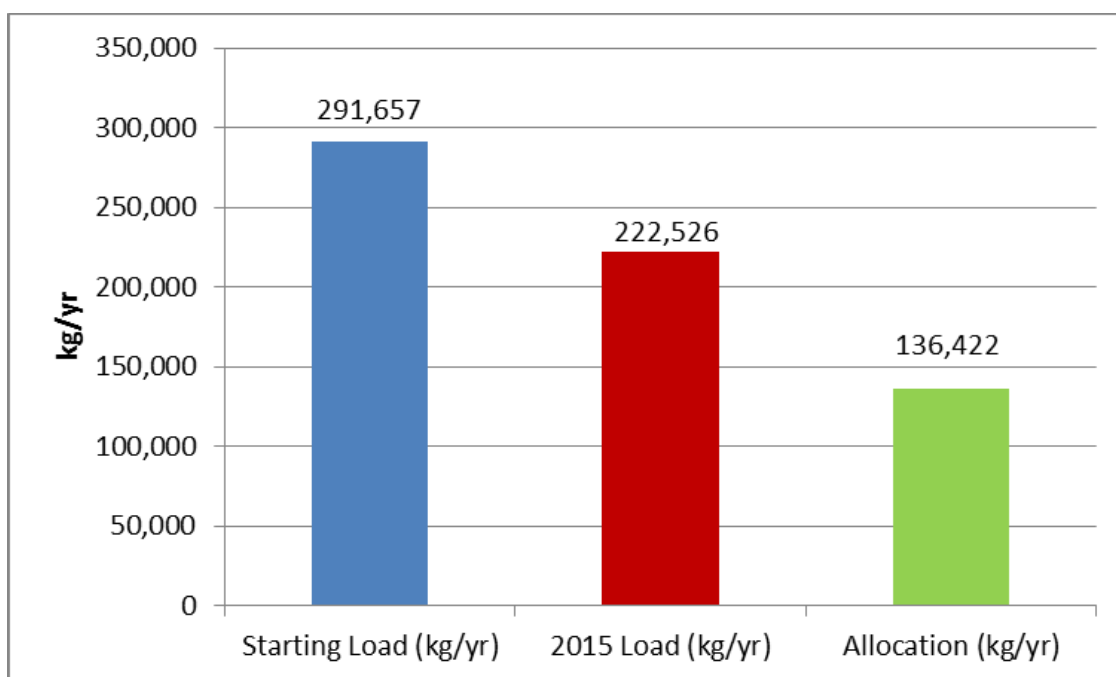


Figure 32: MS4 progress towards the TN marine TMDL

3.1.2.3 Project Implementation Status

The section above describes all activities under way during the past year, including efforts that are not yet complete or are ongoing, such as public education. **Table 10** lists the MS4 projects completed for the marine reach during the last year and their associated load reductions. The MS4s in the freshwater reach met the required TN and TP reductions; therefore, no additional projects were completed during the reporting period.

Table 10: MS4 projects completed in the marine reach in 2015

Entity	Project Number	Description	TN Project Reduction (kg/yr)
St. Johns County	SJC-17	Algal Initiative – Masters Tract RST Facility*	1,868
St. Johns County	SJC-29	Deep Creek West RST Improvements**	2,052
Total			4,920

3.1.3 Urban Stormwater

3.1.3.1 Freshwater Reach

CLAY COUNTY

Clay County continued the established water quality trading mechanism with the CCUA (an interlocal agreement was executed in September 2009 [Project CC-6]).

PUTNAM COUNTY

Putnam County continued its public education and outreach efforts (Project PUT-8). The East Putnam County Regional WWTF went online in May 2015. Putnam County completed the Hiawatha WWTF trade.

ST. JOHNS COUNTY

St. Johns County made its annual payment of \$30,000 to the Town of Hastings for the 198.2 kg/yr TP reduction per the 2009 agreement. The county also continued its education and outreach efforts (Project SJC-3).

NON-MS4 PROGRESS TOWARDS MEETING THE FRESHWATER TMDLS

Figure 33 and **Figure 34** show progress meeting the non-MS4 portion of the freshwater TP and TN TMDLs. The first bar in the figures shows the starting load for the freshwater non-MS4s from the BMAP. The second bar shows the estimated 2015 load based on all completed freshwater non-MS4 projects (from the BMAP; 2009, 2010, 2011, 2012, 2013, and 2014 progress reports; and those listed above). The third bar indicates the total allocation allowed for the non-MS4s in the freshwater reach of the river. Based on projects completed to date, the non-MS4s in the freshwater reach have achieved 75% of the TP reductions and 88% of the TN reductions.

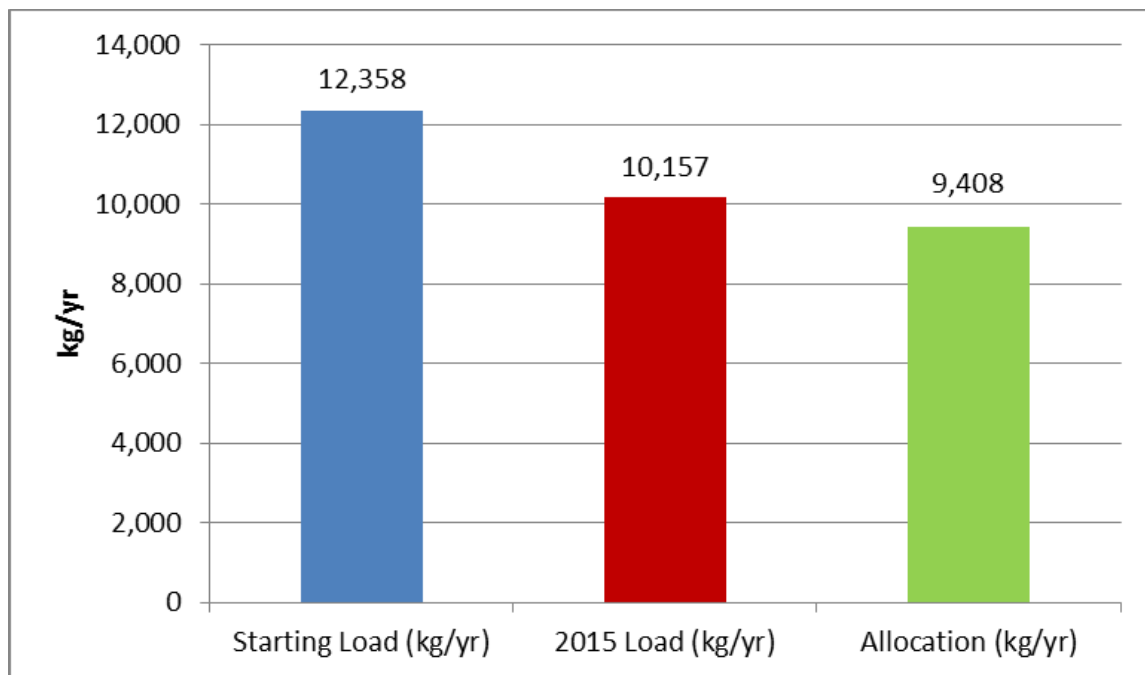


Figure 33: Non-MS4 progress towards the TP freshwater TMDL

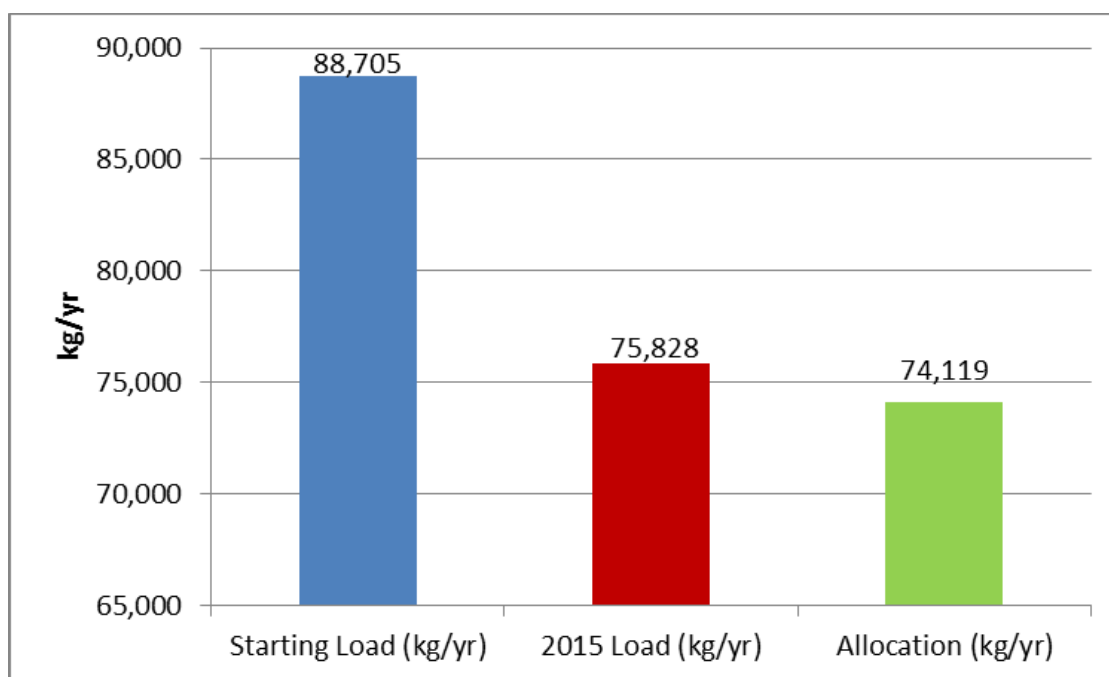


Figure 34: Non-MS4 progress towards the TN freshwater TMDL

3.1.3.2 Project Implementation Status

The section above describes all activities undertaken during the past year, including efforts that are not yet complete or are ongoing, such as public education. **Table 11** lists the non-MS4 projects for the freshwater reach completed during the last year and their associated load reductions.

Table 11: Non-MS4 projects completed in the freshwater reach in 2015

Entity	Project Number	Description	TP Project Reduction (kg/yr)	TN Project Reduction (kg/yr)
Putnam County	PUT-2	Hiawatha WWTF trade	49.8	150
Total			49.8	150

3.1.3.3 Marine Reach

NON-MS4 PROGRESS TOWARDS MEETING THE MARINE TMDL

Figure 35 shows progress towards meeting the non-MS4 portion of the marine TN TMDL. The first bar in the figure shows the starting load for the marine non-MS4s from the BMAP. The second bar shows the estimated 2015 load based on all completed marine non-MS4 projects (from the BMAP; 2009, 2010, 2011, 2012, 2013 and 2014 progress reports; and those listed above). The third bar indicates the total allocation allowed for the non-MS4s in the marine reach of the river. Based on projects completed to date, the non-MS4s in the marine reach have achieved 39% of the TN reductions.

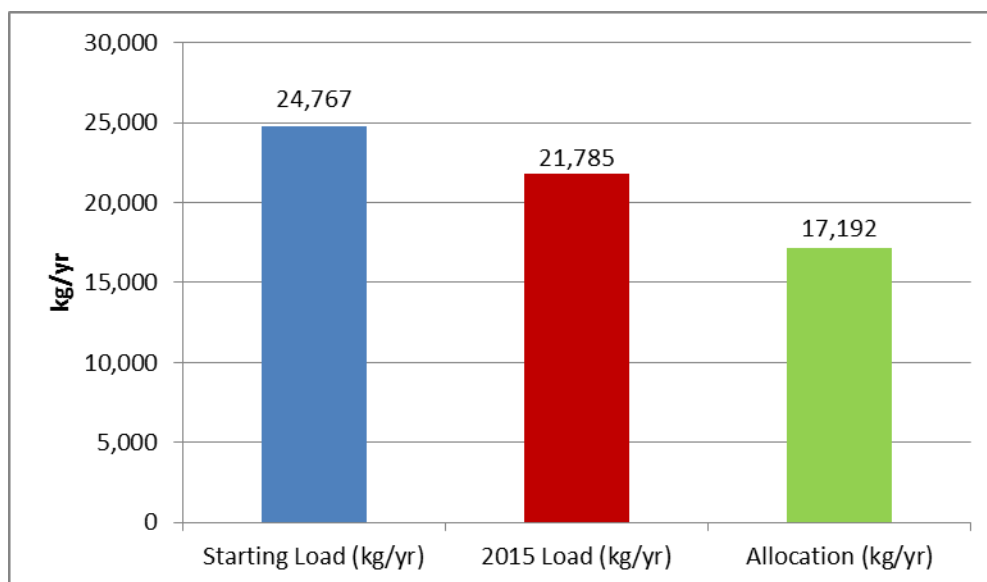


Figure 35: Non-MS4 progress towards the TN marine TMDL

3.1.4 Agriculture

3.1.4.1 BMP Implementation Status

In 2015, FDACS Office of Agricultural Water Policy (OAWP) staff signed up growers under the vegetable and agronomic crop, citrus, cow/calf, and nursery BMP manuals, enrolling an additional 16,790 acres. Because of limited staff, the enrollment goals for FDACS outreach have not yet been met, but progress is continuing. In September 2013, FDACS undertook a significant effort to help producers comply with the statutory requirement for agricultural operations in BMAP areas to implement BMPs or monitor their water quality. **Section 3.1.4.3** further discusses the outreach effort and its results.

Table 12 lists the cumulative enrollment numbers, and **Figure 36** shows the locations of the enrolled parcels. To date, no producers have opted to monitor water quality instead of implementing BMPs. The enrollment of agricultural acreage has not reached the 100% target contained in the BMAP. As shown in **Table 12**, enrollment in the LSJR BMAP area as of September 30, 2015, is 101,345 acres, or 91% of the target enrollment.

Of the remaining 23,143 acres of unenrolled land, FDACS has determined through compliance assistance efforts that 8,438 acres classified as agricultural land uses are not commercial agriculture and are therefore ineligible for enrollment in the BMP Program. In the Tri-County Agricultural Area (TCAA), an area of specific concern, the enrollment is 53,525.2 acres, or 79% of the TCAA agricultural

acreage. However, according to FDACS, the actual enrollment in the TCAA is higher than reported because of recent changes in leased land that have yet to be reflected in the notices of intent (NOIs). However, FDACS expects the change in acreage to be reflected through the Implementation Assurance Program where staff conduct site visits to review submitted NOIs. **Table 13** lists the load reductions from BMP implementation and SJRWMD RST facilities.

Table 12: Agricultural acres enrolled in BMPs as of September 30, 2015

N/A = Not applicable

¹ Due to improved mapping, reported acres are all within the LSJR Basin; previous reports were based on county boundaries.

² Enrollment numbers will depend on the ability of field staff to identify and locate producers, changes in land uses, and actual number of acres in production on an operation. Even with 100% enrollment, the acres will not match the 2004 land use numbers.

2004 SJRWMD Land Use	2004 Acres	FDACS-Adjusted Acres for Enrollment	Related FDACS BMP Programs	Acreage Enrolled ¹	Related NOIs	Remaining Acreage ²
Pasture	55,457	55,547	Cow/Calf, Forage (Hay)	68,754	76	N/A
Row/Field/ Mixed Crops	42,546	42,546	Vegetable/Agronomic Crops	27,294	58	15,252
Fallow Cropland (out of production)	1,446	N/A	N/A	N/A	N/A	N/A
Horse Farm	3,145	3,145	Equine	259	9	2,886
Citrus	375	375	Ridge Citrus, Statewide Citrus	139	5	236
Abandoned Citrus	30	N/A	No enrollment needed	N/A	N/A	N/A
Tree Crops	298	298	Specialty Fruit and Nut	75	5	223
Nurseries and Vineyards	56	56	Specialty Fruit and Nut, Statewide Nurseries	0	N/A	56
Tree Nurseries, Ornamentals, Shade Ferns, Hammock Ferns	2,869	2,869	Statewide Nurseries, Container Nursery	1,864	29	1,005
Sod Farms	4,678	4,678	Statewide Sod	2,960	7	1,718
Specialty Farms	26	26	Conservation Plan Rule	0	N/A	26
Dairies	1,070	1,070	Future Dairy Manual	0	N/A	1,070
Cattle Feeding	475	475	Conservation Plan Rule	0	N/A	475
Poultry Feeding	196	196	Conservation Plan Rule	0	N/A	196
Other Open Lands – Rural	854	N/A	No enrollment needed	N/A	N/A	N/A
Totals	113,521	111,281		101,345	189	23,143

Table 13: Agricultural TN and TP load reduction allocation and estimated reductions in loads from BMPs and RSTs

¹ Estimated reductions are based on BMPs for all enrolled commodities. FDACS and DEP will identify areas that are no longer in agricultural production, and reduction credits will be assigned.

² RSTs were constructed by the SJRWMD. The reduction is associated with the Deep Creek West RST and Dog Branch RST minus credits for operations and maintenance (O&M) given to St. Johns County and Putnam County, respectively. Both RSTs were off-line in 2015; therefore, no TN and TP reductions were achieved.

³ DEP, FDACS, and the SJRWMD will determine how to calculate reductions associated with BMPs in the marine portion of the LSJR Basin.

Reduction Category	TN Freshwater (kg/yr)	TP Freshwater (kg/yr)	TN Marine (kg/yr)³
Load Reduction Allocation	116,364	12,481	8,630
Estimated Load Reductions via BMPs¹	105,701	5,024	N/A
Estimated Load Reduction via completed RSTs²	0	0	N/A
Remaining Load Reductions Needed	10,663	7,457	8,630

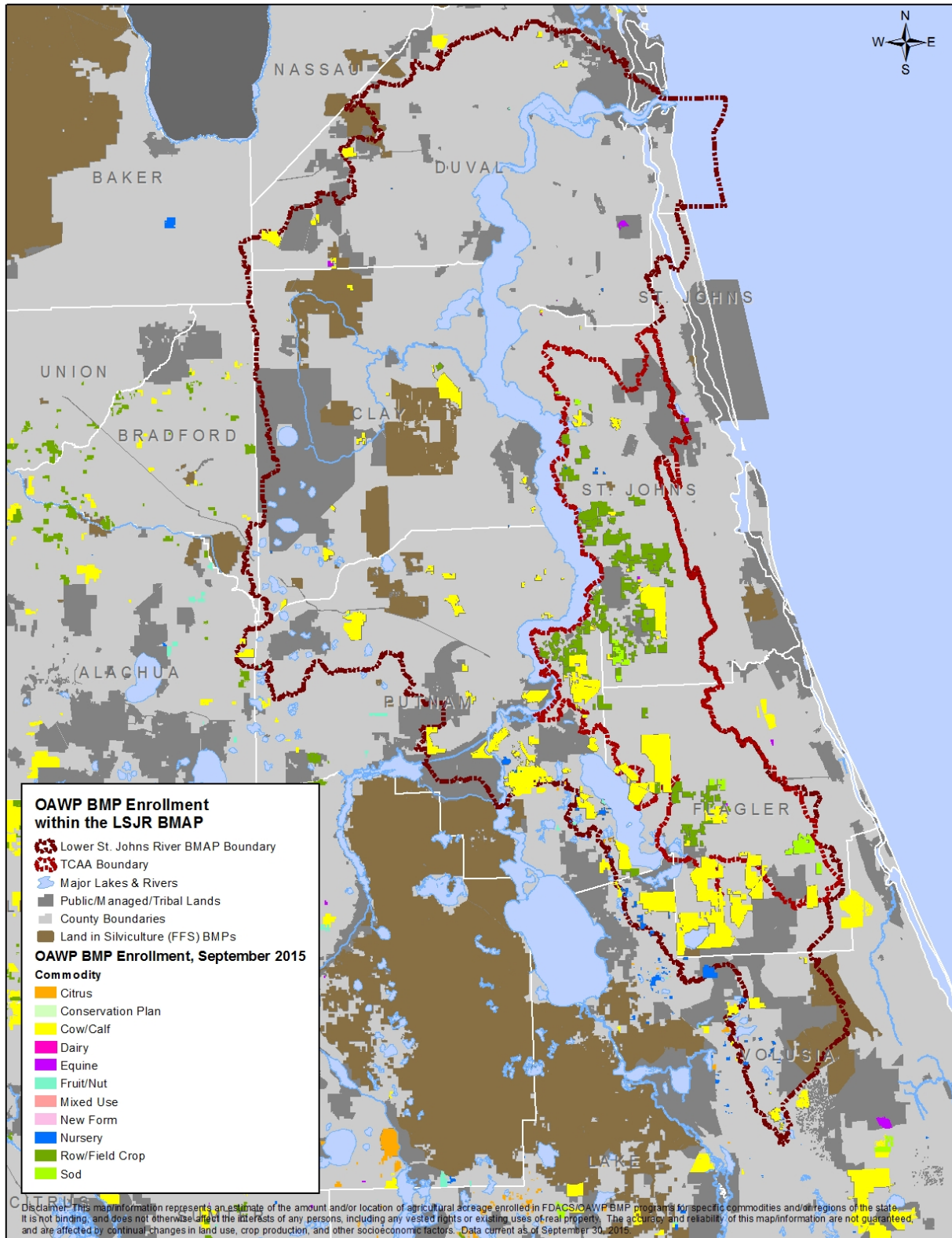


Figure 36: Map of agricultural BMP enrollment in the LSJR Basin

The statewide nursery manual revision, adopted in June 2014, includes practices related to in-ground and cut foliage production methods, in addition to container operations. In 2015, the vegetable and agronomic crop BMP manual was adopted by rule in Chapter 5M-8, F.A.C., which became effective October 7, 2015. The manual includes specific nutrient and irrigation management BMPs for plastic mulch, bare ground, sugarcane, hay/silage, and greenhouse production systems. In 2015, FDACS published a Notice of Proposed Rule in the *Florida Administrative Register* adopting the new manual by reference. In 2016, FDACS will begin developing the poultry BMP manual.

AGRICULTURAL LOAD REDUCTION ALLOCATION AND BMP LOAD REDUCTION ESTIMATES

Table 13 lists the reductions required of agricultural land uses in the LSJR Basin and the estimated load reductions achieved through the implementation of BMPs by all enrolled operations. In prior reports, FDACS only identified credit for enrollment on vegetable and row crop lands. However, during 2015, FDACS met with DEP and the SJRWMD to discuss how credits for reductions associated with BMP implementation in other commodities could be calculated.

It was determined that the same commodity-specific BMP reductions should be applied in the LSJR Basin as were applied in the BMAPs for Lakes Harney and Monroe, St. Lucie River and Estuary, and Lake Okeechobee. Due to the inaccuracies in 2004 land use information and changes in land use since 2004, the estimated total load for agriculture may be greater than the actual loading.

AGRICULTURAL LAND USE DATA

Agricultural acreage in the LSJR Basin has declined since the 2004 land use data collection. In addition, some categories of agricultural land use may include acreage that is not in production or that is not actually agriculture. As discussed above, FDACS determined that 8,438 acres classified as agriculture in the 2004 land use coverage are noncommercial agriculture. This is because aerial photos of land use are not always clear enough to interpret accurately. The potential for misinterpretation is generally greatest in the pasture categories. FDACS staff are working with DEP and the SJRWMD to more accurately determine the agricultural acreage in the basin.

3.1.4.2 TCAA Water Management Partnership

The objective of the TCAA Water Management Partnership is to contribute to the improved health of the LSJR through on-farm and regional water management projects and practices that reduce the movement of nutrients to the river, improve water conservation, and result in more efficient farm management while maintaining the long-term viability of agriculture in the TCAA. The primary

resource concern is the movement of phosphorus from farmlands into the LSJR and its tributaries. However, nitrogen movement is also a concern.

To address these concerns, the TCAA Water Management Partnership is providing funding for water management projects and other practices to better manage and/or treat stormwater runoff and to better target or reduce nutrient applications. Technical support and education/outreach to promote enhanced farm practices is also a key component. TCAA Water Management Partnership partners include the following:

- TCAA growers.
- FDACS.
- DEP.
- SJRWMD.
- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS).
- University of Florida–Institute of Food and Agricultural Sciences (UF–IFAS).
- St. Johns County.
- Floridan Resource Conservation and Development Council.
- Florida Farm Bureau.
- Florida Fruit and Vegetable Association.

Project types and cost-share items currently are considered for funding by the TCAA Water Management Partnership include the following; however, other ideas for projects that would further the program objective may be proposed:

- Projects:
 - *Surface and subsurface drip irrigation.*
 - *Overhead irrigation.*
 - *Tailwater recovery.*
 - *Irrigation drain tile.*
 - *Regional water reuse.*
 - *Regional wet detention.*

- Practices/Equipment:
 - *Fertilizer application equipment, e.g., banding equipment, nurse tank and injection pumps for fertigation, and automated fertigation and irrigation controllers for drip systems.*
 - *Observation wells.*
 - *Pump upgrades with soil moisture sensors.*
 - *Soil moisture sensors.*

The growers and agencies (FDACS, DEP, SJRWMD, NRCS, and UF–IFAS) are working together to install and demonstrate these projects and practices on TCAA farms through cost-share funding, education, and technical assistance. To date (projects funded in fiscal years (FYs) 2012/2013 and 2014/2015, the projects treat 1,508 acres. The TN and TP reductions associated with these projects are 14,886.00 and 2,919.00 pounds per year (lbs/yr), respectively. Additionally, it is estimated that these projects save 128 million gallons of water per year.

Since 2012, 16 fertilizer banding machines have been purchased and fertilizer banding implemented at 16 farms on 11,768 acres. Banding applications have resulted in TN and TP reductions of 26,929.00 and 10,823.00 lbs/yr, respectively. Acreage and reduction figures for projects funded from the June 2015 application period were not available at the time of this report but will be included in future updates. Approved irrigation projects include, but are not limited to, the following:

- Enhanced seepage irrigation on potatoes and other vegetables.
- Surface drip irrigation on potatoes.
- Irridrain on potatoes and sod.
- Overhead irrigation on sod, cabbages, and potatoes.

To be eligible for cost-share funding, TCAA growers must be enrolled and implementing applicable FDACS BMPs. This is one of eight eligibility requirements, including the willingness to undergo monitoring to determine the benefits of the projects, and to host and participate in educational/demonstration activities on the project site.

FDACS staff are coordinating the partnership's efforts. The SJRWMD provided \$2.25 million in FY 2013/2014, with \$750,000 dedicated to fertilizer banding equipment and \$849,630 in FY 2015/2016 for water management projects. FDACS provided a total of \$1 million in FY 2013/2014 and 2014/2015 and

budgeted \$990,000 in FY 2015/2016. DEP contributed \$1.9 million in FY 2013/2014 and 2014/2015 and budgeted \$800,000 in FY 2015/2016 for water management projects and banding equipment, which is administered through the SJRWMD. DEP and FDACS are providing funds to monitor the water quality and conservation benefits of four of the approved projects.

Through the National Water Quality Incentives Program (NWQIP), the NRCS provided increased targeted cost-share in two subbasins in the TCAA for farms that enrolled in the Environmental Quality Incentives Program (EQIP). Total program funds obligated for the TCAA since 2012 through grower contracts are \$877,341. NRCS plans to continue to set aside funds for the TCAA.

UF–IFAS held several workshops and demonstration days on more efficient irrigation and nutrient management practices. While the current focus for projects is on more efficient irrigation systems to reduce nutrient runoff and leaching, irrigation/stormwater recovery and reuse projects are under discussion for future funding. These may be on individual farms or may be joint projects between two or more farms. Members of the TCAA Water Management Partnership technical support team are developing information on tailwater recovery specific to the TCAA, to inform farmers on associated design requirements, benefits, and costs.

The partnership is intended to be perpetual, to foster ongoing collaboration among agencies and growers. While funding amounts for projects and practices may vary from year to year, there will be continued support for farmers to enhance their farming practices and reduce their nutrient inputs while maintaining or increasing yields.

3.1.4.3 BMP Compliance Process

To ensure that agricultural landowners are aware of their statutory responsibility to implement BMPs in the BMAP area, FDACS conducted a broad mail-out (about 2,400 letters) in 2013 to landowners with property of 10 acres or more with a county agricultural tax classification, and to nurseries of all sizes. Many of these properties turned out to be noncommercial agriculture of smaller acreages (10 to 30 acres), largely planted pines with no fertilization or other active management.

However, a significant number of commercial operations responded to the letter and enrolled in FDACS BMPs or are scheduled for enrollment. FDACS staff and contractors are conducting follow-up with respondents to the compliance assistance letter. The Florida Forest Service indicates that 90,084 acres were enrolled in forestry BMPs from September 2013 through December 2015 as a result of the mail-

out. Of this number, 16,790 acres were enrolled from January 1, 2015, through September 30, 2015. FDACS reports that 45,405 acres were enrolled in fruit/nut, cow/calf, equine, vegetable and agronomic crop, and nursery BMP programs during that time as a result of the mail-out. Follow-up activities will continue.

3.1.4.4 RST Facilities/Hybrid Wetland Treatment Technology (HWTT) Project

RST Facilities

In the TCAA, the SJRWMD completed two RST facilities: Deep Creek West (also known as "Yarborough") and Dog Branch (also known as "Edgefield"), located in St. Johns and Putnam Counties, respectively. Modeling assessments conducted prior to the construction of the Deep Creek RST estimated reductions of 998 kg/yr of TN and 816 kg/yr of TP. The Edgefield RST was estimated to achieve reductions of 2,404 kg/yr of TN and 1,089 kg/yr of TP. Both RST facilities are designed as a BMP treatment train with a wet detention pond at the forefront followed by a constructed treatment wetland. Through an agreement with the SJRWMD and DEP, both St. Johns and Putnam Counties operate and maintain the facilities in exchange for a prorated share of nutrient reduction credits in the LSJR BMAP.

Differences in nutrient loads entering and exiting (inflow canal load versus wetland outflow load) both the Deep Creek West facility and the Dog Branch facility were calculated to generate the actual annual total load reductions and overall RST treatment efficiency for the 2009 through 2014 period of record. Both facilities have exceeded the estimated TN and TP reductions outlined in the LSJR BMAP. The Deep Creek West annual average nitrogen and phosphorus reductions for 2009 through 2014 were 2,875 kg/yr and 1,336 kg/yr, respectively, which exceed the estimated TN load reductions (1,000 kg/yr) and estimated TP load reductions (818 kg/yr). The Dog Branch facility annual average nitrogen and phosphorus reductions for 2009 through 2014 were 7,676 and 3,143 kg/yr respectively, which exceed the estimated TN load reductions (2,409 kg/yr) and TP load reductions (1,091 kg/yr). Both facilities have reduced nutrient loading from their respective agricultural watersheds.

Based on the findings of a wetland dye-tracer study conducted in June 2010 at the Deep Creek West RST facility, only 5.1 acres of the 38-acre wetland were functioning under baseflow condition due to hydraulic short circuiting and dead zones throughout the wetland. Additionally, St. Johns County identified other potential improvements that could optimize the nutrient removal achieved at Deep Creek West. The SJRWMD and the county collaborated on the design improvements and estimated the new

design features would improve water quality by treating an additional 635 kg of TP and 907 kg of TN annually. Phase I construction, completed in 2015, has increased flow and storage volumes in the pond. Phase II construction, which is ongoing, includes wetland ditch blocks to increase the wetted area of the wetland, thus increasing residence time and treatment. Construction is scheduled for completion in 2016. Subsequently, since the Deep Creek West project has been off-line, performance monitoring has not occurred and 2015 nutrient reductions cannot be reported.

The Dog Branch RST facility also underwent design improvements during 2015 to improve water quality treatment, and thus 2015 nutrient reductions cannot be reported. The SJRWMD replaced failing pumps. The old pump system was designed to capture 80% of peak discharge, using two pumps capable of pumping 15 cfs each. However, baseflow (average of 2.81 cfs) was estimated to be 69% of the total flow into the system (CDM 2003 Technical Memorandum). Because of the pump design, which resulted in short pump cycles, a large volume of baseflow bypassed the inflow to the RST, flowing untreated to the river. New variable-rate pumps installed in September 2015 are designed to efficiently capture both low and high flows from Dog Branch, improving pumping capacity during baseflow, as well as pump efficiency and treatment performance during both low- and high-flow conditions. The Dog Branch RST is now operational.

St. Johns County continued the construction of an additional RST on property obtained from the SJRWMD, known as the "Masters Tract," adjacent to Deep Creek near Hastings. The estimated reduction values for this facility are 2,370 kg/yr of TN and 1,190 kg/yr of TP. The total estimated cost of the project is \$6,432,000.

HWTT Project

FDACS submitted a permit application for the construction of the Deep Creek HWTT system (also known as "Deep Creek East"), which will be located on the east side of Deep Creek. Water will be pumped from Deep Creek into the HWTT system, and the treated water will be discharged back into the creek. The facility has anticipated TN and TP reductions of 10,140.10 kg/yr TN and 2,815.90 kg/yr TP.

3.2 Improving Scientific Understanding

3.2.1 Water Quality Monitoring

3.2.1.1 Freshwater Reach for the Chlorophyll-*a* Target

The SJRWMD long-term river ambient monitoring network includes five stations. A sixth station at Federal Point was dropped in 2012 when the station locations were optimized. The stations monitor the WBIDs between Palatka and Green Cove Springs, which are assessed annually for compliance with the TMDL chlorophyll-*a* target. Data are regularly uploaded to the Florida Storage and Retrieval (STORET) Database.

In addition, two continuous in situ sensor stations are supported in this reach. These are used to interpolate between monitoring dates to ensure conformity with the duration component of the criteria. Finally, it is expected that satellite remote sensing capability for bloom monitoring will be restored in 2016 with the launch of the Sentinel-3 Ocean and Land Color Instrument, allowing for a detailed two-dimensional estimate of the extent of bloom density.

3.2.1.2 Marine Reach for the DO Target

Compliance with the DO target in the marine reach of the river is determined through data collected by from the USGS continuous DO station at Dames Point. The data from this station can be accessed through the [USGS website](#).

The two DO stations at Fulton Point and CBC were not operational in 2015. At the Fulton Point station, damage from two separate boat strikes in 2012 meant that few data were collected in 2012 and all of 2013. Equipment was redeployed in March 2014 at a slightly different location (648 meters east of the previous location). Data were collected from March 18, 2014, through December 1, 2014. After repairs, data were collected from February 12, 2015, through April 27, 2015, when another equipment failure occurred. The dataset from this station is therefore very limited for 2015.

At the CBC station, the DO sondes disappeared in early 2013. DEP installed new sondes in September 2014. However, no data sonde records were available for 2015 due to another equipment failure.

3.2.1.3 River and Tributary Inflow Monitoring

The tributaries monitoring includes ambient sampling to determine the loads entering the main stem of the river from its tributaries and to estimate the reductions associated with the implementation of

stormwater projects. The SJRWMD collects regular ambient surface water samples at 16 stations, most of which are sampled monthly.

In addition to surface water chemistry, the SJRWMD monitoring program collects samples for the identification of phytoplankton and algal toxins at a limited number of sites and, in 2015, resumed submerged aquatic vegetation (SAV) monitoring. This sampling occurred on schedule over the last year. JEA is responsible for sampling five stations bimonthly, and this sampling occurred on schedule throughout the year. In addition, Jacksonville maintains a long-term network, which provides supporting data for the BMAP monitoring plan. All the ambient monitoring data are uploaded to STORET regularly.

3.2.2 Algal Initiative and Upstream Projects

As reported previously, the SJRWMD completed two RST facilities and St. Johns County continued the construction of an additional RST on property obtained from the SJRWMD, known as the "Masters Tract," adjacent to Deep Creek near Hastings. The estimated reduction values for this facility are 2,370 kg/yr of TN and 1,190 kg/yr of TP. The total estimated cost of this project is \$6,432,000. St. Johns County and the SJRWMD are collaborating on the design and construction of improvements to the Deep Creek West RST facility that will result in improved water quality treatment. These improvements are estimated to provide 1,400 lbs/yr of TP and 2,000 lbs/yr of TN removal.

The SJRWMD is undertaking numerous upstream projects. For example, the district executed its second year of rough fish harvesting from Lake George, which is just upstream of the LSJR Basin. The 2015 summer harvest began on May 4, 2015, and ended in early September 2015. The 1,325,978 pounds (601,453 kilograms) of rough fish removed equate to the direct removal of 10,926 pounds of phosphorus and 27,845 pounds of nitrogen. As in previous years, the 2016 harvest is planned for May through September.

In addition, potential projects are under evaluation in the Deep Creek Basin in Volusia County and in the Wekiva River and Econlockhatchee River Basins. The potential acquisition of agricultural lands on the shores of Lake Jesup, with associated improvements in water quality treatment for stormwater entering the lake, is also being evaluated.

3.2.3 SJRWMD Funding for Additional Nutrient Reductions

The SJRWMD has executed several cost-share agreements for the expansion of reclaimed water service with Palatka, JEA, CCUA, Neptune Beach, and NAS Jacksonville. All projects subject to these

agreements are complete.

As indicated in the BMAP, water quality credits are being held for the river to provide reductions over and above what is required to achieve the TMDLs. The credits are based on the SJRWMD ad valorem funding contribution, prorated in relation to the total project cost. Held credits do not accrue to the recipient and are not available for TMDL compliance or for sale as water quality credits to other entities. Credit reductions will be documented in the recipient's domestic wastewater facilities permit. The amount of credit reservations by the SJRWMD is 45,503 kg/yr of TN. These reductions will be finally calculated for adoption through the permitting process when projects are completed and based on final construction costs and actual nutrient reduction data.

In addition to these projects, the CCUA and SJRWMD entered into an agreement for the construction of a reclaimed water storage project to take water from the Miller Street Plant that would otherwise be discharged into the St. Johns River, and store it in a series of infiltration cells. This approach, called the Reclaimed Water Land Application and Recovery System (RWLARS), consists of a series of surficial aquifer rapid infiltration basins (RIBs). The goal of the project is to provide the wet weather storage of reclaimed water during periods of low demand and reuse the water during periods of high demand. The project has two primary objectives: (1) to reduce the discharge of reclaimed water to the LSJR, and (2) to reduce the CCUA's pumping of Floridan aquifer groundwater to augment its reclaimed water system during high-demand periods. The project was completed in 2015 at a total cost of \$2.5 million and, once its full capacity is reached, will reduce nitrogen discharges by 9,850 kg/yr.

3.3 Funding

The stakeholders did not receive any additional grant funding from DEP during the annual reporting period.

The SJRWMD has increased funding opportunities to local governments through the Rural Economic Development Initiative (REDI) for innovative water quality projects and agricultural BMP cost-share programs. Putnam County and its municipalities are eligible for additional funding opportunities through REDI.

3.4 Summary of Accomplishments

Table 14 and **Figure 37**, **Table 15** and **Figure 38**, and **Table 16** and **Figure 39** illustrate the load reductions made by the stakeholders in the LSJR Basin and the remaining reductions in nutrient loading

needed to achieve the TMDLs in each segment of the river. Although some source categories exceed their reductions, there are individual stakeholders that still need to make reductions to meet their BMAP allocations.

Table 14: Progress towards the TP TMDL in the freshwater reach

*Exceeds the total required reductions for the source category.

Source	% of Controllable Load	Starting Load (kg/yr)	2015 Load (kg/yr)	Allocation (kg/yr)	Remaining Reductions (kg/yr)	% Complete
WWTF*	45%	81,015	37,881	44,386	0	100%
MS4*	1%	1,500	1,256	1,256	0	100%
Non-MS4	7%	12,358	10,157	9,408	749	75%
Agriculture	47%	83,455	75,626	70,974	4,652	63%
Total	100 %	178,329	124,920	126,025	5,401	90 %

As indicated in **Table 14**, the reductions achieved by the wastewater facilities and the MS4s exceed the allocations to these sources. There are reductions remaining that have been assigned to non-MS4 areas and to agricultural land uses, for an overall 90% completion.

Figure 37 shows the progress made since the TMDL data period in reducing loads. As the wastewater facilities and MS4s have exceeded their requirements, the estimated 2015 TP load is less than the TP allocation for the river. Additional TP reductions are still expected from those entities that have not met their individual TP reduction requirements.

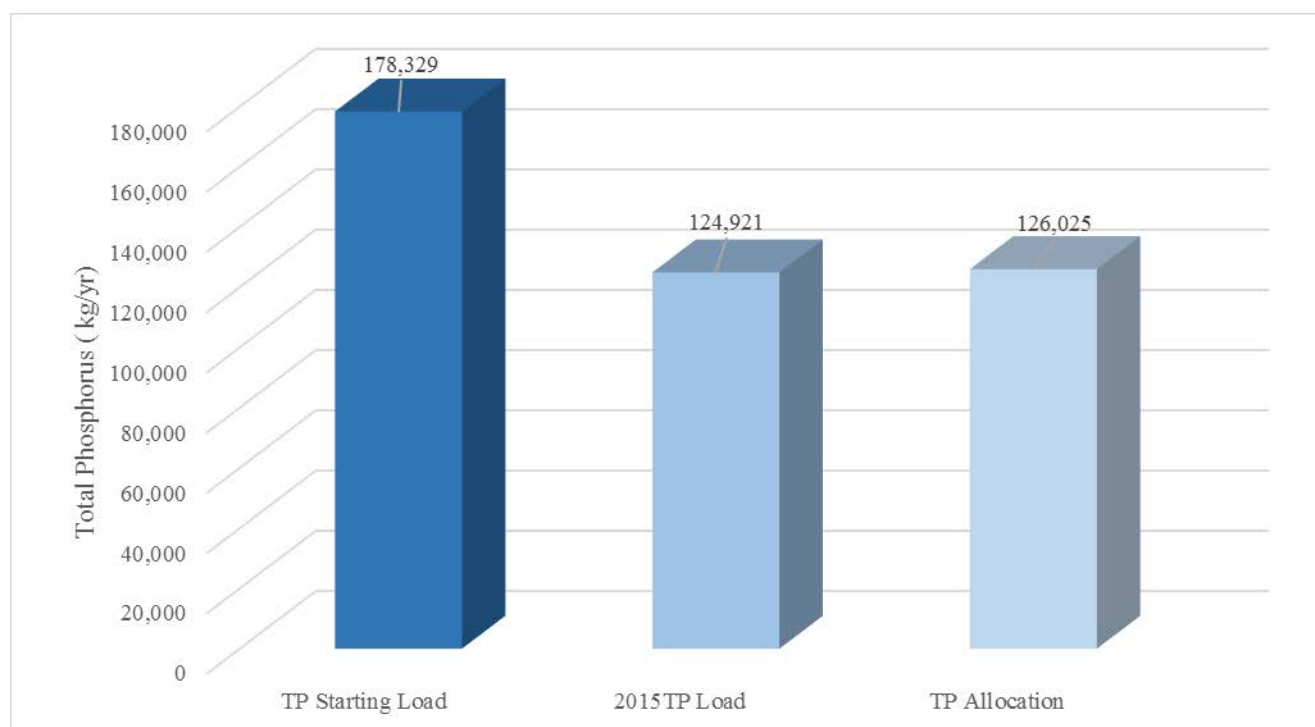


Figure 37: Progress towards the TP TMDL in the freshwater reach

As indicated in **Table 15**, the freshwater TN reductions achieved by the wastewater facilities and the MS4s exceed the allocations to these sources, like the TP reductions. There are reductions remaining that have been assigned to non-MS4 areas and to agricultural land uses, for an overall 84% completion.

Table 15: Progress towards the TN TMDL in the freshwater reach

*Exceeds the total required reductions for the source category.

Source	% of Controllable Load	Starting Load (kg/yr)	2015 Load (kg/yr)	Allocation (kg/yr)	Remaining Reductions (kg/yr)	% Complete
WWTF*	47%	364,650	195,560	237,200	0	100%
MS4*	1%	9,731	8,685	8,685	0	100%
Non-MS4	11%	88,705	75,828	74,119	1,709	88%
Agriculture	40%	310,700	232,709	194,336	38,373	67%
Total	100 %	773,786	512,782	514,340	40,232	84%

Figure 38 shows the progress since the TMDL data period in reducing TN loads in the freshwater section. As the wastewater facilities and MS4s exceed their requirements, the estimated 2015 TN load is less than the TN allocation for the river. Additional TN reductions are expected from those entities that have not met their individual TN reduction requirements.

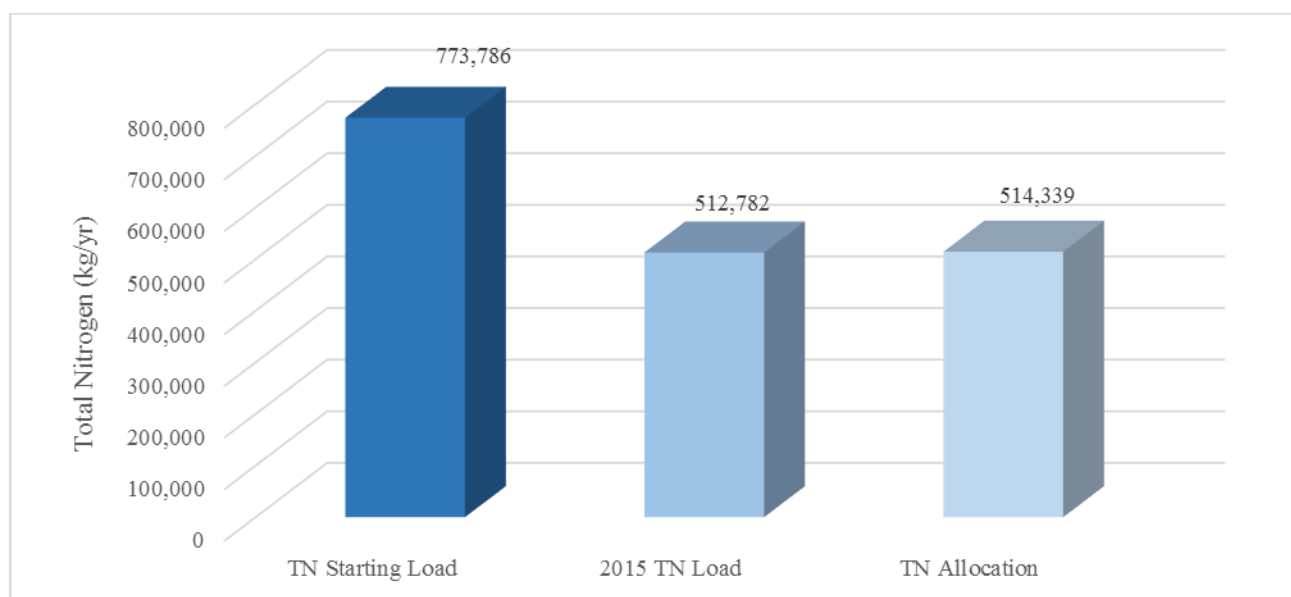


Figure 38: Progress towards the TN TMDL in the freshwater reach

Table 16: Progress towards the TN TMDL in the marine reach

* Exceeds the total required reductions for the source category.

** Reductions have not occurred for the agricultural sources; however, based on an evaluation of recent land uses, there does not appear to be agriculture remaining in the marine reach.

Source	% of Control-able Load	Starting Load (kg/yr)	2015 Load (kg/yr)	Allocation (kg/yr)	Remaining Reductions (kg/yr)	% Complete
WWTF*	84%	1,786,542	838,561	878,326	0	100%
MS4	14%	291,657	222,526	136,422	86,104	45%
Non-MS4	1%	24,767	21,785	17,192	4,593	39%
Agriculture**	1%	12,800	12,800	4,170	8,630	0%
Total	100 %	2,115,766	1,095,672	1,036,110	99,327	94 %

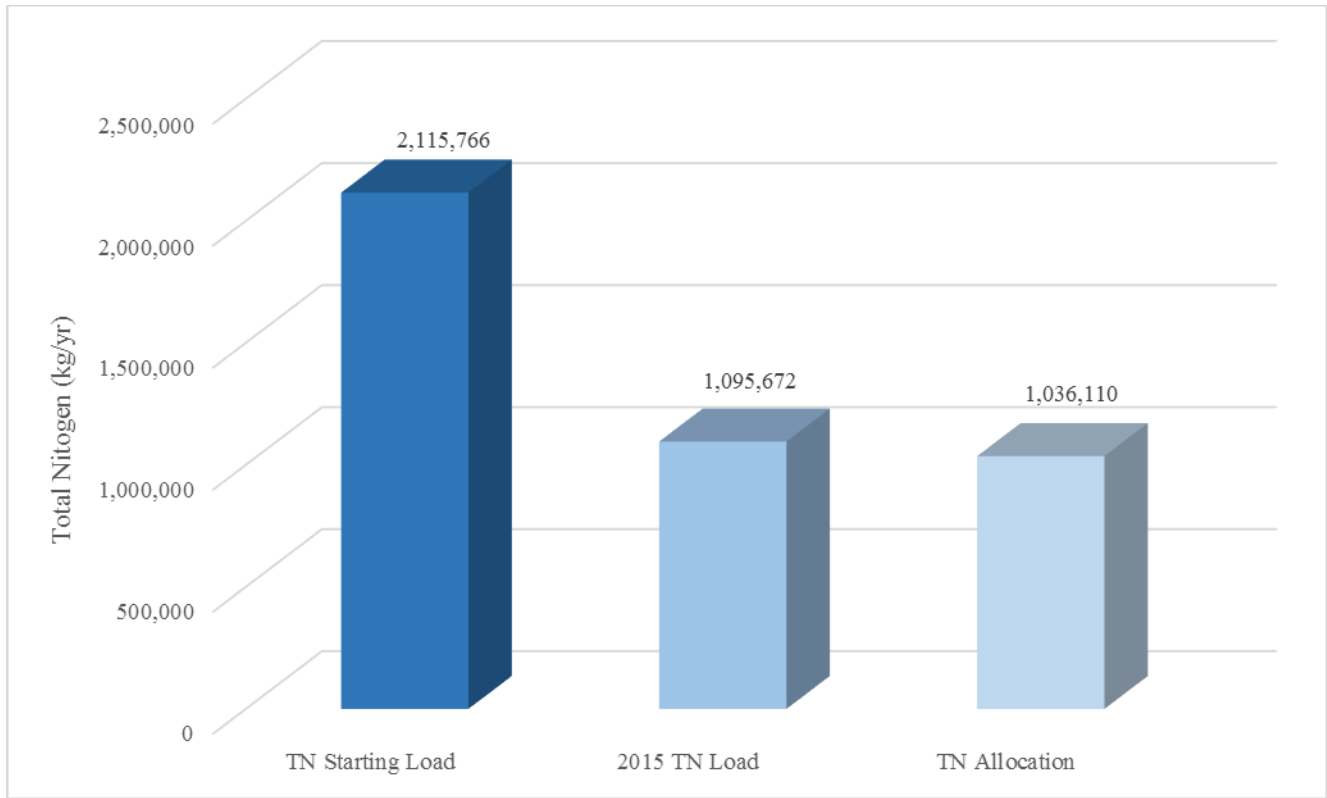


Figure 39: Progress towards the TN TMDL in the marine reach

3.5 Water Quality Monitoring

For the freshwater sampling, the SJRWMD will continue to monitor its ambient stations. In the river's marine reach, both Jacksonville and the SJRWMD will continue to operate their long-term water quality monitoring programs. DEP will continue the DO monitoring stations at Fulton Point and CBC. The SJRWMD and JEA will continue ambient water quality sampling in the tributaries.

Section 4: UPCOMING ACTIVITIES

The eighth annual BMAP progress report will encompass the period from January 1 to December 31, 2016. **Section 4.1** summarizes the activities that will occur during this time.

4.1 Upcoming Efforts by Source Type

4.1.1 *MS4s*

4.1.1.1 Marine Reach

U.S. NAVAL STATION(NS) MAYPORT

Design of the new and improved WWTF at NS Mayport was awarded by the federal government on May 26, 2015. The design will implement bionutrient removal (BNR) technologies shown to be successful in pilot plant testing conducted in 2013. The design completion will position the installation to be ready to proceed with construction upon approval of military construction funding.

4.1.2 *Urban Stormwater*

4.1.2.1 Freshwater Reach

PUTNAM COUNTY

Putnam County will complete the septic tank phase out by the end of 2016.

4.1.2.2 Marine Reach

CAMP BLANDING

Camp Blanding will continue to regrade the swales per the consent letter (Project CB-4), for a total of 27 miles in 2016.

4.1.3 *Agriculture*

FDACS will continue to focus on increasing enrollment in all commodities and supporting and expanding the TCAA Water Management Partnership. Extension agents and researchers with UF-IFAS will continue to assist growers in nutrient application and irrigation efficiencies, and in applying for cost-share funds for water management projects and BMPs. FDACS will continue to provide coordination and technical support for the partnership. The SJRWMD, DEP, and NRCS will continue to assist growers with developing project concepts and monitoring plans, along with providing cost-share funds as available.

It is important to remember that even if all commercial agricultural operations participate in FDACS BMPs, the enrolled acreage will not total the target acreage for several reasons, as follows:

- Only the acres that are in production and need BMPs are recorded on the NOIs and tracked in the FDACS BMP tracking system.
- The land use data on which target enrollment is based are from 2004; since that time, agricultural acreage has declined in the basin.
- The land use data contain inaccuracies that inflate the amount of agricultural acreage in the basin.
- There is a significant amount of noncommercial open land, pasture, and forestry acreage that is not appropriate for enrollment in FDACS BMP programs. Many landowners who receive the agricultural tax classification, and whose properties are identified as agricultural land use in SJRWMD land use data, do not engage in production agriculture.

Appendices

Appendix A: BMAP Projects

The BMAP project tables below reflect project status as of December 31, 2015. These tables provide information on the nutrient reduction attributed to each individual project and the remaining nutrient load after each project is implemented, shown in both kg/yr and lbs/yr. The expected load reductions are subtracted from the entity's starting point load. The remaining nutrient balance once all projects have been implemented by an entity should be equal to or exceed the allocation for that entity's facility or facilities. The schedule to implement each project is also included.

Note to tables:

N/A = Not applicable.

FRESHWATER PHOSPHORUS ALLOCATION*Name of Facility**Wasteload Allocation (kg/yr)**Clay County MS4 FLR04E045.....212.6*

Lead Entity	Project Number	Project Description	Project Type	Acres Treated	Deadline	Project TP Reduction (kg/yr)	Project TP Reduction (lbs/yr)
CC MS4 FLR04E045	N/A	Total Reduction Required	N/A	N/A	N/A	191.9	422.2
CC MS4 FLR04E045	CC-1	Education Program	N/A	N/A	Ongoing	16.2	35.6
CC MS4 FLR04E045	CC-2	Florida Department of Transportation (FDOT) SR 21 Widening from SR 215 to CR 220	Dry retention (1")	12	Completed	2.3	5.1
CC MS4 FLR04E045	CC-3	Trade with CCUA	N/A	N/A	Completed	173.4	381.5
CC MS4 FLR04E045	N/A	Total Project Reductions	N/A	N/A	N/A	191.9	442.2
CC MS4 FLR04E045	N/A	Credit/(Deficit)	N/A	N/A	N/A	0	0

*Name of Facility**Wasteload Allocation (kg/yr)**City of Green Cove Springs Aggregate FL06356181,929.2*

Lead Entity	Project Number	Project Description	Deadline	Project TP Reduction (kg/yr)	Project TP Reduction (lbs/yr)
Green Cove Total (Aggregate)	N/A	Total Reduction Required	N/A	1,935.8	4,258.8
GCS – Harbor Rd FL0020915, South FL0030210	GCS-3	Operational Changes	Completed	2,486	5,469.2
Green Cove Total (Aggregate)	N/A	Total Project Reductions	N/A	2,486	5,469.2
Green Cove Total (Aggregate)	N/A	Credit/(Deficit)	N/A	550.2	1,210.4

Name of Facility **Wasteload Allocation (kg/yr)**
City of Green Cove Springs MS4 FLR04E103.....1,043.7

Lead Entity	Project Number	Project Description	Project Type	Acres Treated	Deadline	Project TP Reduction (kg/yr)	Project TP Reduction (lbs/yr)
Green Cove MS4	N/A	Total Reduction Required	N/A	N/A	N/A	52	114
GCS MS4 FLR04E103	GCS-3	SW Drainage System Improvements	Wet Detention (1", 21 day)	54.6	Completed	15	33
GCS MS4 FLR04E103	GCS-4	Cypress Baffle Box	Baffle Box	125	Completed	6	13
GCS MS4 FLR04E103	GCS-5	Green Cove Springs Industrial Park	Wet Detention (2.5", 21 day)	91.6	Completed	31	68
GCS MS4 FLR04E103	GCS-6	Vystar Credit Union	Dry Detention	1.8	Completed	0	0
Green Cove MS4	N/A	Total Project Reductions	N/A	N/A	N/A	52	114
Green Cove MS4	N/A	Credit/(Deficit)	N/A	N/A	N/A	0	0

Name of Facility **Wasteload Allocation (kg/yr)**
City of Palatka WWTF FL0040061.....5,954.7

Lead Entity	Project Number	Project Description	Deadline	Project TP Reduction (kg/yr)	Project TP Reduction (lbs/yr)
Palatka WWTF	N/A	Total Reduction Required	N/A	4,000.3	8,800.7
Palatka WWTF FL0040061	PAL-1	Reuse to Golf Course	Completed	1,730	3,806
Palatka WWTF FL0040061	PAL-2	Reuse to Ballfields	Completed	691	1,520
Palatka WWTF FL0040061	PAL-3	Reuse to Cemeteries	Completed	1,205	2,651
Palatka WWTF FL0040061	PAL-4	Reuse at WTP	Completed	1,555	3,421
Palatka WWTF FL0040061	PAL-5	Zero Discharge	Completed	4,774	10,503
Palatka WWTF	N/A	Total Project Reductions	N/A	9,955	21,901
Palatka WWTF	N/A	Credit/(Deficit)	N/A	5,954.7	13,100.3

Name of Facility.....**Wasteload Allocation (kg/yr)**
Georgia-Pacific FL0002763.....**33,182**

Lead Entity	Project Number	Project Description	Deadline	Project TP Reduction (kg/yr)	Project TP Reduction (lbs/yr)
Georgia-Pacific	N/A	Total Reduction Required	N/A	30,693	67,525
Georgia-Pacific	GP-1	Complete Process Improvements	Completed	30,693	67,525
Georgia-Pacific	N/A	Total Project Reductions	N/A	30,693	67,525
Georgia-Pacific	N/A	Credit/(Deficit)	N/A	0	0

Name of Facility.....**Load Allocation (kg/yr)**
City of Palatka Non-MS4.....**1,507.8**

Lead Entity	Project Number	Project Description	Project Type	Deadline	Project TP Reduction (kg/yr)	Project TP Reduction (lbs/yr)
Palatka Non-MS4	N/A	Total Reduction Required	N/A	N/A	0.0	0.0
Palatka Non-MS4	PAL-7	Downtown Watershed First-Flush Treatment	Stormwater Treatment System	Completed	0.3	0.7
Palatka Non-MS4	N/A	Total Project Reductions	N/A	N/A	0.3	0.7
Palatka Non-MS4	N/A	Credit/(Deficit)	N/A	N/A	0.3	0.7

Name of Facility.....**Load Allocation (kg/yr)**
Clay County Non-MS4.....**499.4**

Lead Entity	Project Number	Project Description	Project Type	Acres Treated	Deadline	Project TP Reduction (kg/yr)	Project TP Reduction (lbs/yr)
CC Non-MS4	N/A	Total Reduction Required	N/A	N/A	N/A	267.9	589.4
CC Non-MS4	CC-4	Education Program	N/A	N/A	Ongoing	30.7	67.5
CC Non-MS4	CC-5	FDOT Construction of 7 New Wet Ponds on SR 15 from Putnam County Line to SR 16	Wet Pond (1", 14 days)	281	Completed	89.5	196.9
CC Non-MS4	CC-6	Trade with CCUA	N/A	N/A	Completed	147.7	324.9
CC Non-MS4	N/A	Total Project Reductions	N/A	N/A	N/A	267.9	589.4
CC Non-MS4	N/A	Credit/(Deficit)	N/A	N/A	N/A	0	0

Name of Facility**Wasteload Allocation (kg/yr)****Hastings Non-MS4.....49.3**

Lead Entity	Project Number	Project Description	Project Type	Acres Treated	Deadline	Project TP Reduction (kg/yr)	Project TP Reduction (lbs/yr)
Hastings Non-MS4	N/A	Total Reduction Required	N/A	N/A	N/A	43.6	95.9
Hastings Non-MS4	HAS-1	WWTP Chemical Feed Systems	N/A	N/A	Completed	249.1	548.0
Hastings Non-MS4	HAS-2	FDOT 4 Laning of SR 207	Wet Pond (1", 14 days)	12	Completed	3.6	7.9
Hastings Non-MS4	HAS-3	FDOT 4 Laning of SR 207 from CR 305 to Cypress Link Blvd	Wet Pond (1", 14 days)	106	Completed	33.6	73.9
Hastings Non-MS4	N/A	Total Project Reductions	N/A	N/A	N/A	286.3	629.9
Hastings Non-MS4	N/A	Credit/(Deficit)	N/A	N/A	N/A	242.7	533.9

Name of Facility**Wasteload Allocation (kg/yr)****Putnam County Non-MS43,964.9**

Lead Entity	Project Number	Project Description	Project Type	Acres Treated	Deadline	Project TP Reduction (kg/yr)	Project TP Reduction (lbs/yr)
Putnam Non-MS4	N/A	Total Reduction Required	N/A	N/A	N/A	2,025.5	4,456.1
Putnam Non-MS4	PUT-1	Trade with Putnam Lanes WWTF	N/A	N/A	Completed	12.5	27.5
Putnam Non-MS4	PUT-2	Trade with Hiawatha WWTF	N/A	N/A	Completed	49.8	109.6
Putnam Non-MS4	PUT-3	Septic Tank Phase-Out	N/A	N/A	05/31/2015	298.0	656.0
Putnam Non-MS4	PUT-4	Edgefield RST O&M Value	N/A	N/A	Completed	269.1	592.0
Putnam Non-MS4	PUT-5	FDOT Construction of 7 New Wet Ponds on SR15 from Clay County Line to South of Gordon Wilkins Rd	Wet Pond (1", 14 days)	1,181	Completed	376.8	829.0
Putnam Non-MS4	PUT-6	Algal Initiative	N/A	N/A	10/31/2017	824.6	1,814.0
Putnam Non-MS4	PUT-8	Education and Outreach	Education	N/A	Ongoing	194.7	428.0
Putnam Non-MS4	N/A	Total Project Reductions	N/A	N/A	N/A	2,025.5	4,456.1
Putnam Non-MS4	N/A	Credit/(Deficit)	N/A	N/A	N/A	0	0

**Putnam County Non-MS4 Project Schedule
Septic Tank Phase-Out**

Activity	Schedule
a. Start Date	Completed
b. Completion Date - Design	Completed
c. Completion Date - Construction	05/31/2015
d. Completion Date – Completion of Project	05/31/2015

Algal Initiative

Activity	Schedule
a. Start Date	Completed
b. Completion Date – Project Assessment	Completed
c. Completion Date – Project Fundraising	10/31/2012
d. Completion Date – Construction	10/31/2017

Name of Facility.....Load Allocation (kg/yr)
St. Johns County Non-MS4.....3,296.6

Lead Entity	Project Number	Project Description	Deadline	Project TP Reduction (kg/yr)	Project TP Reduction (lbs/yr)
SJC Non-MS4	N/A	Total Reduction Required	N/A	430.8	947.8
SJC Non-MS4	SJC-3	Stormwater Education	Ongoing	186.4	410.1
SJC Non-MS4	SJC-4	Low-Impact Development	Ongoing	Not quantified	Not quantified
SJC Non-MS4	SJC-5	Slow Release Fertilizer Ordinance	Completed	Not quantified	Not quantified
SJC Non-MS4	SJC-6	Deep Creek RST O&M value	Completed	255.9	563.0
SJC Non-MS4	SJC-7	Purchase Hastings WWTF Reduction Credits	Completed	198.2	436.0
SJC Non-MS4	N/A	Total Project Reductions	N/A	640.5	1,409.1
SJC Non-MS4	N/A	Credit/(Deficit)	N/A	209.7	461.3

Name of Facility.....Load Allocation (kg/yr)
Welaka Non-MS4.....90.4

Lead Entity	Project Number	Project Description	Deadline	Project TP Reduction (kg/yr)	Project TP Reduction (lbs/yr)
Welaka Non-MS4	N/A	Total Reduction Required	N/A	81.6	179.5
Welaka Non-MS4	WEL-1	Septic Tank Phase-Out	Completed	153.0	336.6
Welaka Non-MS4	N/A	Total Project Reductions	N/A	153.0	336.6
Welaka Non-MS4	N/A	Credit/(Deficit)	N/A	71.4	157.1

POINT SOURCE – FRESHWATER NITROGEN ALLOCATION

Name of Facility
Clay County MS4 FLR04E045.....2,418

Lead Entity	Project Number	Project Description	Project Type	Acres Treated	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
CC MS4 FLR04E045	N/A	Total Reduction Required	N/A	N/A	N/A	352	774
CC MS4 FLR04E045	CC-1	Education Program	N/A	N/A	Ongoing	111	244
CC MS4 FLR04E045	CC-2	FDOT SR 21 Widening from SR 215 to CR 220	Dry retention (1")	12	Completed	5	11
CC MS4 FLR04E045	CC-7	Atmospheric Deposition Load Reduction – Seminole Electric Selective Catalytic Reduction (SCR) Upgrade	N/A	N/A	Completed	236	519
CC MS4 FLR04E045	N/A	Total Project Reductions	N/A	N/A	N/A	352	774
CC MS4 FLR04E045	N/A	Credit/(Deficit)	N/A	N/A	N/A	0	0

Name of Facility
City of Green Cove Springs Aggregate FL0635618.....7,752.5

Lead Entity	Project Number	Project Description	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
Green Cove Total (Aggregate)	N/A	Total Reduction Required	N/A	6,847.5	15,064.5
GCS – Harbor Rd FL0020915, South FL0030210	GCS-3	Operational Changes	Completed	9,641	21,210.2
Green Cove Total (Aggregate)	N/A	Total Project Reductions	N/A	9,641	21,210.2
Green Cove Total (Aggregate)	N/A	Credit/(Deficit)	N/A	2,793.5	6,145.7

Name of Facility
City of Green Cove Springs MS4 FLR04E103.....6,266.5

Lead Entity	Project Number	Project Description	Project Type	Acres Treated	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
Green Cove MS4	N/A	Total Reduction Required	N/A	N/A	N/A	694.5	1,528
GCS MS4 FLR04E103	GCS-3	SW Drainage System Improvements	Wet Detention (1", 21 day)	54.6	Completed	28	62
GCS MS4 FLR04E103	GCS-4	Cypress Baffle Box	Baffle Box	125	Completed	15	33
GCS MS4 FLR04E103	GCS-5	Green Cove Springs Industrial Park	Wet Detention (2.5", 21 day)	91.6	Completed	58	128
GCS MS4 FLR04E103	GCS-6	Vystar Credit Union	Dry Detention	1.8	Completed	0.5	1
GCS MS4 FLR04E103	GCS-7	Atmospheric Deposition Load Reduction – Seminole Electric Selective Catalytic Reduction (SCR) Upgrade	N/A	N/A	Completed	593	1,305
Green Cove MS4	N/A	Total Project Reductions	N/A	N/A	N/A	694.5	1,528
Green Cove MS4	N/A	Credit/(Deficit)	N/A	N/A	N/A	0	0

Name of Facility
City of Palatka WWTF FL0040061.....38,845

Lead Entity	Project Number	Project Description	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
Palatka WWTF	N/A	Total Reduction Required	N/A	22,044	48,497
Palatka WWTF FL0040061	PAL-1	Reuse to Golf Course	Completed	13,000	28,600
Palatka WWTF FL0040061	PAL-2	Reuse to Ball Fields	Completed	5,227	11,499
Palatka WWTF FL0040061	PAL-3	Reuse to Cemeteries	Completed	9,091	20,000
Palatka WWTF FL0040061	PAL-4	Reuse at WTP	Completed	11,727	25,799
Palatka WWTF FL0040061	PAL-5	Zero Discharge	Completed	21,844	48,057
Palatka WWTF	N/A	Total Project Reductions	N/A	60,889	133,956
Palatka WWTF	N/A	Credit/(Deficit)	N/A	38,845	85,459

Name of Facility **Wasteload Allocation (kg/yr)**
Georgia-Pacific WWTF FL0002763.....165,909

Lead Entity	Project Number	Project Description	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
Georgia-Pacific	N/A	Total Reduction Required	N/A	92,246	202,941
Georgia-Pacific	GP-1	Complete Process Improvements	Completed	92,246	202,941
Georgia-Pacific	N/A	Total Project Reductions	N/A	92,246	202,941
Georgia-Pacific	N/A	Credit/(Deficit)	N/A	0	0

Name of Facility **Wasteload Allocation (kg/yr)**
Seminole Electric FL0036498.....14,732

Lead Entity	Project Number	Project Description	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
Seminole Electric Total	N/A	Total Reduction Required	N/A	6,314	13,891
Seminole Electric FL0036498	SE-1	SCR Upgrade	Completed	6,314	13,891
Seminole Electric Total	N/A	Total Project Reductions	N/A	6,314	13,891
Seminole Electric Total	N/A	Credit/(Deficit)	N/A	0	0

Name of Facility**Load Allocation (kg/yr)****City of Palatka Non-MS4.....8,858**

Lead Entity	Project Number	Project Description	Project Type	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
Palatka Non-MS4	N/A	Total Reduction Required	N/A	N/A	825	1,815
Palatka Non-MS4	PAL-6	Atmospheric Deposition Load Reduction – Seminole Electric SCR Upgrade	N/A	Completed	825	1,815
Palatka Non-MS4	PAL-7	Downtown Watershed First-Flush Treatment	Stormwater Treatment System	Completed	2	4
Palatka Non-MS4	N/A	Total Project Reductions	N/A	N/A	827	1,819
Palatka Non-MS4	N/A	Credit/(Deficit)	N/A	N/A	2	4

Name of Facility**Load Allocation (kg/yr)****Clay County Non-MS4.....4,659**

Lead Entity	Project Number	Project Description	Project Type	Acres Treated	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
CC Non-MS4	N/A	Total Reduction Required	N/A	N/A	N/A	920	2,024
CC Non-MS4	CC-3	Education Program	N/A	N/A	Ongoing	223	491
CC Non-MS4	CC-4	FDOT Construction of Seven New Wet Ponds on SR 15 from Putnam County Line to SR 16	Wet Pond (1", 14 days)	281	Completed	172	378
CC Non-MS4	CC-8	Atmospheric Deposition Load Reduction – Seminole Electric SCR Upgrade	N/A	N/A	Completed	525	1,155
CC Non-MS4	N/A	Total Project Reductions	N/A	N/A	N/A	920	2,024
CC Non-MS4	N/A	Credit/(Deficit)	N/A	N/A	N/A	0	0

Name of Facility
Load Allocation (kg/yr)
Hastings Non-MS4.....448

Lead Entity	Project Number	Project Description	Project Type	Acres Treated	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
Hastings Non-MS4	N/A	Total Reduction Required	N/A	N/A	N/A	177	389
Hastings Non-MS4	HAS-1	WWTP Chemical Feed Systems	N/A	N/A	Completed	176	388
Hastings Non-MS4	HAS-2	FDOT 4 Laning of SR 207	Wet Pond (1", 14 days)	12	Completed	7	15
Hastings Non-MS4	HAS-3	FDOT 4 Laning of SR 207 from CR 305 to Cypress Link Blvd	Wet Pond (1", 14 days)	106	Completed	65	143
Hastings Non-MS4	HAS-4	Atmospheric Deposition Load Reduction – Seminole Electric SCR Upgrade	N/A	N/A	Completed	54	119
Hastings Non-MS4	N/A	Total Project Reductions	N/A	N/A	N/A	302	664
Hastings Non-MS4	N/A	Credit/(Deficit)	N/A	N/A	N/A	125	275

Name of Facility
Load Allocation (kg/yr)
Putnam County Non-MS433,976

Lead Entity	Project Number	Project Description	Project Type	Acres Treated	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
Putnam Non-MS4	N/A	Total Reduction Required	N/A	N/A	N/A	9,639	21,206
Putnam Non-MS4	PUT-1	Trade with Putnam Lanes WWTF	N/A	N/A	Completed	50	110
Putnam Non-MS4	PUT-2	Trade with Hiawatha WWTF	N/A	N/A	Completed	150	330
Putnam Non-MS4	PUT-3	Septic Tank Phase-Out	N/A	N/A	05/31/2015	705	1,551
Putnam Non-MS4	PUT-4	Edgefield RST O&M Value	N/A	N/A	Completed	594	1,307
Putnam Non-MS4	PUT-5	FDOT Construction of 7 New Wet Ponds on SR15 from Clay County Line to South of Gordon Wilkins Rd	Wet Pond (1", 14 days)	1,181	Completed	723	1,591
Putnam Non-MS4	PUT-6	Algal Initiative	N/A	N/A	10/31/2017	1,943	4,275
Putnam Non-MS4	PUT-7	Atmospheric Deposition Load Reduction – Seminole Electric SCR Upgrade	N/A	N/A	Completed	4,056	8,923
Putnam Non-MS4	PUT-8	Education and Outreach	Education	N/A	Ongoing	1,418	3,119
Putnam Non-MS4	N/A	Total Project Reductions	N/A	N/A	N/A	9,639	21,206
Putnam Non-MS4	N/A	Credit/(Deficit)	N/A	N/A	N/A	0	0

**Putnam County Non-MS4 Project Schedule
Septic Tank Phase-Out**

ACTIVITY	SCHEDULE
a. Start Date	Completed
b. Completion Date – Design	Completed
c. Completion Date – Construction	05/31/2015
d. Completion Date – Completion of Project	05/31/2015

Algal Initiative

ACTIVITY	SCHEDULE
a. Start Date	Completed
b. Completion Date – Project Assessment	Completed
c. Completion Date – Project Fundraising	10/31/2012
d. Completion Date – Construction	10/31/2017

Name of Facility

Load Allocation (kg/yr)

St. Johns County Non-MS4.....25,340

Lead Entity	Project Number	Project Description	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
SJC Non-MS4	N/A	Total Required Reduction	N/A	1,850	4,070
SJC Non-MS4	SJC-3	Stormwater Education	Ongoing	1,078	2,372
SJC Non-MS4	SJC-4	Low-Impact Development	Ongoing	Not quantified	Not quantified
SJC Non-MS4	SJC-5	Slow Release Fertilizer Ordinance	Completed	Not quantified	Not quantified
SJC Non-MS4	SJC-6	Deep Creek RST O&M Value	Completed	313	689
SJC Non-MS4	SJC-8	Atmospheric Deposition Load Reduction – Seminole Electric SCR Upgrade	Completed	1,937	4,261
SJC Non-MS4	SJC-27	Application of Freshwater Non-MS4 TN Credits to Marine Non-MS4 Section	Completed	-1,391	-3,060
SJC Non-MS4	N/A	Total Project Reductions	N/A	1,937	4,261
SJC Non-MS4	N/A	Credit/(Deficit)	N/A	87	191

Name of Facility **Load Allocation (kg/yr)**
Welaka Non-MS4.....**838**

Lead Entity	Project Number	Project Description	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
Welaka Non-MS4	N/A	Total Reduction Required	N/A	337.0	741.4
Welaka Non-MS4	WEL-1	Septic Tank Phase-Out	Completed	409.5	901.0
Welaka Non-MS4	WEL-2	Atmospheric Deposition Load Reduction – Seminole Electric SCR Upgrade	Completed	100.0	220.0
Welaka Non-MS4	N/A	Total Project Reductions	N/A	509.5	1,121.0
Welaka Non-MS4	N/A	Credit/(Deficit)	N/A	172.5	379.6

POINT SOURCE – MARINE NITROGEN ALLOCATION

Name of Facility **Wasteload Allocation (kg/yr)**
Anheuser Busch – Main Street FL0041530.....**12,418**

Lead Entity	Project Number	Project Description	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
Anheuser Busch – Main Street	N/A	Total Reduction Required	N/A	11,981	26,358
Anheuser Busch – Main Street	ANB-1	Complete Process Improvements	Completed	11,981	26,358
Anheuser Busch – Main Street	N/A	Total Project Reductions	N/A	11,981	26,358
Anheuser Busch – Main Street	N/A	Credit/(Deficit)	N/A	0	0

Name of Facility **Wasteload Allocation (kg/yr)**
City of Atlantic Beach Aggregate FL0626881.....21,188

Lead Entity	Project Number	Project Description	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
Atlantic Bch Total (Aggregate)	N/A	Total Reduction Required	N/A	28,087	61,791
Buccaneer WWTP FL0023248	AB-1	Complete Upgrade to Sequencing Batch Reactor	Completed	9,985	21,967
Main WWTP FL0038776	AB-2	Upgrade to Biological Nutrient Removal and Flow Transfer from Buccaneer WWTF	Completed	22,119	48,661
Main WWTP FL0038776	AB-3	Atlantic Beach Country Club Reclaimed Facilities	Completed	2,075	4,566
Atlantic Bch Total (Aggregate)	N/A	Total Project Reductions	N/A	34,179	75,194
Atlantic Bch Total (Aggregate)	N/A	Credit/(Deficit)	N/A	6,092	13,403

Name of Facility **Wasteload Allocation (kg/yr)**
City of Atlantic Beach MS4 FLS000012.....1,651

Lead Entity	Project Number	Project Description	Project Type	Acres Treated	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
Atlantic Bch MS4	N/A	Total Reduction Required	N/A	N/A	N/A	823	1,811
Atlantic Bch MS4 FLS000012	AB-4	Core City Capital Improvement Project: Stormwater, Sanitary Sewer, and Water Systems Upgrades	Generation Baffle Box	180	Completed	659	1,450
Atlantic Bch MS4 FLS000012	AB-5	Hopkins Creek Stormwater Treatment System	Wet Detention	53	Completed	12	26
Atlantic Bch MS4 FLS000012	AB-6	FDOT Widening of SR 10 (Atlantic Blvd) Roadway & Bridge Upgrade	Wet Pond (1", 14 days)	152	Completed	50	110
Atlantic Bch MS4 FLS000012	AB-7	FDOT Atlantic Blvd and Mayport Rd Interchange	Wet Pond (1", 14 days)	50	Completed	18	40
Atlantic Bch MS4 FLS000012	AB-8	FDOT Wonderwood Connector Segment 1 – Girvin to Sandcastle	Wet Pond (1", 14 days)	70	Completed	6	13

Lead Entity	Project Number	Project Description	Project Type	Acres Treated	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
Atlantic Bch MS4 FLS000012	AB-9	Atmospheric Deposition Load Reduction – Seminole Electric SCR Upgrade	N/A	N/A	Completed	78	172
Atlantic Bch MS4	N/A	Total Project Reductions	N/A	N/A	N/A	823	1,811
Atlantic Bch MS4	N/A	Credit/(Deficit)	N/A	N/A	N/A	0	0

Name of Facility
Wasteload Allocation (kg/yr)
City of Jacksonville/FDOT MS4 FLS000012.....96,016

¹ The load reductions associated with septic tank phase-out have been revised based on the Florida State University septic tank model. While the estimates may be further refined based on acceptable site-specific information, new estimates have been established and the septic tank study is complete.

² Additional projects and/or water quality credit trades must be completed by the due date for the septic tank phase-out project, which is December 31, 2023.

Lead Entity	Project Number	Project Description	Project Type	Acres Treated	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
COJ MS4 FLS000012	N/A	Total Reduction Required	N/A	N/A	N/A	147,422	324,328
COJ MS4 FLS000012	COJ-1	Big Fishweir Creek-Murray Hill Phase I – Drainage Improvements	2nd Generation Baffle Box	219	Completed	80	176
COJ MS4 FLS000012	COJ-2	Sixmile Creek-West 1st Street/Melson Avenue – Drainage Improvements	Wet Detention	254	Completed	470	1,034
COJ MS4 FLS000012	COJ-3	McCoys Creek Pond A & B	Wet Detention	680	Completed	750	1,650
COJ MS4 FLS000012	COJ-4	McCoys Creek Pond F	Wet Detention	11	Completed	10	22
COJ MS4 FLS000012	COJ-5	Riverside Ave – Baffle Boxes	2nd Generation Baffle Box	70	Completed	40	88
COJ MS4 FLS000012	COJ-6	St Augustine Rd (Emerson to US 1) – Regional Pond Facilities	Wet Detention	167	Completed	200	440
COJ MS4 FLS000012	COJ-7	Powers Ave/Old Kings Rd – Regional Pond Facilities	Wet Detention	520	Completed	620	1,364
COJ MS4 FLS000012	COJ-8	Fouraker Rd – from Old Middleburg Rd to Normandy Blvd Regional Pond Facilities	Wet Detention	32	Completed	40	88
COJ MS4 FLS000012	COJ-9	Greenland Rd – from St. Augustine Rd to Coastal Lane – Detention Pond Facilities	Wet Detention	33	Completed	30	66
COJ MS4 FLS000012	COJ-10	Barnes Rd – from University Blvd to Parental Home Rd – Detention Pond Facilities	Wet Detention	97	Completed	20	44
COJ MS4 FLS000012	COJ-11	Emerson St – from Emerson St Expwy to Spring Glenn Rd – Detention Pond Facility	Wet Detention	17	Completed	20	44
COJ MS4 FLS000012	COJ-12	Bowden Rd – from US 1 to Salisbury Rd – Detention Pond Facilities	Wet Detention	98	Completed	130	286
COJ MS4 FLS000012	COJ-13	Parental Home Rd Phase I (Bowden Rd from Salisbury Rd to Dean Rd) – Detention Pond Facility	Wet Detention	28	Completed	20	44

Lead Entity	Project Number	Project Description	Project Type	Acres Treated	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
COJ MS4 FLS000012	COJ-14	Parental Home Rd Phase II (Beach Blvd to Ibach Rd) Detention Pond Facility	Wet Detention	82	Completed	10	22
COJ MS4 FLS000012	COJ-15	Lorretto Rd from S.R. 13 to Old St. Augustine Rd – Detention Pond Facilities	Wet Detention	55	Completed	50	110
COJ MS4 FLS000012	COJ-16	Belford Rd-Pottsburg Ck. to Touchton Rd. Detention Pond Facilities	Wet Detention	20	Completed	10	22
COJ MS4 FLS000012	COJ-17	Royal Terrace Phases A+B+C+D+E+1+2+3+4 – Master Pond Facility	Wet Detention	332	Completed	410	902
COJ MS4 FLS000012	COJ-18	University Pointe Regional Pond Facility	Wet Detention	102	Completed	150	330
COJ MS4 FLS000012	COJ-19	Cleveland Rd – Phase I-B Wet Detention Pond	Wet Detention	269	Completed	150	330
COJ MS4 FLS000012	COJ-20	Hogan Creek	Wet Detention	48	Completed	50	110
COJ MS4 FLS000012	COJ-21	McCoy Creek Pond D	Wet Detention	27	Completed	30	66
COJ MS4 FLS000012	COJ-22	Upper Deer Creek Regional Stormwater Facility	Wet Detention	537	Completed	840	1,848
COJ MS4 FLS000012	COJ-23	Hugh Edwards Canal	Wet Detention	329	Completed	760	1,672
COJ MS4 FLS000012	COJ-24	Cedar River Outfall Improvements	Wet Detention	1,452	Completed	530	1,166
COJ MS4 FLS000012	COJ-25	Sandalwood Canal	Wet Detention	3,118	Completed	880	1,936
COJ MS4 FLS000012	COJ-26	Moncrief Creek	Wet Detention	619	Completed	650	1,430
COJ MS4 FLS000012	COJ-27	Lincoln Villas-East Side – Regional Pond Facility	Wet Detention	185	Completed	100	220
COJ MS4 FLS000012	COJ-28	Old Middleburg Rd from Wilson Blvd to 103 rd St – Regional Pond Facilities	Wet Detention	192	Completed	210	462
COJ MS4 FLS000012	COJ-29	Lakeshore Woodcrest Drainage Improvement	Wet Detention	296	Completed	440	968
COJ MS4 FLS000012	COJ-30	Townsend Rd Drainage improvements	Wet Detention	151	Completed	60	132
COJ MS4 FLS000012	COJ-31	Lenox Ave (Highway to McDuff)	Wet Detention	108	Completed	180	396

Lead Entity	Project Number	Project Description	Project Type	Acres Treated	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
COJ MS4 FLS000012	COJ-32	Wesconnett Blvd (Blanding to Blanding)	Wet Detention	396	Completed	40	88
COJ MS4 FLS000012	COJ-33	Durkeeville West	Wet Detention	106	Completed	160	352
COJ MS4 FLS000012	COJ-34	Huffman Blvd	Wet Detention	16	Completed	20	44
COJ MS4 FLS000012	COJ-35	Spring Park Rd/Emerson to University	Wet Detention	36	Completed	50	110
COJ MS4 FLS000012	COJ-36	Barnes Rd/Kennerly to University	Wet Detention	418	Completed	720	1,584
COJ MS4 FLS000012	COJ-37	Pritchard Rd (Jones to Interstate (I) 295)	Wet Detention	116	Completed	0	0
COJ MS4 FLS000012	COJ-38	Lenox, Lane to Normandy	Wet Detention	47	Completed	30	66
COJ MS4 FLS000012	COJ-39	Cahoon Rd, Phase I	Wet Detention	23	Completed	20	44
COJ MS4 FLS000012	COJ-40	Pulaski Rd (Eastport Dr to New Berlin Rd)	Wet Detention	19	Completed	20	44
COJ MS4 FLS000012	COJ-41	Lamoya Roadway Project	Wet Detention	17	Completed	0	0
COJ MS4 FLS000012	COJ-42	LSJR Upstream of Trout River	Wet Detention	3,141	12/31/2023	1,292	2,842
COJ MS4 FLS000012	COJ-43	Ortega River	Wet Detention	7,169	12/31/2023	15	33
COJ MS4 FLS000012	COJ-44	Arlington River	Wet Detention	3,352	12/31/2023	1,137	2,501
COJ MS4 FLS000012	COJ-45	LSJR Downstream of Trout River	Wet Detention	514	12/31/2023	579	1,274
COJ MS4 FLS000012	COJ-46	Intracoastal Waterway	Wet Detention	7,646	12/31/2023	0	0
COJ MS4 FLS000012	COJ-47	Julington Creek	Wet Detention	4,404	12/31/2023	128	282
COJ MS4 FLS000012	COJ-48	Trout River	Wet Detention	5,329	12/31/2023	1,065	2,343
COJ MS4 FLS000012	COJ-49	Broward River	Wet Detention	837	12/31/2023	0	0
COJ MS4 FLS000012	COJ-50	Dunn Creek	Wet Detention	1,300	12/31/2023	631	1,388

Lead Entity	Project Number	Project Description	Project Type	Acres Treated	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
COJ MS4 FLS000012	COJ-51	Public Education Activities	N/A	N/A	Ongoing	13,146	28,920
COJ MS4 FLS000012	COJ-121	Street Sweeping	Street Sweeping	N/A	Ongoing	5,553	12,217
COJ MS4 FLS000012	COJ-52	Septic Tank Phase-Out Projects ¹	Septic Tank Phase-Out	N/A	12/31/2023	6,200	13,640
COJ MS4 FLS000012	COJ-123	Lateral Only Connection (LOC) Septic Tank Phase-Out Projects	Septic Tank Phase-Out	N/A	07/31/2015	1,660	3,652
COJ MS4 FLS000012	COJ-124	Better Jacksonville Plan Septic Tank Phase-Out Projects	Septic Tank Phase-Out	N/A	Completed	2,936	6,459
COJ MS4 FLS000012	COJ-122	Future Projects and/or Trades ²	To Be Determined	N/A	06/30/2023	82,423	181,331
COJ MS4 FLS000012	COJ-53	Atmospheric Deposition Load Reduction – Seminole Electric SCR Upgrade	N/A	N/A	Completed	6,926	15,237
COJ MS4 FLS000012	N/A	City of Jacksonville Projects Subtotal	N/A	N/A	N/A	132,691	291,919
COJ MS4 FLS000012	COJ-54	FDOT Urban Office Reconstruction	Dry Retention w/ Underdrain	7	Completed	9	20
COJ MS4 FLS000012	COJ-55	FDOT Fort George Inlet Bridge	Wet Pond (1", 14 days)	18	Completed	6	13
COJ MS4 FLS000012	COJ-56	FDOT Widening of Riverside Area	Wet Pond (1", 14 days)	14	Completed	5	11
COJ MS4 FLS000012	COJ-57	FDOT Widening of Merrill Rd between Wompi Dr and Milcoe Rd	Wet Pond (1", 14 days)	58	Completed	21	46
COJ MS4 FLS000012	COJ-58	FDOT Widening of Merrill Rd between 9A and Wompi Dr	Wet Pond (1", 14 days)	69	Completed	25	55
COJ MS4 FLS000012	COJ-59	FDOT Widening of SR 13 to 6 Lane Divided Highway	Wet Pond (1", 14 days)	174	Completed	63	139
COJ MS4 FLS000012	COJ-60	FDOT Bch Blvd Widening from Intracoastal Waterway to E. of Penman	Wet Pond (1", 14 days)	25	Completed	9	20
COJ MS4 FLS000012	COJ-61	FDOT I-295 and SR 21 (Blanding) Interchange Upgrade	Wet Pond (1", 14 days)	42	Completed	15	33
COJ MS4 FLS000012	COJ-62	FDOT I-295 and SR 17 (Blanding) Interchange Expansion	Wet Pond (1", 14 days)	96	Completed	35	77
COJ MS4 FLS000012	COJ-63	FDOT JTB/Belfort Rd Interchange	Wet Pond (1", 14 days)	155	Completed	56	123

Lead Entity	Project Number	Project Description	Project Type	Acres Treated	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
COJ MS4 FLS000012	COJ-64	FDOT Pine Avenue Sidewalk	Dry Retention (1")	7	Completed	9	20
COJ MS4 FLS000012	COJ-65	FDOT 9A from Baymeadows Rd to I-95	Wet Pond (1", 14 days)	550	Completed	200	440
COJ MS4 FLS000012	COJ-66	FDOT Widening of I-95 from St. Johns County Line to 9A/I-295	Wet Pond (1", 14 days)	175	Completed	64	141
COJ MS4 FLS000012	COJ-67	FDOT Widening of I-95 from I-295 to South of JTB	Wet Pond (1", 14 days)	441	Completed	160	352
COJ MS4 FLS000012	COJ-68	FDOT Widening of SR 10 (Atlantic Blvd from St. Johns Bluff to San Pablo)	Wet Pond (1", 14 days)	1096	Completed	397	873
COJ MS4 FLS000012	COJ-69	FDOT Widening of Southside Blvd	Dry Retention	146	Completed	53	117
COJ MS4 FLS000012	COJ-70	FDOT New JTB/9A Interchange	Detention/ Retention (1")	339	Completed	442	972
COJ MS4 FLS000012	COJ-71	FDOT Southside (SR 115) Frontage Rd	Wet Pond (1", 14 days)	8	Completed	3	7
COJ MS4 FLS000012	COJ-72	FDOT I-95 Improvement - from I-295 to Nassau County Line South Project	Wet Pond (1", 14 days)	291	Completed	105	231
COJ MS4 FLS000012	COJ-73	FDOT I-95 Improvement – S. of Clarke Rd to I-295	Wet Pond (1", 14 days)	94	Completed	34	75
COJ MS4 FLS000012	COJ-74	FDOT 9A Improvement - South Project	Wet Pond (1", 14 days)	176	Completed	64	141
COJ MS4 FLS000012	COJ-75	FDOT 9A from South of Atlantic to Beach Blvd	Wet Pond (1", 14 days)	124	Completed	45	99
COJ MS4 FLS000012	COJ-76	FDOT I-295/I-95/9A Interchange	Wet Pond (1", 14 days)	580	Completed	200	440
COJ MS4 FLS000012	COJ-77	FDOT Branan Field Chafee Roadway Project	Wet Pond (1", 14 days)	187	Completed	115	253
COJ MS4 FLS000012	COJ-78	FDOT Wonderwood Connector Segment 1 Project Girvin to Sandcastle	Wet Pond (1", 14 days)	70	Completed	19	42
COJ MS4 FLS000012	COJ-79	FDOT JIA South Access Connector Project	Dry Detention	63	Completed	82	180
COJ MS4 FLS000012	COJ-80	FDOT I-95 Widening from Lem Turner to I-295 Project	Wet Pond (1", 14 days)	117	Completed	42	92
COJ MS4 FLS000012	COJ-81	FDOT 4 Laning of SR 13	Wet Pond (1", 14 days)	105	Completed	38	84

Lead Entity	Project Number	Project Description	Project Type	Acres Treated	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
COJ MS4 FLS000012	COJ-82	FDOT SR 21 Widening from S. of Cedar River to E. of Cassat	Wet Pond (1", 14 days)	19	Completed	7	15
COJ MS4 FLS000012	COJ-83	FDOT Arlington Expressway Project	Unknown	27	Completed	10	22
COJ MS4 FLS000012	COJ-84	FDOT Merrill Rd Southside Blvd Interchange Project	Wet Pond (1", 14 days)	15	Completed	5	11
COJ MS4 FLS000012	COJ-85	FDOT Baymeadows Project from East of US 1 to SR 13	Wet Pond (1", 14 days)	35	Completed	9	20
COJ MS4 FLS000012	COJ-86	FDOT SR 115/8 th St Project	Wet Pond (1", 14 days)	31	Completed	11	24
COJ MS4 FLS000012	COJ-87	FDOT SR 115/8 th St Project	Wet Pond (1", 14 days)	4	Completed	1	2
COJ MS4 FLS000012	COJ-88	FDOT JTB from I-95 to Gate Parkway Project	Wet Pond (1", 14 days)	58	Completed	21	46
COJ MS4 FLS000012	COJ-89	FDOT I-295 from West of Duval to Biscayne Blvd	Wet Pond (1", 14 days)	20	Completed	7	15
COJ MS4 FLS000012	COJ-90	FDOT Beaver Street (US 90) Project from Stockton to Tyler	Wet Pond (1", 14 days)	7	Completed	3	7
COJ MS4 FLS000012	COJ-91	FDOT 9A from Baymeadows to JTB Project	Wet Pond (1", 14 days)	195	Completed	71	156
COJ MS4 FLS000012	COJ-92	FDOT JTB/A1A Interchange Project	Wet Pond (1", 14 days)	20	Completed	3	7
COJ MS4 FLS000012	COJ-93	FDOT Southside Blvd/I-95 Connector	Dry Retention (1")	76	Completed	99	218
COJ MS4 FLS000012	COJ-94	FDOT Beach Blvd Improvement from West of FCCJ to East of San Pablo	Wet Pond (1", 14 days)	165	Completed	60	132
COJ MS4 FLS000012	COJ-95	FDOT Widening of SR 13	Unknown	227	Completed	82	180
COJ MS4 FLS000012	COJ-96	FDOT Branan Field Chafee Roadway Project (Argyle Forrest to 103 rd)	Wet Pond (1", 14 days)	112	Completed	40	88
COJ MS4 FLS000012	COJ-97	FDOT Branan Field Chafee Roadway Project (103 rd to I-10)	Wet Pond (1", 14 days)	150	Completed	55	121
COJ MS4 FLS000012	COJ-98	FDOT Southside (SR 115) & Beach Blvd (SR 202) Interchange & Road Widening	Wet Pond (1", 14 days)	33	Completed	12	26
COJ MS4 FLS000012	COJ-99	FDOT Wonderwood Connector Segment 2	Wet Pond (1", 14 days)	58	Completed	21	46

Lead Entity	Project Number	Project Description	Project Type	Acres Treated	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
COJ MS4 FLS000012	COJ-100	FDOT JTB/Kernan Project	Wet Pond (1", 14 days)	65	Completed	24	53
COJ MS4 FLS000012	COJ-101	FDOT I-95 from JTB to Emerson	Dry Retention (1")	105	Completed	137	301
COJ MS4 FLS000012	COJ-102	FDOT Heckscher Dr / 9a Interchange-1 DRS	Dry Retention (1")	103	Completed	89	196
COJ MS4 FLS000012	COJ-103	FDOT Heckscher Dr / 9a Interchange-2 WDS	Wet Pond (1", 14 days)	68	Completed	25	55
COJ MS4 FLS000012	COJ-104	FDOT Wonderwood Segment 3 Project	Wet Pond (1", 14 days)	69	Completed	25	55
COJ MS4 FLS000012	COJ-105	FDOT Collins Rd Collector Distributor	Wet Pond (1", 14 days)	142	Completed	51	112
COJ MS4 FLS000012	COJ-106	FDOT JTB / I-95 Ramp Project (40-031-18233-6)	Wet Pond (1", 14 days)	54	Completed	20	44
COJ MS4 FLS000012	COJ-107	FDOT SR 5 US 1 Project (209516-3-52-01)	Wet Pond (1", 14 days)	27	Completed	10	22
COJ MS4 FLS000012	COJ-108	FDOT 4 Laning of SR 207	Wet Pond (1", 14 days)	12	Completed	7	15
COJ MS4 FLS000012	COJ-109	FDOT 4 Laning of SR 207 from CR 305 to Cypress Link Blvd	Wet Pond (1", 14 days)	106	Completed	65	143
COJ MS4 FLS000012	COJ-110	FDOT 4 Laning of SR207 from SR 15 (US 17) to CR 207	Wet Pond (1", 14 days)	538	Completed	330	726
COJ MS4 FLS000012	COJ-111	FDOT 6 Laning of I-95 from Flagler County Line to SR 16	Wet Pond (1", 14 days)	800	Completed	255	561
COJ MS4 FLS000012	COJ-112	FDOT I-95 Rest Area Reconstruction	Wet Pond (1", 14 days)	52	Completed	17	37
COJ MS4 FLS000012	COJ-113	FDOT 6 Laning of I-95 from World Golf Village to Duval County Line	Wet Pond (1", 14 days)	537	Completed	237	521
COJ MS4 FLS000012	COJ-114	FDOT Widening of SR 16	Swale Treatment System	68	Completed	22	48
COJ MS4 FLS000012	COJ-115	FDOT SR 207 from I-95 to SR 312	Wet Pond (1", 14 days)	102	Completed	33	73
COJ MS4 FLS000012	COJ-116	FDOT SR 207 from SR 312 to US 1	Wet Pond (1", 14 days)	536	Completed	171	376
COJ MS4 FLS000012	COJ-117	FDOT Stormwater Education Efforts in St. Johns County	N/A	N/A	Ongoing	286	629
COJ MS4 FLS000012	COJ-118	FDOT Education Efforts in City of Jacksonville	N/A	N/A	Ongoing	1,461	3,214

Lead Entity	Project Number	Project Description	Project Type	Acres Treated	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
COJ MS4 FLS000012	COJ-119	Atmospheric Deposition Load Reduction – Seminole Electric SCR Upgrade	N/A	N/A	Completed	769	1,692
COJ MS4 FLS000012	COJ-120	FDOT Future Projects and/or Trade (Fertilizer Cessation)	N/A	N/A	Completed	18,445	40,663
COJ MS4 FLS000012	N/A	FDOT Projects Subtotal	N/A	N/A	N/A	25,312	55,768
COJ MS4 FLS000012	N/A	Total Project Reductions	N/A	N/A	N/A	158,003	347,687
COJ MS4 FLS000012	N/A	Credit/(Deficit)	N/A	N/A	N/A	10,581	23,359

**City of Jacksonville Schedule
Future City of Jacksonville Stormwater Projects**

Project	Schedule
a. Start Date	Completed
b. Completion Date – Attain 50% of Required Reduction	07/31/2015
c. Completion Date – Completion of Project	12/31/2023

Septic Tank Phase-Out Projects

Project	Schedule
a. Start Date	Completed
b. Completion Date - Phase Out 50% of Septic Tanks	07/31/2015
c. Completion Date – Completion of Project	12/31/2023

Name of Facility
City of Jacksonville Beach WWTF FL002031**21,015**

Lead Entity	Project Number	Project Description	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
Jax Bch WWTF	N/A	Total Reduction Required	N/A	19,135	42,097
Jax Bch WWTF FL002031	JB-1	Upgrade WWTF to Advanced Wastewater Treatment for TN removal	Completed	21,555	47,421
Jax Bch WWTF	N/A	Total Project Reductions	N/A	21,555	47,421
Jax Bch WWTF	N/A	Credit/(Deficit)	N/A	2,420	5,324

Name of Facility
City of Jacksonville Beach MS4 FLS000013.....**4,804**

Lead Entity	Project Number	Project Description	Acres Treated	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
Jax Bch MS4	N/A	Total Reduction Required	N/A	N/A	170	374
Jax Bch MS4 FLS000013	JB-2	FDOT Beach Blvd Widening (Pond 2)	38.87	Completed	14	31
Jax Bch MS4 FLS000013	JB-3	Atmospheric Deposition Load Reduction – Seminole Electric SCR Upgrade	N/A	Completed	156	343
Jax Bch MS4	N/A	Total Project Reductions	N/A	N/A	170	374
Jax Bch MS4	N/A	Credit/(Deficit)	N/A	N/A	0	0

Name of Facility
City of Neptune Beach WWTF FL0020427.....**6,162**

Lead Entity	Project Number	Project Description	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
Neptune Beach WWTF FL0020427	N/A	Total Reduction Required	N/A	5,286	11,629
Neptune Beach WWTF FL0020427	NB-1	Complete Process Improvements	Completed	7,322	16,108
Neptune Beach WWTF FL0020427	N/A	Total Project Reductions	N/A	7,322	16,108
Neptune Beach WWTF FL0020427	N/A	Credit/(Deficit)	N/A	2,036	4,479

Name of Facility **Wasteload Allocation (kg/yr)**
City of Neptune Beach MS4 FLS000012.....1,437

Lead Entity	Project Number	Project Description	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
Neptune Beach MS4	N/A	Total Reduction Required	N/A	47	103
Neptune Beach MS4	NB-2	Atmospheric Deposition Load Reduction – Seminole Electric SCR Upgrade	Completed	47	103
Neptune MS4	N/A	Total Project Reductions	N/A	47	103
Neptune MS4	N/A	Credit/(Deficit)	N/A	0	0

Name of Facility **Wasteload Allocation (kg/yr)**
Clay County MS4 FLR04E045.....21,188

Lead Entity	Project Number	Project Description	Project Type	Acres Treated	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
CC MS4 FLR04E045	N/A	Total Reduction Required	N/A	N/A	N/A	4,061	8,934
CC MS4 FLR04E045	CC-9	Wells Rd Improvements	Wet Detention Pond	120	Completed	9	20
CC MS4 FLR04E045	CC-10	CR 224 Phase I	Wet Detention Pond	70	Completed	38	84
CC MS4 FLR04E045	CC-11	CR 224 Phase II	Wet Detention Pond	140	Completed	68	150
CC MS4 FLR04E045	CC-12	Education Program	N/A	N/A	Ongoing	1,010	2,222
CC MS4 FLR04E045	CC-13	FDOT Construction of Stormwater Management Systems for Clay County Recreational Trail on SR 15	Retention/ Detention (1")	69	Completed	90	198
CC MS4 FLR04E045	CC-14	FDOT SR 15 Widening @ Fleming Island	Retention/ Detention (1")	606	Completed	1,336	2,939
CC MS4 FLR04E045	CC-15	FDOT SR 15 Widening @ Fleming Island from Village Sq Park Rd to South of Margaret's Walk Rd	Retention/ Detention (1")	301	Completed	664	1,461
CC MS4 FLR04E045	CC-16	Atmospheric Deposition Load Reduction – Seminole Electric SCR Upgrade	N/A	N/A	Completed	846	1,861
CC MS4 FLR04E045	CC-20	CR 729 Widening from CR 218 to Black Creek Bridge	Wet Detention Pond	23	Completed	45	99

Lead Entity	Project Number	Project Description	Project Type	Acres Treated	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
CC MS4 FLR04E045	CC-21	Old Jennings Rd Widening from Blanding Blvd to Branam Field Rd	Wet Detention Pond	N/A	Completed	17	37
CC MS4 FLR04E045	CC-22	College Drive Ponds A and B	Wet Detention Pond	N/A	Completed	Not quantified	Not quantified
CC MS4 FLR04E045	N/A	Total Project Reductions	N/A	N/A	N/A	4,123	9,070
CC MS4 FLR04E045	N/A	Credit/(Deficit)	N/A	N/A	N/A	62	136

Name of Facility

Wasteload Allocation (kg/yr)

Clay County Utility Authority Aggregate FL0629006.....63,963

Lead Entity	Project Number	Project Description	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
CCUA Total Facilities	N/A	Total Reduction Required	N/A	-2,394	-5,267
Fleming Island WWTF FL0043834	CCUA-1	Upgrade to A Prototype Realistic Innovative Community of Today (APRICOT) and Reuse	Completed	18,195	40,029
Miller Street WWTF FL0025151	CCUA-2	Reuse Water Upgrades Including Spencer WWTP	Completed	16,209	35,670
Miller Street WWTF FL0025151	CCUA-3	WWTF Improvements to Meet APRICOT Standards	Completed	10,335	22,737
CCUA Total Facilities	N/A	Total Project Reductions	N/A	44,739	98,426
CCUA Total Facilities	N/A	Credit/(Deficit)	N/A	47,133	103,693

Name of Facility**Wasteload Allocation (kg/yr)****JEA Aggregate FL0620564.....654,672**

Lead Entity	Project Number	Project Description	Construction Complete	Achieve Operational Effectiveness	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
JEA Total Facilities	N/A	Total Reduction Required	N/A	N/A	741,951	1,632,292
JEA Julington Creek FL0043591	JEA-1	Complete Process Improvements	Completed	N/A	5,909	13,000
JEA Arlington East FL0026441	JEA-2	Complete Process Improvements	Completed	N/A	92,727	204,000
JEA District II FL0026450	JEA-3	Complete Process Improvements	Completed	N/A	140,000	308,000
JEA Southwest FL0026468	JEA-4	Complete Process Improvements	Completed	N/A	45,909	101,000
JEA Buckman FL0026000	JEA-5	Complete Process Improvements	Completed	N/A	50,455	111,000
JEA Monterey FL00230604	JEA-6	Complete Process Improvements	Completed	N/A	35,455	78,001
JEA Mandarin FL0023493	JEA-7	Complete Process Improvements	Completed	N/A	12,726	27,997
JEA San Pablo FL0024767	JEA-8	Complete Phase-Out	Completed	N/A	6,364	14,001
JEA Woodmere FL0026786	JEA-9	Complete Phase-Out	Completed	N/A	10,000	22,000
JEA Beacon Hills FL0026778	JEA-10	Complete Phase-Out	Completed	Completed	5,700	12,540
JEA Royal Lakes FL0026751	JEA-11	Complete Phase-Out	Completed	Completed	0	0
JEA Jax Heights FL0023671	JEA-12	Complete Phase-Out	Completed	Completed	0	0
JEA Arlington East FL0026441	JEA-13	Complete Process Improvements	Completed	Completed	118,172	259,978
JEA District II FL0026450	JEA-14	Complete Process Improvements	7/31/2015	7/31/2015	39,700	87,340
JEA San Jose FL0023663	JEA-15	Complete Phase-Out	Completed	Completed	0	0
JEA Buckman FL0026000	JEA-16	Complete Process Improvements	Completed	Completed	191,183	420,603
JEA Facilities	JEA-17	Reuse Expansion (approximately 10 million gallons per day) at Arlington East, Mandarin, and District II	Completed	Completed	59,090	129,998
JEA Total Facilities	N/A	Total Project Reductions	N/A	N/A	813,390	1,789,458
JEA Total Facilities	N/A	Credit/(Deficit)	N/A	N/A	71,439	157,166

Name of Facility**Wasteload Allocation (kg/yr)****Smurfit-Stone Container FL000400.....74,305**

Lead Entity	Project Number	Project Description	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
Smurfit-Stone	N/A	Total Reduction Required	N/A	71,684	157,705
Smurfit-Stone	SS-1	Complete Process Improvements	Completed	71,684	157,705
Smurfit-Stone	N/A	Total Project Reductions	N/A	71,684	157,705
Smurfit-Stone	N/A	Credit/(Deficit)	N/A	0	0

Name of Facility**Wasteload Allocation (kg/yr)****St. Johns County MS4 FLR04E025.....746**

* This project is located in the freshwater reach. The trading ratio from the freshwater reach to marine reach is 1:1. This project is currently under construction.

Lead Entity	Project Number	Project Description	Project Type	Acres Treated	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
SJC MS4 FLR04E025	N/A	Starting Load	N/A	N/A	N/A	2,311	5,084
SJC MS4 FLR04E025	SJC-11	Stormwater Education	Education	N/A	Ongoing	153	337
SJC MS4 FLR04E025	SJC-12	Low-Impact Development	N/A	N/A	Ongoing	Not quantified	Not quantified
SJC MS4 FLR04E025	SJC-13	Slow Release Fertilizer Ordinance	N/A	N/A	Completed	Not quantified	Not quantified
SJC MS4 FLR04E025	SJC-14	FDOT 4 Laning of SR 312	Wet Pond (1", 14 days)	38	Completed	14	31
SJC MS4 FLR04E025	SJC-15	FDOT A1A Stormwater Retrofit from Duval County Line to Thousand Oaks Lane	Dry Detention	98	Completed	216	475
SJC MS4 FLR04E025	SJC-16	Atmospheric Deposition Load Reduction – Seminole Electric SCR Upgrade	N/A	N/A	Completed	60	132
SJC MS4 FLR04E025	SJC-17	Algal Initiative – Masters Tract RST Facility*	Wet Pond, Treatment Wetland	N/A	10/31/2017	1,868	4,109
SJC MS4 FLR04E025	N/A	Total Project Reductions	N/A	N/A	N/A	2,311	5,084
SJC MS4 FLR04E025	N/A	Credit/(Deficit)	N/A	N/A	N/A	0	0

St. Johns County MS4 Schedule

Algal Initiative	Schedule
a. Start Date of Project	Completed
b. Completion Date – Project Assessment	Completed
c. Completion Date – Project Fundraising	10/31/2012
d. Completion Date – Construction	10/31/2017

Name of Facility **Wasteload Allocation (kg/yr)**
Town of Orange Park WWTF FL0023922.....7,940

Lead Entity	Project Number	Project Description	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
Orange Park WWTF	N/A	Total Reduction Required	N/A	16,946	37,281
Ash Street WWTF FL0023922	OP-1	Phase 1 Improvements	Completed	15,953	35,097
Ash Street WWTF FL0023922	OP-2	Phase 2 Improvements	Completed	6,942	15,272
Orange Park WWTF	N/A	Total Project Reductions	N/A	22,885	50,369
Orange Park WWTF	N/A	Credit/(Deficit)	N/A	5,939	13,088

Name of Facility **Wasteload Allocation (kg/yr)**
Town of Orange Park MS4 FLR04E075.....3,348

Lead Entity	Project Number	Project Description	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
Orange Park MS4	N/A	Total Reduction Required	N/A	103	227
Orange Park MS4	OP-4	Atmospheric Deposition Load Reduction – Seminole Electric SCR Upgrade	Completed	103	227
Orange Park MS4	N/A	Total Project Reductions	N/A	103	227
Orange Park MS4	N/A	Credit/(Deficit)	N/A	0	0

Name of Facility **Wasteload Allocation (kg/yr)**
U.S. Navy Aggregate FL0639451.....11,684

Lead Entity	Project Number	Project Description	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
USN Total (Aggregate)	N/A	Total Reduction Required	N/A	30,345	66,759
NAS Jax WWTF FL0000957	USN-1	Reuse to Timuquana Country Club	Completed	7,693	16,925
NAS Jax WWTF FL0000957	USN-2	Expand Reuse System	Completed	2,790	6,138
NAS Jax WWTF FL0000957	USN-3	Inflow/Infiltration Repair Projects	Completed	2,790	6,138
NS Mayport WWTF FL0000922	USN-4	Inflow/Infiltration Repair Projects	Completed	5,753	12,657
NS Mayport WWTF FL0000922	USN-5	Modifications to Mayport WWTF	10/01/2015	11,319	24,901
USN Total (Aggregate)	N/A	Total Project Reductions	N/A	30,345	66,759
USN Total (Aggregate)	N/A	Credit/(Deficit)	N/A	0	0

**U.S. Navy Aggregate Schedule
Modifications to Mayport WWTF**

Projects	Schedule
a. Start Date	Completed
b. Completion Date – Design	02/01/2017
c. Begin Construction	08/01/2017
d. End Construction	11/01/2019
e. Operational Level Attained	02/01/2020

Name of Facility **Wasteload Allocation (kg/yr)**
U.S. Navy MS4s FLR04E091 and FLR04E056.....7,232

Lead Entity	Project Number	Project Description	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
USN MS4s	N/A	Total Reduction Required	N/A	298	656
USN MS4	USN-6	Atmospheric Deposition Load Reduction – Seminole Electric SCR Upgrade	Completed	298	656
USN MS4	N/A	Total Project Reductions	N/A	298	656
USN MS4	N/A	Credit/(Deficit)	N/A	0	0

Name of Facility **Load Allocation (kg/yr)**
Camp Blanding Non-MS41,220

Lead Entity	Project Number	Project Description	Project Type	Acres Treated	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
Camp Blanding	N/A	Total Reduction Required	N/A	N/A	N/A	1,650	3,630
Camp Blanding	CB-1	Regrade Existing Swale System (completed through 2013)	Swales	N/A	Completed	706	1,552
Camp Blanding	CB-2	Atmospheric Deposition Load Reduction – Seminole Electric SCR Upgrade	N/A	N/A	Completed	98	216
Camp Blanding	CB-3	Completed stormwater projects	Retention	32.5	Completed	48	105
Camp Blanding	CB-4	Re-grade existing swale system(80 miles)	Swales	N/A	09/30/2017	800	1,760
Camp Blanding	N/A	Total Project Reductions	N/A	N/A	N/A	1,652	3,633
Camp Blanding	N/A	Credit/(Deficit)	N/A	N/A	N/A	2	3

Camp Blanding Non-MS4 Schedule

Regrade Existing Swale System	Schedule
a. Start Date of Project	October 1, 2014
b. Completion – 19 miles of swales plus 2 additional miles per consent letter	September 30, 2015
c. Completion – 27 miles of swales plus 3 additional miles per consent letter	September 30, 2016
d. Completion – 42 miles of swales plus 3 additional miles per consent letter	September 30, 2017
f. Completion– Completion of Project	September 30, 2017

Name of Facility

Load Allocation (kg/yr)

Clay County Non-MS4.....11,107

Lead Entity	Project Number	Project Description	Project Type	Acres Treated	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
CC Non-MS4	N/A	Total Reduction Required	N/A	N/A	N/A	944	2,077
CC Non-MS4	CC-17	Education Program	N/A	N/A	Ongoing	482	1,060
CC Non-MS4	CC-18	FDOT SR 23 Improvement from Kindewood Rd to Duval County Line – 5 Systems	Wet Pond (1", 14 days)	112	Completed	69	152
CC Non-MS4	CC-19	Atmospheric Deposition Load Reduction – Seminole Electric SCR Upgrade	N/A	N/A	Completed	393	865
CC Non-MS4	N/A	Total Project Reductions	N/A	N/A	N/A	944	2,077
CC Non-MS4	N/A	Credit/(Deficit)	N/A	N/A	N/A	0	0

Name of Facility
St. Johns County Non-MS4..... 4,865 kg/yr
Load Allocation (kg/yr)

* This project is located in the freshwater reach. The trading ratio from the freshwater reach to marine reach is 1:1. This project is currently under construction.

** Reductions are estimates pending design finalization.

Lead Entity	Project Number	Project Description	Project Type	Acres Treated	Deadline	Project TN Reduction (kg/yr)	Project TN Reduction (lbs/yr)
SJC Non-MS4	N/A	Total Reduction Required	N/A	N/A	N/A	4,981	10,958
SJC Non-MS4	SJC-17	Algal Initiative – Masters Tract RST Facility*	Wet Pond, Treatment Wetland	N/A	10/31/2017	277	609
SJC Non-MS4	SJC-18	Greenbriar Rd Paving/Improvements	Wet Ponds	40	Completed	33	73
SJC Non-MS4	SJC-21	Stormwater Education	Education	N/A	Ongoing	492	1,082
SJC Non-MS4	SJC-22	Low-Impact Development	N/A	N/A	Ongoing	Not quantified	Not quantified
SJC Non-MS4	SJC-23	Slow Release Fertilizer Ordinance	N/A	N/A	Completed	Not quantified	Not quantified
SJC Non-MS4	SJC-24	FDOT SR 312 from US 1 to SR 3	N/A	38	Completed	84	185
SJC Non-MS4	SJC-25	Atmospheric Deposition Load Reduction – Seminole Electric SCR Upgrade	N/A	N/A	Completed	390	858
SJC Non-MS4	SJC-26	Algal Initiative – Masters Tract RST Facility*	Stormwater Harvesting	N/A	10/31/2017	611	1,347
SJC Non-MS4	SJC-27	Application of Freshwater Non-MS4 Credits	N/A	N/A	Completed	1,391	3,060
SJC Non-MS4	SJC-28	Bishop Estates Baffles Boxes	2nd Generation Baffle Boxes	N/A	10/31/2017	119	262
SJC Non-MS4	SJC-29	Deep Creek West RST Improvements**	Wet Pond, Treatment Wetland	N/A	10/31/2017	2,052	4,515
SJC Non-MS4	SJC-30	Fruit Cove Secret Oaks Place Baffle Box	2nd Generation Baffle Boxes	N/A	10/31/2017	42	92
SJC Non-MS4	SJC-31	Fruit Cove Lemon Wood Rd Baffle Box	2nd Generation Baffle Boxes	N/A	10/31/2017	104	229
SJC Non-MS4	SJC-32	Fruit Cove Degrove Rd Baffle Box	2nd Generation Baffle Boxes	N/A	10/31/2017	36	79
SJC Non-MS4	SJC-33	CR 13 & Joe Ashton Rd Baffle Box	2nd Generation Baffle Boxes	N/A	10/31/2017	75	165
SJC Non-MS4	SJC-34	Colee Cove Rd Baffle Box	2nd Generation Baffle Boxes	N/A	10/31/2017	350	770
SJC Non-MS4	SJC-35	CR 13 Culvert Box #8	2nd Generation Baffle Boxes	N/A	Completed	68	150
SJC Non-MS4	N/A	Total Project Reductions	N/A	N/A	N/A	6,124	13,476
SJC Non-MS4	N/A	Credit/(Deficit)	N/A	N/A	N/A	1,143	2,518

St. Johns County Non-MS4 Schedule

Algal Initiative	Schedule
a. Start Date of Project	Completed
b. Completion Date – Project Assessment	Completed
c. Completion Date – Project Fundraising	10/31/2012
d. Completion Date – Construction	10/31/2017

Appendix B: Website References

- Final TMDL document: http://www.dep.state.fl.us/water/tmdl/final_tmdl.htm.
- USGS website: http://waterdata.usgs.gov/usa/nwis/uv?site_no=302309081333001.