

2014 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
Tallahassee, FL 32399

in cooperation with the
Lower St. Johns River TMDL Executive Committee

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This 2014 Lower St. Johns River Main Stem BMAP 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 in cooperation with 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
APRICOT	A Prototype Realistic Innovative Community of Today
ArcNLET	ArcGIS-based Nitrate Load Estimation Toolkit
BMAP	Basin Management Action Plan
BMP	Best Management Practice
CCUA	Clay County Utility Authority
CR	County Road
Department	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
FEMA	Federal Emergency Management Agency
GIS	Geographic Information System
kg	Kilograms
kg/yr	Kilograms Per Year
lbs/yr	Pounds per Year
LOC	Lateral-Only Connection
LSJR	Lower St. Johns River
mgd	Million Gallons Per Day
mg/L	Milligrams Per Liter
MS4	Municipal Separate Storm Sewer System
MT	Metric Ton
NAS	Naval Air Station
NNC	Numeric Nutrient Criteria
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NS	Naval Station
O&M	Operation and Maintenance
OAWP	Office of Agricultural Water Policy
ppt	Parts Per Thousand
RO	Reverse Osmosis
RST	Regional Stormwater Treatment
SCR	Selective Catalytic Reduction
SJRWMD	St. Johns River Water Management District
SR	State Road
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
USACOE	United States Army Corps of Engineers
U.S.C.	United States Code
USDA	United States Department of Agriculture
USGS	United States Geological Survey
WBID	Waterbody Identification
WRF	Water Reclamation Facility
WWTP	Wastewater Treatment Plant
WWTF	Wastewater Treatment Facility

SUMMARY

TOTAL MAXIMUM DAILY LOADS

The Florida Department of Environmental Protection adopted the TMDLs for the main stem of the Lower St. Johns River (LSJR) Basin in June 2008. The TMDLs target total phosphorus (TP) and total nitrogen (TN) in the freshwater reach to achieve reductions in the chlorophyll-*a* levels in this portion of the river. In addition, a TN TMDL was established in the marine reach to meet dissolved oxygen (DO) levels that would be protective of aquatic life uses.

The LSJR Main Stem Basin Management Action Plan was adopted in October 2008 to implement these TMDLs. This 2014 Progress Report is the sixth annual report for the LSJR Main Stem BMAP, and it describes the major accomplishments and issues identified during the reporting period from January 1, 2014, to December 31, 2014, and also analyzes water quality trends since BMAP implementation.

MAJOR ACCOMPLISHMENTS

During the reporting period, the city of Palatka completed a stormwater treatment project in the freshwater reach. The city of Atlantic Beach completed a wastewater treatment reuse project in the marine reach. Clay County completed two municipal separate storm sewer system (MS4) stormwater treatment projects and the city of Jacksonville completed one MS4 stormwater project in the marine reach. Camp Blanding completed regrading a portion of its swales and identified several completed stormwater treatment projects, and St. Johns County completed a baffle box project in the marine reach. In addition, the Florida Department of Agriculture and Consumer Services (FDACS) continued to enroll producers in best management practices (BMPs) in the freshwater reach. **Figure ES-1** through **Figure ES-3** show the progress made towards achieving each of the TMDLs based on estimated project reductions.

ACTIVITIES FOR THE UPCOMING YEAR

The seventh annual BMAP Progress Report will encompass the period from January 1, 2015, through December 31, 2015. During this time, the city of Jacksonville will complete the lateral only septic tank phase-out project and will complete stormwater projects and/or water quality credit trades to meet 50% of its required TN reductions by July 31, 2015. Naval Air Station (NAS) Jacksonville will complete its project to expand the reuse system. Camp Blanding will regrade 18 miles of swales. Putnam County will complete the trade with the Hiawatha wastewater treatment facility (WWTF) and septic tank phase

outs. FDACS will focus on significantly increasing enrollment in all commodities, and on supporting and expanding the Tri-County Agricultural Area (TCAA) Water Management Partnership. In addition, the freshwater ambient water quality sampling, DO station sampling, and tributaries sampling will continue as described in the monitoring plan.

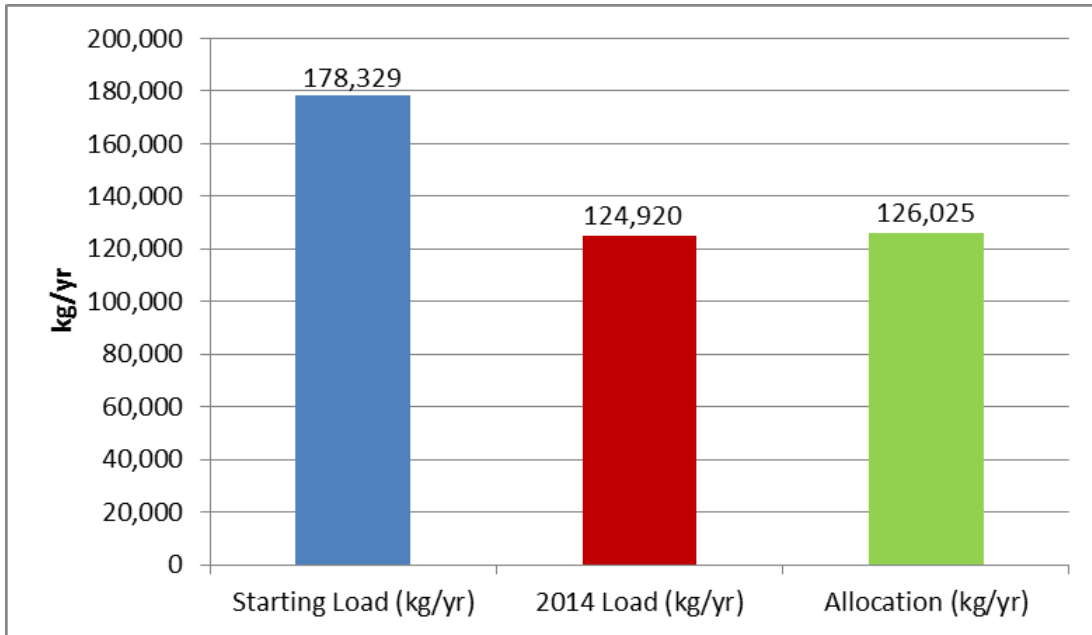


FIGURE ES-1: PROGRESS TOWARDS THE TP TMDL IN THE FRESHWATER REACH

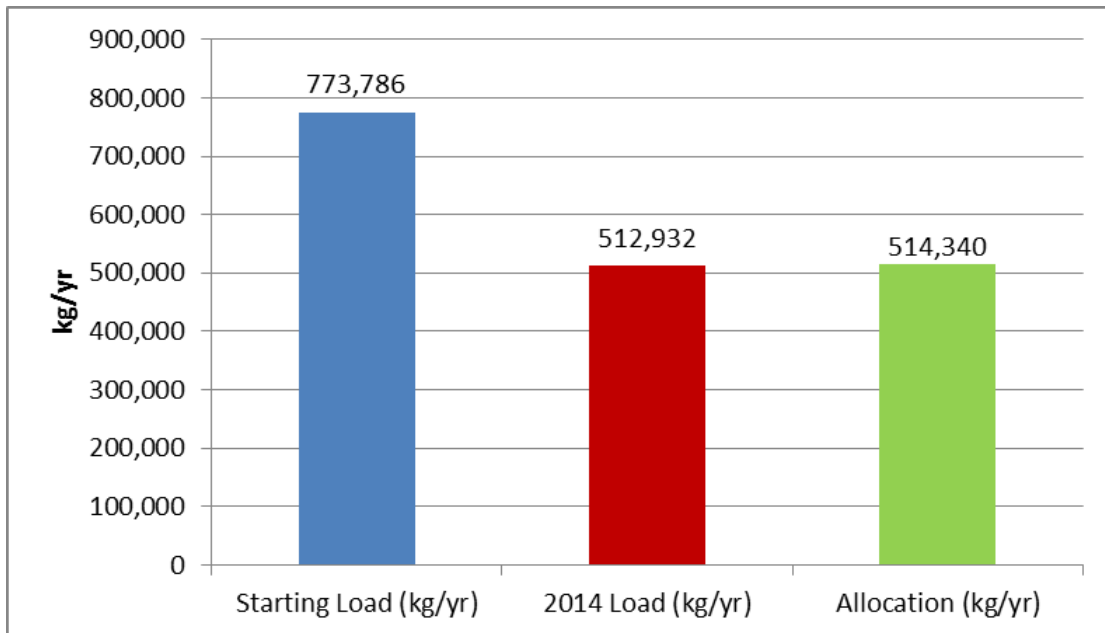


FIGURE ES-2: PROGRESS TOWARDS THE TN TMDL IN THE FRESHWATER REACH

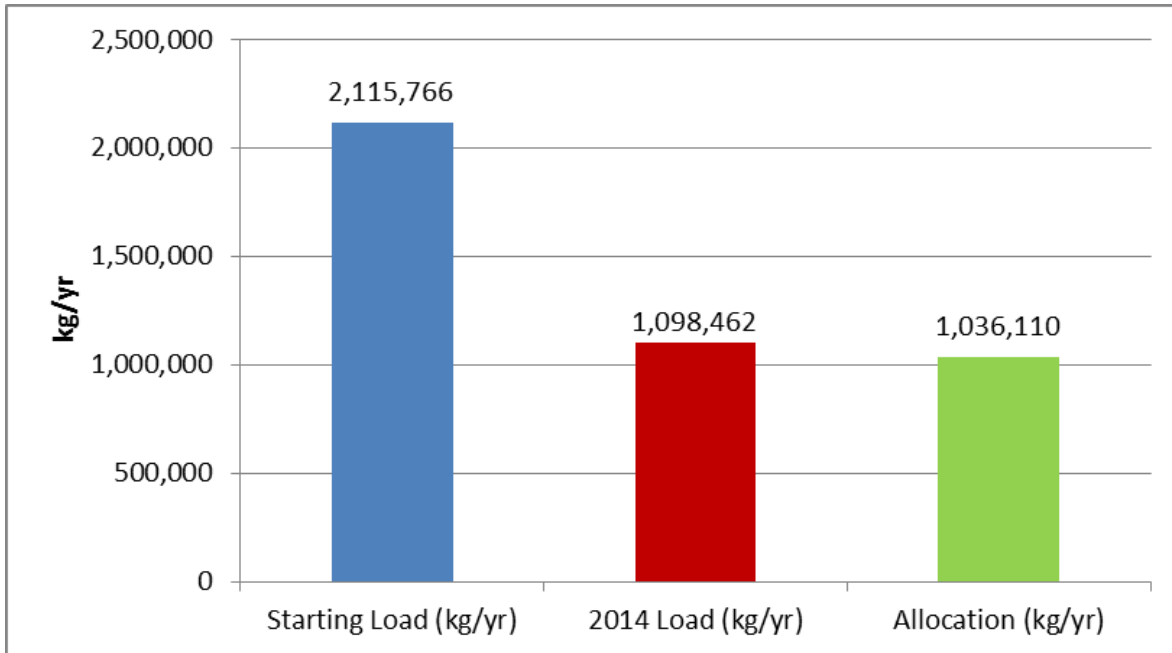


FIGURE ES-3: PROGRESS TOWARDS THE TN TMDL IN THE MARINE REACH

WATER QUALITY TRENDS

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 the monitored tributaries in agricultural areas, three tributaries are exhibiting significant downward trends in TN. A fourth, Sixteen Mile Creek, exhibits a significant downward trend at the 90% confidence level. Most of the urban land use–dominated tributaries are also exhibiting downward trends in TN, with two of these, Moncrief Creek and Cedar River, trending downward at above the 90% confidence level. Three of the four tributaries in predominantly undeveloped watersheds show no trend in TN and have very low concentrations. The exception is Little Haw Creek, which is showing an upward trend in TN, and has a 66th percentile concentration that would potentially exceed the numeric nutrient criteria (NNC).

Tributary TP trends are exhibiting stable or increasing trends. Two of the urban-dominated tributaries and four of the agriculture-dominated tributaries exhibit annual geometric mean concentrations that indicate an exceedance of the TP NNC.

Despite the fact that river TP concentrations were high in 2014, TN and TP concentrations are exhibiting a downward trend for most river surface water quality monitoring sites in the LSJR, based on data collected between 1999 and 2013. Annual mean TN concentrations for 2014 follow the ongoing downward trend, but annual mean TP is elevated and departs from the recent downward trends.

Monitoring data for the freshwater reach stations at Racy Point and Federal Point indicate algal bloom density and duration continue to remain below the TMDL threshold, and the TMDL target for these “worst-case” WBIDs was again achieved in 2014. Algal biomass for oligohaline reach stations at Mandarin Point and Piney Point was lower in 2014, departing from the significant upward trend in chlorophyll-*a* that had been observed in this reach through 2013. The poorest water quality conditions in 2014 occurred in Crescent Lake, which had a persistent bloom of the nuisance cyanobacteria *Microcystis aeruginosa* through most of summer and fall. A nutrient TMDL for Crescent Lake is currently under development.

In the marine reach, the DO monitoring station at the Dames Point Bridge continued to meet the DO site-specific alternative criteria (SSAC) in 2014. The DO SSAC was also met at the Clapboard Creek and Channel Marker 36 sites; however, data were only collected from these latter two sites for a few months in 2014.

SECTION 1: INTRODUCTION

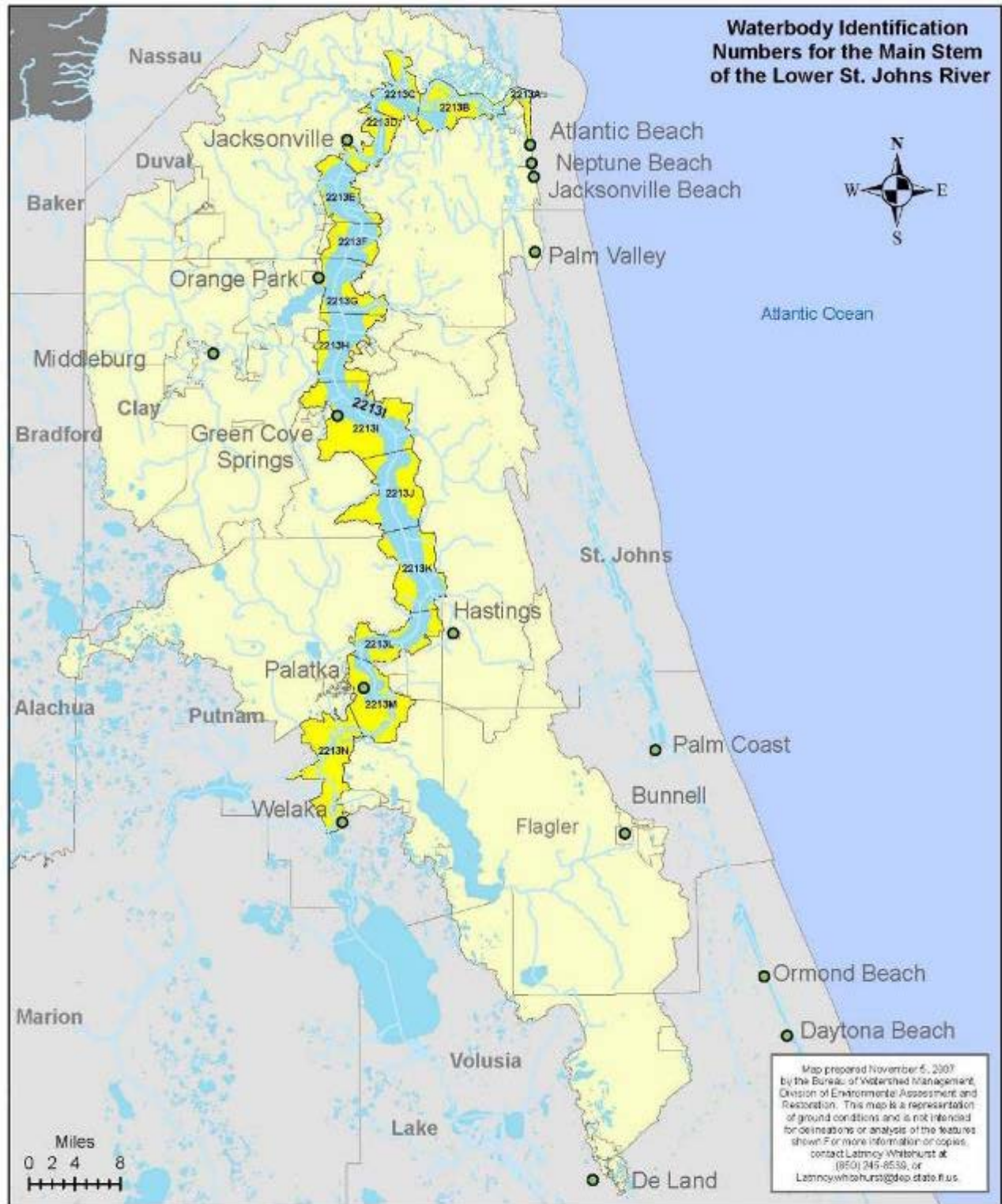
1.1 PURPOSE OF THE REPORT

This is the sixth annual report for the Lower St. Johns River (LSJR) Main Stem Basin Management Action Plan. **Section 2** describes the major accomplishments during the period from January 1, 2014, through December 31, 2014. **Section 3** includes a summary of efforts for the upcoming year (January 1, 2015, through December 31, 2015). **Section 4** provides an overview of water quality trends during the first six years of BMAP implementation.

1.2 TOTAL MAXIMUM DAILY LOADS FOR THE LSJR BASIN

The area addressed by the LSJR BMAP is that portion of the St. Johns River which 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, the Florida Department of Environmental Protection 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 two reaches based on salinity: marine and fresh water (**Figure 2**).

The department adopted the 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. **Table 1** lists the TMDLs and pollutant load allocations adopted by rule for the LSJR.



WBID Basin

FIGURE 1: LOCATION OF THE LSJR BASIN



FIGURE 2: MARINE AND FRESHWATER REACHES IN THE LSJR BASIN

TABLE 1: TMDLS IN THE LSJR BASIN

* Includes a percent reduction from National Pollutant Discharge Elimination System (NPDES) stormwater sources.

RIVER REACH	WBID(S)	TMDL (KILOGRAMS/ YEAR [KG/YR])	TMDL BASELINE LOAD (KG/YR)	WASTELOAD ALLOCATION* (KG/YR)	LOAD ALLOCATION (KG/YR)	OVERALL NEEDED REDUCTION (KG/YR)
Freshwater	2213I to 2213N	500,325 TP	599,610	46,357 TP	453,968 TP	99,285
Freshwater	2213I to 2213N	8,571,563 TN	10,115,552	236,695 TN	8,334,868 TN	1,543,989
Marine	2213A to 2213H	1,376,855 TN	2,453,258	1,027,590 TN	349,265	1,076,403

1.3 RESPONSIBLE PARTIES AND KEY STAKEHOLDERS

The LSJR BMAP identified wastewater treatment facilities (WWTFs), municipal separate storm sewer systems (MS4s), urban areas outside MS4s (non-MS4 areas), and agricultural sources of TN and TP in the basin. The following entities are responsible for achieving the load reductions in the freshwater reach:

- City of Green Cove Springs WWTFs.
- City of Palatka WWTF.
- Georgia-Pacific WWTF.
- Seminole Electric WWTF.
- Clay County MS4.
- Green Cove Springs MS4.
- City of Palatka non-MS4.
- Clay County non-MS4.
- Putnam County non-MS4.
- St. Johns County non-MS4.
- Town of Hastings non-MS4.
- Town of Welaka non-MS4.

— Agriculture.

The following entities are responsible for achieving the load reductions in the marine reach:

— Anheuser Busch WWTF.

— City of Atlantic Beach WWTFs.

— City of Jacksonville Beach WWTF.

— City of Neptune Beach WWTF.

— Clay County Utility Authority (CCUA) WWTFs.

— JEA WWTFs.

— Naval Air Station (NAS) Jacksonville WWTF.

— Naval Station (NS) Mayport WWTF.

— Smurfit-Stone Container WWTF.

— Town of Orange Park WWTF.

— City of Atlantic Beach MS4.

— City of Jacksonville/ Florida Department of Transportation (FDOT) MS4.

— City of Jacksonville Beach MS4.

— City of Neptune Beach MS4.

— Clay County MS4.

— NAS Jacksonville MS4.

— NS Mayport MS4.

— St. Johns County MS4.

- Town of Orange Park MS4.
- Camp Blanding non-MS4.
- Clay County non-MS4.
- St. Johns County non-MS4.
- Agriculture.

In addition to these entities, the Florida Department of Agriculture and Consumer Services (FDACS), the department, and St. Johns River Water Management District (SJRWMD) are essential to the implementation of the BMAP activities.

1.4 BMAP ALLOCATIONS

The required reductions in the BMAP were developed through an extensive allocation process that built off the three-step process recommended in the Allocation Technical Advisory Committee report to the Governor and Legislature (Department 2001). “Step 1” and “Step 2” reductions were applied to nonpoint sources (urban and agriculture) to provide treatment approximately equivalent to the treatment required for domestic and industrial WWTFs. The Step 2 reductions were based on the reduction from nonpoint sources expected from the implementation of their respective best management practices (BMPs). Since Step 2 reductions did not result in meeting the assimilative capacity of the river, additional “Step 3” reductions were necessary that required the same overall percentage reduction from both point and nonpoint sources.

Once the initial allocations were determined, the stakeholders had the opportunity to trade allocations before the BMAP was adopted. These “pre-BMAP” trades mainly occurred between a WWTF and MS4 owned by the same stakeholder. The pre-BMAP trades resulted in a change in the allocations, in which the entity trading the credits had a lower allocation than the initial allocation, and the entity receiving the credits had a higher allocation than the initial allocation. **Table 2** through **Table 4** list the starting point loads and BMAP allocations after the pre-BMAP trades for each entity in the marine and freshwater reaches of the river.

TABLE 2: TN STARTING POINT LOADS AND BMAP ALLOCATIONS IN THE FRESHWATER REACH

SOURCE	SOURCE TYPE	STARTING POINT LOAD (KG/YR)	ALLOCATION (KG/YR)
Georgia-Pacific	WWTF	258,155	165,909
Green Cove Springs WWTFs	WWTF	14,600	7,752.5
Palatka WWTF	WWTF	60,889	38,845
Seminole Electric	WWTF	21,045	14,732
Future A Prototype Realistic Innovative Community of Today (APRICOT)/ Reverse Osmosis (RO) Dischargers	WWTF	9,961	9,961
Clay County	MS4	2,770	2,418
Green Cove Springs	MS4	6,961	6,266.5
Alachua County Non-MS4	Non-MS4	636	0.0
Clay County Non-MS4	Non-MS4	5,579	4,659
Flagler County Non-MS4	Non-MS4	7	7
Hastings	Non-MS4	624	448
Palatka	Non-MS4	9,683	8,858
Pomona Park	Non-MS4	108	108
Putnam County	Non-MS4	43,616	33,976
St. Johns County Non-MS4	Non-MS4	27,277	25,340
Welaka	Non-MS4	1,175	838
Agriculture	Nonpoint Source	310,700	194,336
Upstream Anthropogenic Load	Other Source	4,148,223	2,693,852
Atmospheric Deposition	Other Source	105,688	105,688
Natural Background	Other Source	5,087,856	5,087,856
Total Freshwater TN Loads	Total Load	10,115,552	8,401,850

TABLE 3: TP STARTING POINT LOADS AND BMAP ALLOCATIONS IN THE FRESHWATER REACH

SOURCE	SOURCE TYPE	STARTING POINT LOAD (KG/YR)	ALLOCATION (KG/YR)
Georgia-Pacific	WWTF	63,875	33,182
Green Cove Springs WWTFs	WWTF	3,865	1,929.2
Palatka WWTF	WWTF	9,955	5,954.7
Future APRICOT/RO Dischargers	WWTF	3,320	3,320
Clay County	MS4	404.6	212.6
Green Cove Springs	MS4	1,095.7	1,043.7
Alachua County Non-MS4	Non-MS4	83.8	83.8
Clay County Non-MS4	Non-MS4	767.3	499.4
Flagler County Non-MS4	Non-MS4	0.9	0.9
Hastings	Non-MS4	92.9	49.3
Palatka	Non-MS4	1,507.8	1,507.8
Pomona Park	Non-MS4	15.8	15.8
Putnam County	Non-MS4	5,990.4	3,964.9
St. Johns County Non-MS4	Non-MS4	3,727.4	3,296.6
Welaka	Non-MS4	172.0	90.4
Agriculture	Nonpoint Source	83,455	70,974
Upstream Anthropogenic Load	Other Source	137,157	76,502
Atmospheric Deposition	Other Source	1,356	1,356
Natural Background	Other Source	282,768	282,768
Total Freshwater TP Loads	Total Load	599,610	486,751

TABLE 4: TN STARTING POINT LOADS AND BMAP ALLOCATIONS IN THE MARINE REACH

SOURCE	SOURCE TYPE	STARTING POINT LOAD (KG/YR)	ALLOCATION (KG/YR)
Anheuser Busch – Main Street	WWTF	24,399	12,418
Atlantic Beach Aggregate	WWTF	49,275	21,188
CCUA Aggregate	WWTF	61,569	63,963
Jacksonville Beach WWTF	WWTF	40,150	21,015
JEA Aggregate	WWTF	1,396,622	654,672
Neptune Beach WWTF	WWTF	11,448	6,162
Orange Park WWTF	WWTF	24,886	7,940
Smurfit-Stone Container	WWTF	145,989	74,305
United States Navy WWTF Aggregate	WWTF	42,029	11,684
Future APRICOT/RO Dischargers	WWTF	4,979	4,979
Atlantic Beach	MS4	2,474	1,651
Clay County Marine MS4	MS4	25,249	21,188
Jacksonville/FDOT	MS4	243,438	96,016
Jacksonville Beach	MS4	4,974	4,804
Neptune Beach	MS4	1,484	1,437
Orange Park	MS4	3,451	3,348
St. Johns County	MS4	3,057	746
United States Navy MS4s	MS4	7,530	7,232
Camp Blanding – State of Florida	Non-MS4	2,870	1,220
Clay County Marine Non-MS4	Non-MS4	12,051	11,107
St. Johns County Marine Non-MS4	Non-MS4	9,846	4,865
Agriculture	Nonpoint Source	12,800	4,170
Atmospheric Deposition – Marine	Other Source	95,028	95,028
Natural Background	Other Source	242,300	242,300
Total Marine TN Loads	Total Load	2,453,094	1,373,438

SECTION 2: MAJOR ACCOMPLISHMENTS

During the reporting period, the city of Palatka completed a stormwater treatment project in the freshwater reach. The city of Atlantic Beach completed a WWTF reuse project in the marine reach. Clay County completed two MS4 stormwater treatment projects, and the city of Jacksonville completed one MS4 stormwater project in the marine reach. Camp Blanding completed regrading a portion of its swales and identified several completed stormwater treatment projects, and St. Johns County completed a baffle box project in the marine reach. In addition, FDACS continued to enroll producers in BMPs in the freshwater reach. Details of the major accomplishments over the past year are described in **Section 2.1** through **Section 2.4**, and **Appendix A** contains the individual project tables.

2.1 ACCOMPLISHMENTS BY SOURCE TYPE

2.1.1 WWTFs

2.1.1.1 Freshwater Reach

WWTF Progress Towards the Freshwater TMDLs

The WWTFs in the freshwater reach (city of Green Cove Springs, city of Palatka WWTF, Georgia-Pacific, and Seminole Electric WWTF) have already achieved and exceeded (more than 100% of the TN and TP required reductions) their portion of the TP and TN TMDLs, as shown in **Figure 3** and **Figure 4**. These facilities exceeded 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 2014 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.

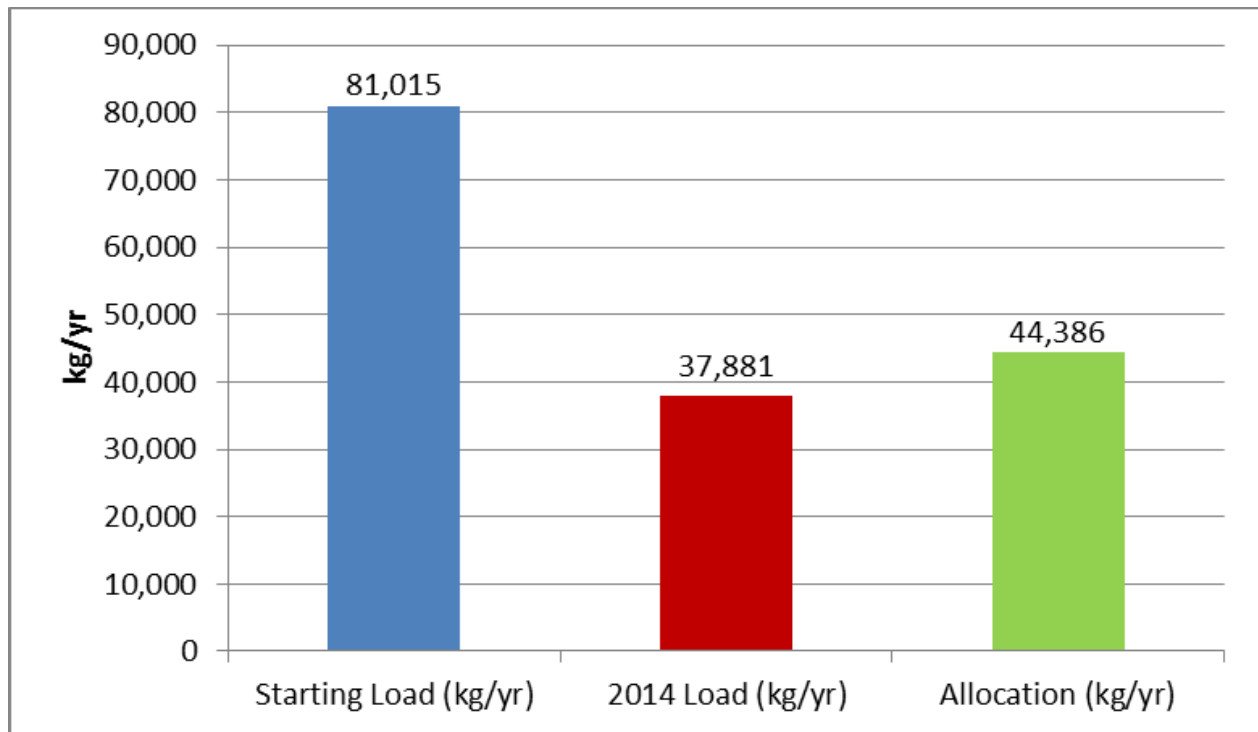


FIGURE 3: WWTF PROGRESS TOWARDS THE TP FRESHWATER TMDL

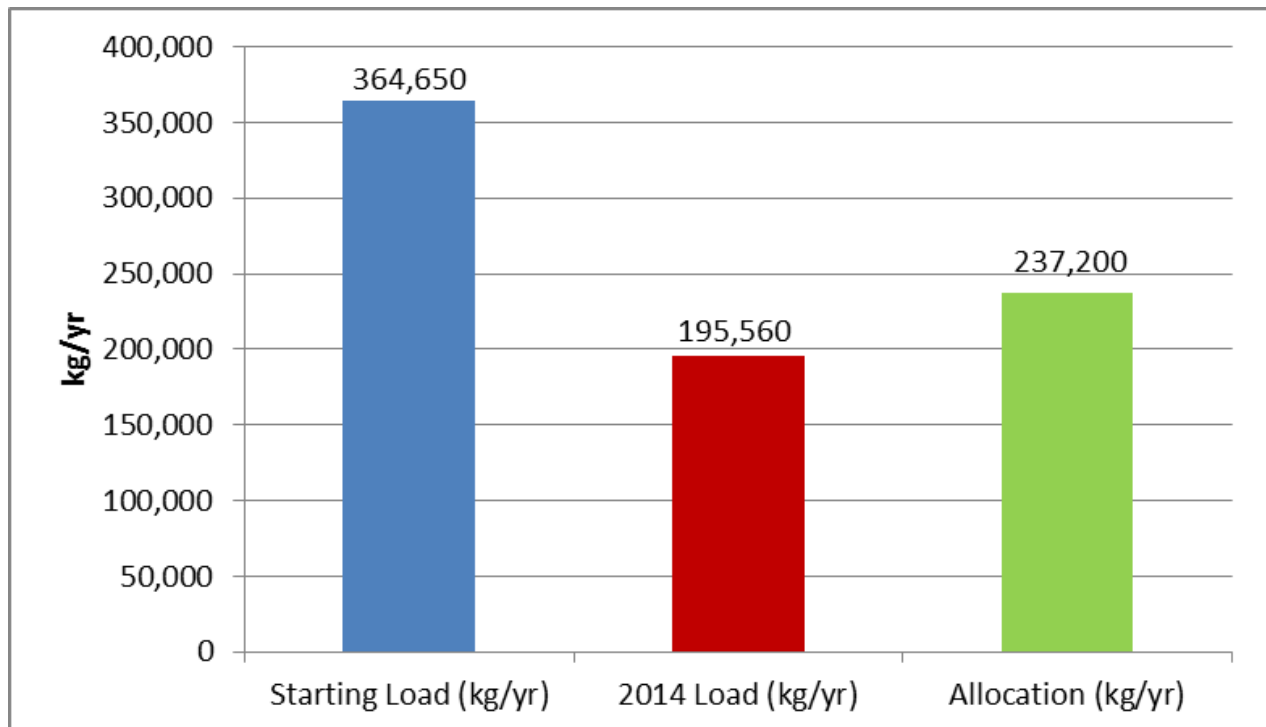


FIGURE 4: WWTF PROGRESS TOWARDS THE TN FRESHWATER TMDL

2.1.1.2 Marine Reach

City of Atlantic Beach

The city of Atlantic Beach completed the construction of a reclaimed water facility to provide irrigation to the Atlantic Beach Country Club. This project was completed through a public/private agreement in which the city built the reuse facilities to provide reclaimed water for the country club, and in return the country club provided a conservation easement on the property, so that it remains in conservation in perpetuity. The project provides irrigation to the 146-acre golf course, 178 residences, and common areas.

The first phase of the project was a temporary reuse facility that provided up to 1 million gallons per day (mgd) of reuse for the golf course during the grow-in period of the new course. This phase was completed in June 2014. The second phase of the project established the permanent reuse facilities of 0.5 mgd to provide irrigation to the golf course, common areas, and a residential subdivision. A substantial portion of this phase was completed in November 2014. The project cost \$1,410,528, and it is estimated to remove 2,076 kg/yr of TN and 1,937 kg/yr of TP at design flow.

JEA

JEA's obligations under the BMAP were fulfilled during the 2013 calendar year. However, JEA BMAP-related projects completed in prior years continue to result in nutrient reductions. An example of this is a 26-mile reuse transmission system that is sending increasing volumes of reuse water from JEA's Arlington East Water Reclamation Facility (WRF) to the south to serve the rapidly developing areas of northern St. Johns County. This infrastructure allows JEA to serve the approximately 1,740 new reuse customers that were added during fiscal year 2014 alone in the northern St. Johns County service area.

JEA continues to optimize the operations of its wastewater treatment plants (WWTPs) and to expand its reclaimed water system. As a result of JEA's ongoing expansion of its reuse system and continuing optimization of the utility's WWTPs, JEA's aggregate loading to the river was reduced 33% between fiscal years 2013 and 2014, from 767 to 577 tons of TN per year. JEA's nutrient loading to the river is now significantly below its TMDL allocation of 720 tons of TN per year.

JEA is in the process of negotiating a water quality trade agreement with the city of Jacksonville. The trade is scheduled to be finalized before July 2015.

United States Navy

From August 2011 to July 2013, the Navy spent \$2.65 million in construction for Phase I of the NAS Jacksonville wastewater reuse project (Project USN-2) to irrigate the base golf course (see **Figure 5** and **Figure 6**). The NAS Jacksonville wastewater reuse project Phase II was contracted and is scheduled for completion in October 2015 at a cost of \$1.4 million for the expanded reuse in other areas of the base. This project will expand the base's capabilities to reuse treated effluent for irrigation that would otherwise be discharged to the St. Johns River.

At Naval Station (NS) Mayport, from June 2013 to August 2014, the Navy completed a \$701,000 wastewater study project, which included a preliminary engineering report for the construction of a proposed new WWTF (Project USN-5). This project is estimated to cost \$53 million and is projected to be completed in 2020. This is later than the current BMAP deadline and aggregate permit deadline of October 2015; therefore, the department and Navy are in the process of negotiating a Consent Order to account for this delay. The new WWTF will be designed to fully comply with the aggregate permit discharge requirements.



FIGURE 5: NAS JACKSONVILLE REUSE STORAGE POND



FIGURE 6: NAS JACKSONVILLE REUSE PUMP STATION

In May 2014, Commander Navy Region Southeast submitted a military construction appropriation request documentation, which listed the NS Mayport WWTF project as the region's number one priority for military construction appropriations for fiscal year 2017. In October 2014, the Navy requested and received early full design authority. Under 10 United States Code (U.S.C.) Section 2807, the Navy notified the United States Congress regarding this design authority and is proceeding with design. The Navy will pursue the acquisition of design services for the proposed WWTF, and will position NS Mayport to be ready to proceed to construction pending the authorization of funding for a military construction project. Scheduling for a military construction project is subject to the Department of Defense's Presidential and Congressional determinations.

WWTF Progress Towards the Marine Reach TMDL

Figure 7 shows the progress made towards meeting the WWTF portion of the marine TN TMDL. The first bar in the figure shows the starting load for the marine WWTFs, as calculated in the BMAP. The second bar shows the estimated 2014 load based on all completed marine WWTF projects (from the BMAP; 2009, 2010, 2011, 2012, and 2013 Progress Reports; and those listed above). The third bar indicates the total allocation allowed for the WWTFs in the marine reach of the river. The WWTFs in the marine section have exceeded the necessary reductions (achieved more than 100% of the required

TN reductions); however, several projects are still ongoing that are required for individual stakeholders to achieve their portion of the reductions.

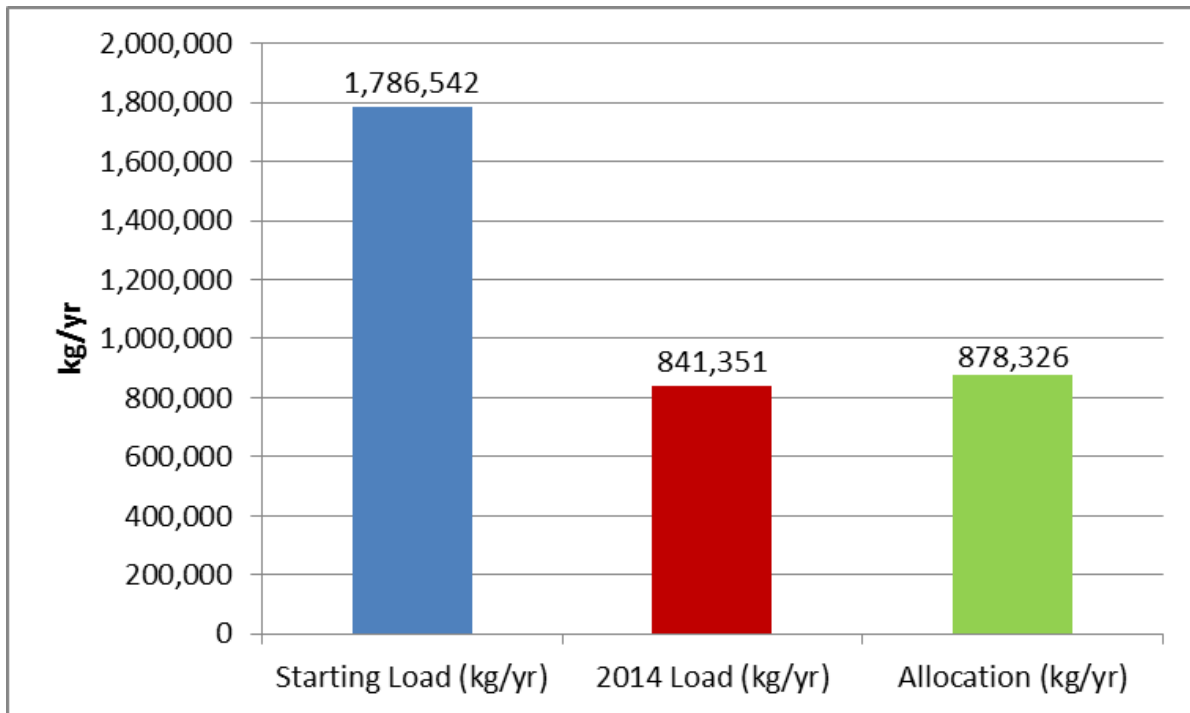


FIGURE 7: WWTF PROGRESS TOWARDS THE TN MARINE TMDL

2.1.1.3 Project Implementation Status

The section above described all the efforts in the past year related to project implementation, including design and construction. These are important milestones that lead to project completion and actual load reductions. The WWTF projects that were completed during the last year and their associated load reductions are shown in **Table 5** for the marine reach. The freshwater reach WWTFs have already achieved their reductions.

TABLE 5: WWTF PROJECTS COMPLETED IN THE MARINE REACH FOR TN IN 2014

N/A = Not applicable

ENTITY	PROJECT NUMBER	DESCRIPTION	TN PROJECT REDUCTION (KG/YR)
Atlantic Beach	AB-3	Atlantic Beach Country Club reuse facilities	2,075
Total	N/A	N/A	2,075

2.1.2 MS4s

2.1.2.1 Freshwater Reach

Clay County

Clay County continued with the established water quality trading mechanism with CCUA (an interlocal agreement was executed in September 2009) (Project CC-6). The county also continued with its education and outreach efforts (Project CC-1). The county contracted with the St. Johns Riverkeeper for five years to help with public education. The Riverkeeper participated in two booth-style events, raising public awareness of illicit discharges near or around any system that may lead to the river. The Riverkeeper also participated in classroom outreach programs, teaching children about nitrogen issues in the river. Initially, the agreement was to fund the Riverkeeper to provide the county with all of the outreach requirements of the NPDES Program. Since then, the Riverkeeper has added staff and is reaching out into the Clay County community above and beyond the requirements of the agreement.

MS4 Progress Towards Meeting the Freshwater TMDLs

Figure 8 and **Figure 9** show the progress made towards meeting the MS4 portion of the freshwater TP and TN TMDLs, respectively. Through completed projects from 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.

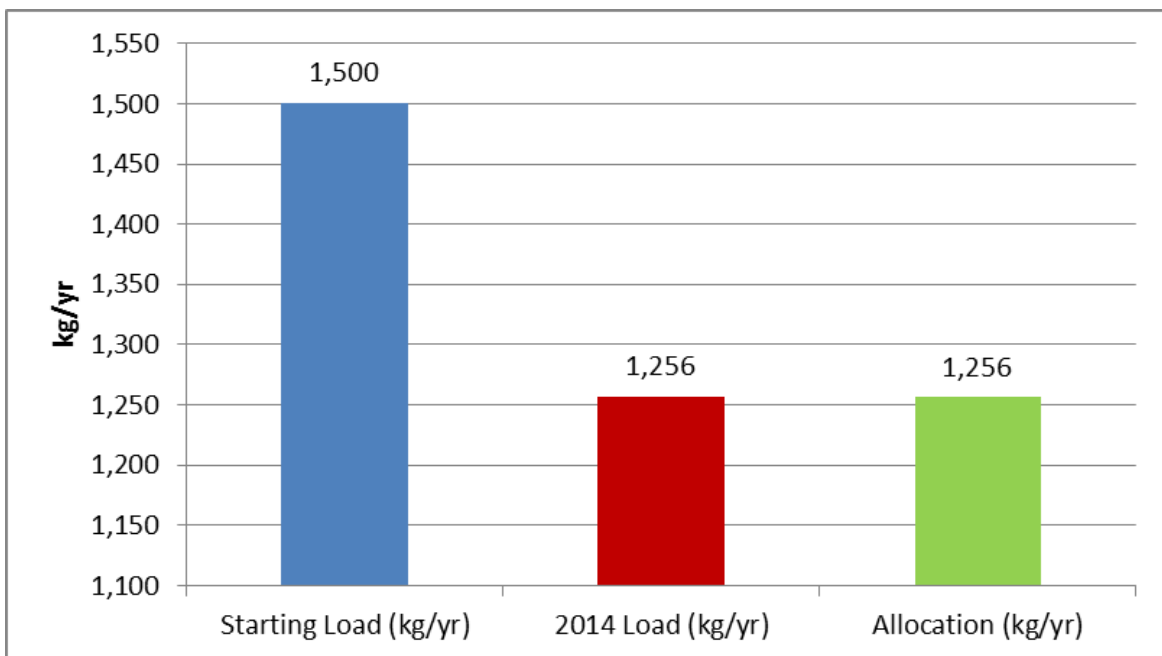


FIGURE 8: MS4 PROGRESS TOWARDS THE TP FRESHWATER TMDL

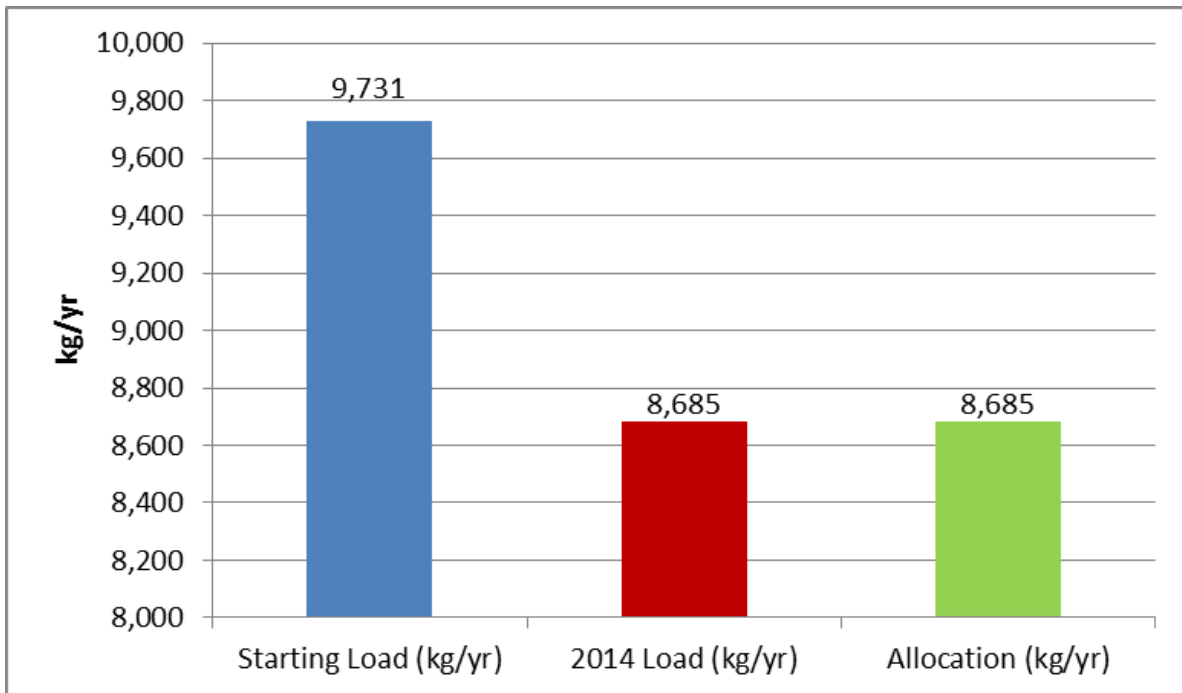


FIGURE 9: MS4 PROGRESS TOWARDS THE TN FRESHWATER TMDL

2.1.2.2 Marine Reach

City of Jacksonville

The city of Jacksonville outlined a toolbox approach in the BMAP to reduce TN discharged to the LSJR. This toolbox included stormwater wet detention, septic tank phase-outs, public education, regulatory and policy implementation, and low impact development projects/policies. All of these tools continue to be used to provide a comprehensive program to meet the BMAP goals. **Table 6** reflects the specific activities that have taken place in previous and current reporting periods.

The city of Jacksonville completed the McCoys Creek Pond C project in the LSJR Upstream of Trout River Basin (Project COJ-42). This project is a wet detention pond that resulted in 0.175 metric tons (MT) per year of TN reductions. The city of Jacksonville started the construction of the Air Liquide stormwater retention pond. The pond required by the BMAP has been completed, but the area that it serves has not yet been routed to the pond due to circumstances beyond the city's control. These issues should be resolved in 2015. The final project scheduled for completion in July 2015 is the Noroad/Lambing Area Drainage. The design phase is complete, and the project is awaiting funding to

initiate the construction phase. It is uncertain at this time if the construction will be complete by July 2015, but the city has taken this into consideration in order to meet its mid-term required reduction.

TABLE 6: CITY OF JACKSONVILLE INITIATIVES FOR PREVIOUS AND CURRENT REPORTING PERIODS

*The septic tank phase-out project has begun, but the city is still working on estimating reductions.

N/A = Not applicable

BMAP PROJECT NUMBER	TOOLBOX APPROACH	REDUCTION PREVIOUSLY PROVIDED (MT TN)	REDUCTION IN CURRENT REPORTING PERIOD (MT TN)	TOTAL REDUCTIONS (MT TN)
COJ-42 through COJ-50	Stormwater Projects	0.564	0.175	0.739
COJ-123	Septic Tank Phaseout Projects (Lateral-Only Connections[LOCs])	0.000	0.000*	0.000
COJ-52	Septic Tank Phase-out Projects	2.936	0.000	2.936
COJ-51	Public Education Activities	13.145	0.000	13.145
COJ-121	Street Sweeping	5.553	0.000	5.553
COJ-122	BMAP Credit Trading	0.000	0.000	0.000
N/A	Total	22.198	0.175	22.373

During 2014, the city of Jacksonville and JEA used a combination of customer database information, infrastructure as-built information, and spatial processing to evaluate over 2,750 septic tanks for inclusion in a grant program to determine if parcels meet a number of LOC Program criteria related to the probability of creating a water quality benefit using the ArcGIS-based Nitrate Load Estimation Toolkit (ArcNLET) model, as well as other factors (Project COJ-123). Not all of the septic tanks evaluated were included in the grant program. After the parcels were initially evaluated as providing surface water quality improvement, the program focused on areas that had an existing tap from the sewer collection main to the right-of-way, as these are the easiest to connect. Many parcels required further field evaluation to determine the system connection requirements. There were challenges in getting residents to agree to sign up for the connection program, particularly in homes that are bank-owned.

The next area of focus was the low pressure system pump and tap/lateral installation on the collection pipe; these connections have a much higher cost per parcel and more technical challenges than a normal gravity or vacuum connection, where the lateral pipe is already run to the right-of-way line. The low pressure system connections require a unique connection agreement due to the ownership of the

mechanical/electrical equipment being utilized, specialized utility contractors, and engineering design in order to provide the infrastructure needed for the plumber to connect a homeowner.

In addition to the evaluation of the initial 2,750 parcels, another analysis of LOC parcels is under way. These were not previously evaluated because they were not located in Type A soils—which was one criterion used in the evaluation of the initial parcels. Over 2,000 of these parcels are undergoing an initial evaluation using the ArcNLET model parameters to determine the potential for surface water improvement. The next phase of evaluation will include technical feasibility and a determination of whether these parcels are eligible for inclusion in the LOC Program.

The septic tank phase-out program is viewed favorably by residents and council members. The program developed a [YouTube video](#), which helps to convey the program’s overall importance to the community.

The city continued its street sweeping in the basin (Project COJ-121) and will continue to pursue opportunities to enhance/improve on its efforts. The city also continued its public education and outreach efforts (Project COJ-51). These efforts include increasing public awareness on the impacts of illicit connections and improper dumping impacts on water quality.

The city of Jacksonville is in negotiations with both FDOT and JEA to finalize water quality credit trade agreements (Project COJ-122). These agreements will be finalized and in place by July 31, 2015, as required by the BMAP. The total number of credits being discussed at this time is 40.91 MT/yr of TN (see **Table 7**). This amount would make up for the two remaining stormwater ponds that may not be completed by the deadline of July 31, 2015.

Florida Department of Transportation

FDOT continued its public education and outreach efforts (Projects COJ-117 and COJ-118) during the reporting period. In addition, FDOT started statewide implementation of mandatory illicit discharge detection and elimination training for all staff and contractors working in FDOT's rights-of-way. The agency’s proactive efforts to address illicit connections, discharges, and improper disposal have been successful, as evidenced by low numbers of citizen complaints and few new findings of illicit discharges. FDOT continued to talk with the city of Jacksonville about a potential water quality credit trade; however, no agreement has been finalized.

TABLE 7: CITY OF JACKSONVILLE PLAN TO MEET THE JULY 31, 2015 DEADLINE FOR REDUCTIONS

*These values may change once more information is obtained on actual reductions made by the septic tank phase-out projects. Water quality credits may be reduced prior to the final agreement.

N/A = Not applicable

BMAP PROJECT NUMBER	TOOLBOX APPROACH	TN REDUCTION PROVIDED TO DATE (MT)	TN PLAN FORWARD COMPLETE BY 2015 (MT)	TN TOTAL REDUCTIONS (MT)
COJ-42 through COJ-50	Stormwater Projects	0.739	0.00	0.739
COJ-123	Septic Tank Phase-out Projects (LOCs)	0.000	1.66*	1.660
COJ-52	Septic Tank Phase-out Projects	2.936	0.00	2.936
COJ 51	Public Education Activities	13.145	0.00	13.145
COJ-121	Street Sweeping	5.553	0.00	5.553
COJ-122	BMAP Credit Trading	0.000	40.91*	40.91*
N/A	Total	22.373	42.57*	64.943*

Clay County

Clay County completed the County Road (CR) 739 widening project from CR 218 to the Black Creek Bridge (Project CC-20) in April 2014 (see **Figure 10**). The county also completed College Drive Ponds A and B (Project CC-22), which consisted of permitting and replacing the existing control structure to provide more treatment. This project was completed in April 2014, and the associated nutrient reductions were not calculated. Clay County also continued with its education and outreach efforts (Project CC-12). **Section 2.1.2.1** provides additional details about these efforts.

St. Johns County

St. Johns County has the Masters Tract project under construction (Project SJC-17) with the first phase (pump station, pond, and outfall) scheduled for completion in February 2015 (see **Figure 11**), and the second phase (treatment wetlands, Canal 4 improvements, and stormwater harvesting) scheduled for completion by December 2015.

MS4 Progress Towards Meeting the Marine TMDLs

Figure 12 shows the progress made towards 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 2014 load based on all completed marine MS4 projects (from the BMAP; 2009, 2010, 2011, 2012, and 2013 Progress Reports; and those listed above). The third bar indicates the total

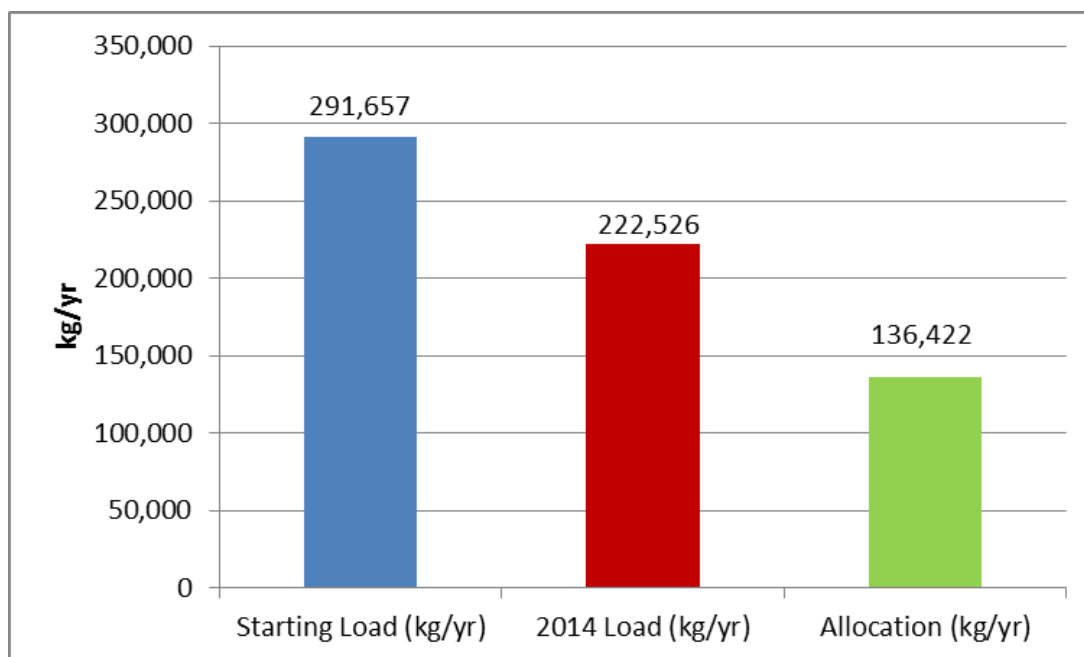
allocation allowed for the MS4s in the marine reach of the river. Based on completed projects, 45% of the TN required reductions have been achieved.



FIGURE 10: CLAY COUNTY CONSTRUCTION OF THE CR 739 WIDENING PROJECT



FIGURE 11: ST. JOHNS COUNTY MASTERS TRACT CONSTRUCTION IN SEPTEMBER 2013

**FIGURE 12: MS4 PROGRESS TOWARDS THE TN MARINE TMDL**

2.1.2.3 Project Implementation Status

The section above described all the activities that were under way during the past year, including efforts that are not yet complete or are ongoing, such as public education. The MS4 projects that were completed during the last year and their associated load reductions are shown in **Table 8** for the marine reach. The MS4s in the freshwater reach have met the required TN and TP reductions; therefore, no additional projects were completed during the reporting period.

TABLE 8: MS4 PROJECTS COMPLETED IN THE MARINE REACH IN 2014

N/A = Not applicable

ENTITY	PROJECT NUMBER	DESCRIPTION	TN PROJECT REDUCTION (KG/YR)
Clay County	CC-20	CR 739 Widening from CR 218 to the Black Creek Bridge	45
Clay County	CC-22	College Drive Ponds A and B	Not quantified
City of Jacksonville	COJ-42	LSJR Upstream of Trout River – McCoys Creek Pond C	175
Total	N/A	N/A	220

2.1.3 URBAN STORMWATER

2.1.3.1 Freshwater Reach

City of Palatka

The city of Palatka completed the construction of the Downtown Watershed First-Flush Treatment project (Project PAL-7). The project included the construction of two stormwater retention ponds and associated collection facilities along the riverfront that are designed to serve new and existing development. The net result is a reduction of TN and TP compared with the predevelopment condition. Both ponds are functioning as designed.

Clay County

Clay County continued with the established water quality trading mechanism with CCUA (an interlocal agreement was executed in September 2009) (Project CC-6). Clay County also continued with its education and outreach efforts (Project CC-4). Additional details about these efforts are included in **Section 2.1.2.1.**

Putnam County

Putnam County continued its public education and outreach efforts (Project PUT-8). The East Putnam County Regional WWTF will go online in May 2015. Therefore, the Hiawatha WWTF (Project PUT-2) and septic tanks in the area (Project PUT-3) will be phased out by that time. In the adopted BMAP, the TN and TP credits for the septic tank phase-out project were based on a provisional calculation method that assumed all septic tanks within 300 meters of a waterbody contributed nutrients to surface waters.

Following BMAP adoption, the department contracted with Florida State University to develop the ArcNLET model to estimate the TN contributions from septic tanks based on local soil and ground water conditions. Using the ArcNLET model, the estimated load reductions from the septic tank phase-out project are 705 kg/yr of TN. This revised estimate replaces the credits in the adopted BMAP of 1,097 kg/yr of TN. The balance of the TN required reductions was added to the county's Algal Initiative project (Project PUT-6). The TP reductions shown in the BMAP for this project were not changed.

St. Johns County

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

Town of Welaka

The town of Welaka completed a septic tank phase-out project to meet its BMAP required reductions. As mentioned above, the ArcNLET model was used to update the estimated load reductions from this project. The updated reductions are 409.5 kg/yr of TN. This revised estimate replaces the credits in the adopted BMAP of 490.0 kg/yr of TN. Although the new reductions are less than the original BMAP reductions, Welaka still has a credit in the BMAP. The TP reductions shown in the BMAP for this project were not changed.

Non-MS4 Progress Towards Meeting the Freshwater TMDLs

Figure 13 and **Figure 14** show the progress made towards 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 2014 load based on all completed freshwater non-MS4 projects (from the BMAP; 2009, 2010, 2011, 2012, and 2013 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 87% of the TN reductions.

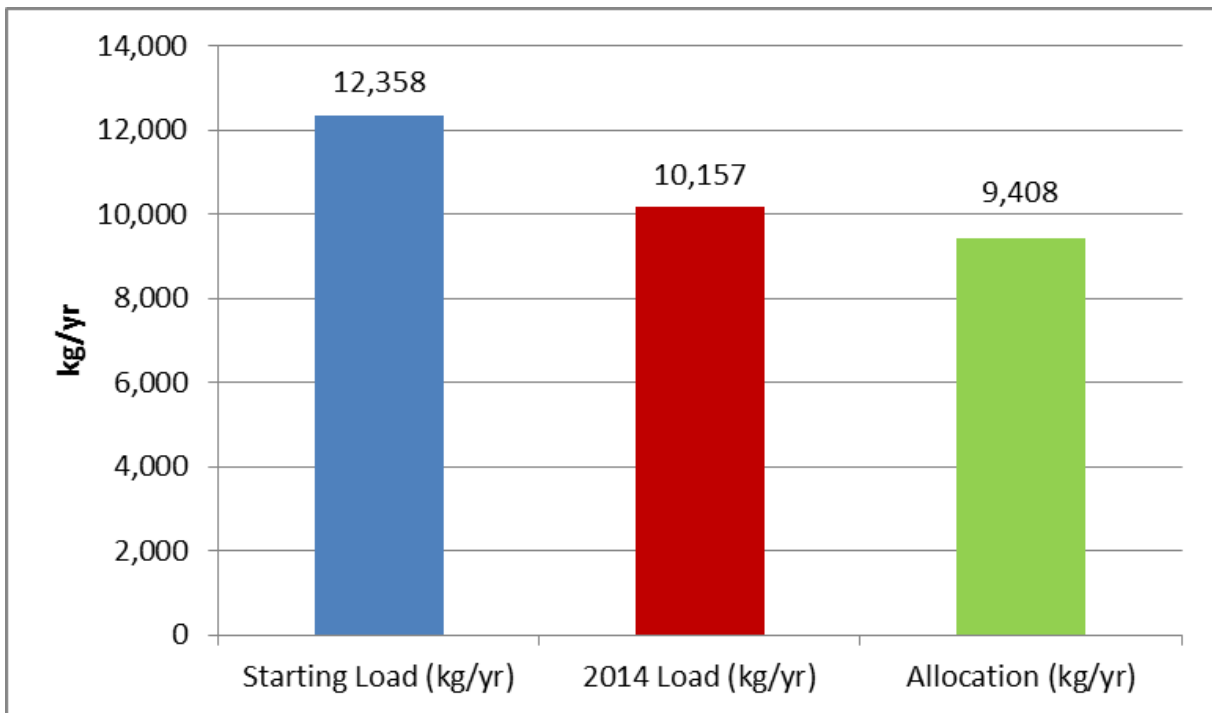


FIGURE 13: NON-MS4 PROGRESS TOWARDS THE TP FRESHWATER TMDL

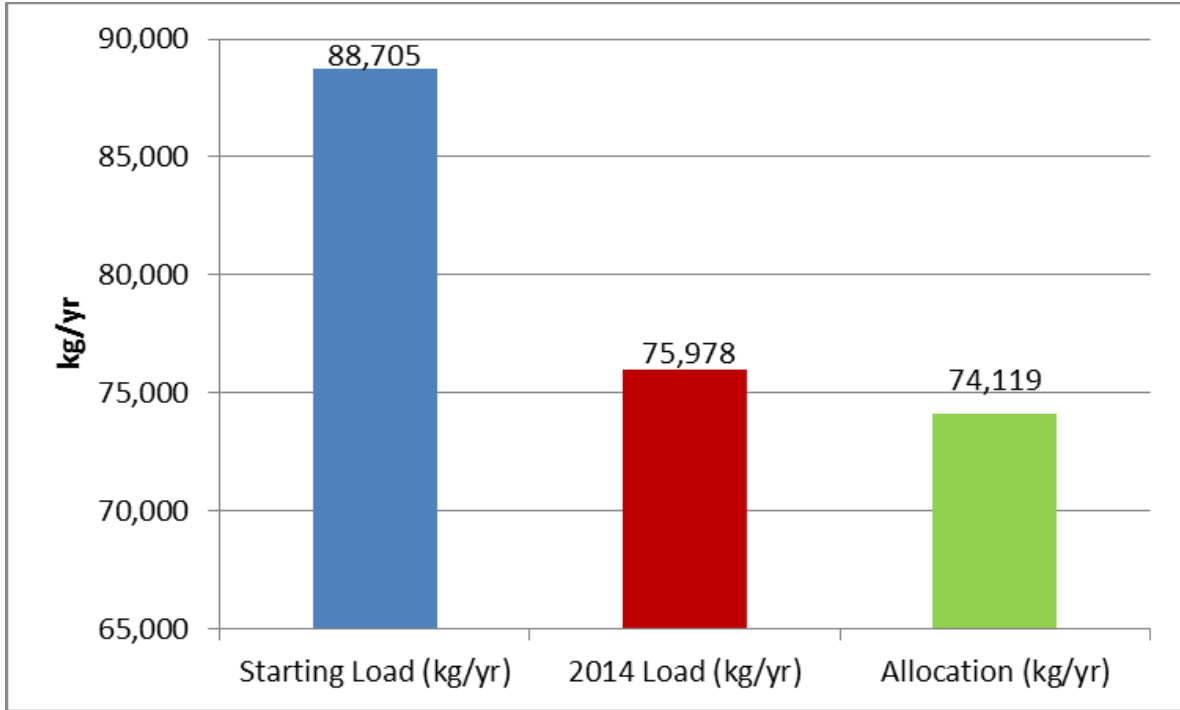


FIGURE 14: NON-MS4 PROGRESS TOWARDS THE TN FRESHWATER TMDL

2.1.3.2 Project Implementation Status

The section above described all of the activities that were under way during the past year, including efforts that are not yet complete or are continuous, such as public education. The non-MS4 projects completed during the last year and their associated load reductions are shown in **Table 9** for the freshwater reach.

TABLE 9: NON-MS4 PROJECTS COMPLETED IN THE FRESHWATER REACH IN 2014

N/A = Not applicable

ENTITY	PROJECT NUMBER	DESCRIPTION	TP PROJECT REDUCTION (KG/YR)	TN PROJECT REDUCTION (KG/YR)
Palatka Non-MS4	PAL-7	Downtown Watershed First-Flush Treatment	0.3	2
Total	N/A	N/A	0.3	2

2.1.3.3 Marine Reach

Camp Blanding

Camp Blanding and the department determined a new compliance schedule for Camp Blanding's swale regrading project. Through 2013, Camp Blanding regraded 70 miles of swales (Project CB-1) and will regrade an additional 80 miles of swales (Project CB-4) to meet the remainder of the BMAP reductions.

Camp Blanding's Conservation Program is the new lead for the BMAP project execution. As of the end of December 2014, the ditch regrading project for the remaining swales was just beginning. To aid in project implementation, Camp Blanding is developing a comprehensive Geographic Information System (GIS) database of the swale system, including type and condition. At the end of the reporting period, 5% of the cantonment area had been surveyed and inserted into the GIS database for management.

In addition, Camp Blanding and the department completed negotiations on an additional eight miles of swale regrading due to missing the BMAP project (Project CB-1) deadline. The consent letter from the department was signed in January 2015 by Camp Blanding's base commander, and work will begin on the additional swale regrading.

Camp Blanding also identified stormwater treatment projects completed since BMAP adoption that are eligible for BMAP credit. These projects total 48 kg/yr of TN reductions (Project CB-3).

Clay County

Clay County continued with its education and outreach efforts (Project CC-17). **Section 2.1.2.1** includes additional details about these efforts.

St. Johns County

St. Johns County has the Masters Tract project (Project SJC-17) under construction (see **Section 2.1.2.2** for more details) (**Figure 15**). The county completed the design of improvements to the Deep Creek West RST facility in 2013, and the project is currently in construction (Project SJC-29). The county will take over ownership of the facility in 2016.

In 2014, an alternatives analysis study was performed for siting an additional RST facility. The CR 13 Culvert #8 (SJC-33) baffle box project was constructed to help to reduce nutrient loading from this area of the county. The county is completing the design of a stormwater harvesting addition to the Masters Tract RST (Project SCJ-26). Construction will be part of the second phase of construction of Masters Tract and should be completed by December 2015.

Non-MS4 Progress Towards Meeting the Marine TMDL

Figure 16 shows the progress made 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 2014 load based on all completed marine non-MS4 projects (from the BMAP;

2009, 2010, 2011, 2012, and 2013 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 15: ST. JOHNS COUNTY WET DETENTION POND CONSTRUCTION AT MASTERS TRACT

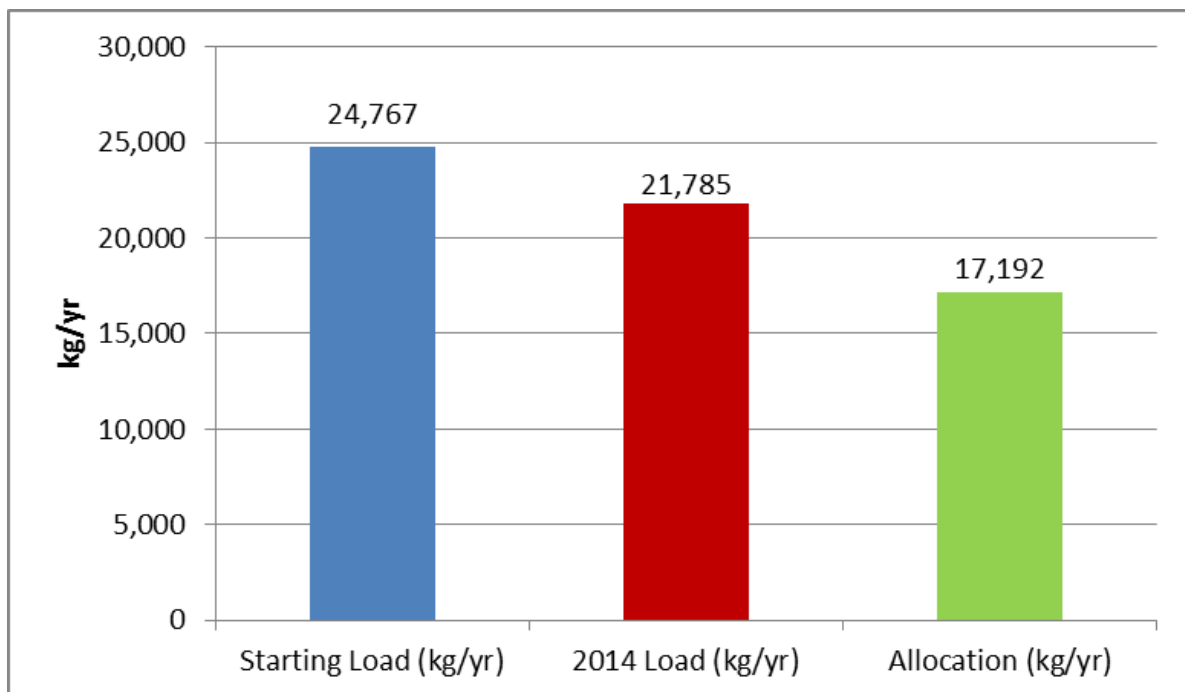


FIGURE 16: NON-MS4 PROGRESS TOWARDS THE TN MARINE TMDL

2.1.3.4 Project Implementation Status

The section above described all the efforts in the past year related to project implementation, including design and construction. The non-MS4 projects completed during the last year and their associated load reductions are shown in **Table 10** for the marine reach.

TABLE 10: NON-MS4 PROJECTS COMPLETED IN THE MARINE REACH FOR TN IN 2014

N/A = Not applicable

ENTITY	PROJECT NUMBER	DESCRIPTION	TN PROJECT REDUCTION (KG/YR)
Camp Blanding	CB-1	Regrade existing swale system (completed through 2013)	706
Camp Blanding	CB-3	Completed stormwater projects	48
St. Johns County	SJC-35	CR 13 Culvert Box #8	68
Total	N/A	N/A	822

2.1.4 AGRICULTURE

2.1.4.1 BMP Implementation Status

In 2014, FDACS' Office of Agricultural Water Policy (OAWP) staff signed up growers under the vegetable and agronomic crop, sod, cow/calf, and nursery BMP manuals, enrolling an additional 22,671 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 2.1.4.3** includes further discussion of the outreach effort and its results.

Table 11 lists the cumulative enrollment numbers, and **Figure 17** shows the enrolled parcels. To date, no producers have opted to monitor water quality instead of implementing BMPs. The enrollment of agricultural acreage in FDACS' BMPs in the LSJR Basin has not reached the 100% target contained in the BMAP. As shown in **Table 11**, enrollment in the LSJR BMAP area as of December 31, 2014, is 84,639, or 76% of the target enrollment. In the Tri-County Agricultural Area (TCAA), an area of specific concern, the enrollment is 53,347 acres, or 79% of the TCAA agricultural acreage. **Table 12** provides an estimate of load reductions due to BMP implementation and the construction of SJRWMD RST facilities.

TABLE 11: AGRICULTURAL ACRES ENROLLED IN BMPs AS OF DECEMBER 31, 2014

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 NOTICES OF INTENT (NOIS)	REMAINING ACREAGE ²
Pasture	55,457	55,547	Cow/Calf, Future (Hay)	53,874	64	1,673
Row/Field/Mixed Crops	42,546	42,546	Vegetable/Agronomic Crops	27,066	56	15,480
Fallow Cropland (out of production)	1,446	N/A	N/A	N/A	N/A	N/A
Horse Farm	3,145	3,145	Equine (adopted March 2012)	122	7	3,023
Citrus	375	375	Ridge Citrus, Statewide Citrus	44	3	331
Abandoned Citrus	30	N/A	No enrollment needed	N/A	N/A	N/A
Tree Crops	298	298	Specialty Fruit & Nut	64	4	234
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	509	17	2,360
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	N/A	84,639	145	26,642

TABLE 12: AGRICULTURAL TN AND TP LOAD REDUCTION ALLOCATION AND ESTIMATED REDUCTIONS IN LOADS FROM BMPs AND RSTs
¹ Estimated reductions are based on BMPs for vegetable/row crops only. FDACS is currently working to enroll those producers who are not currently enrolled in the BMP Program for their specific commodities. The estimated reductions for TN and TP will increase once FDACS, the department, and SJRWMD determine a method for calculation of reductions associated with other commodities. The reductions will also change once a reduction credit is given for acreage that is no longer in agricultural production.

² RSTs were constructed by the SJRWMD. The reduction is associated with the Deep Creek RST and Dog Branch RST minus credits for operations and maintenance (O&M) given to St. Johns County and Putnam County, respectively.

REDUCTION CATEGORY	TN FRESHWATER (KG/YR)	TP FRESHWATER (KG/YR)	TN MARINE (KG/YR)
Load Reduction Allocation	116,364	12,481	8,630
Estimated Load Reductions via BMPs ¹	68,347	3,875	N/A
Estimated Load Reduction via completed RSTs ²	9,644	3,954	N/A
Remaining Load Reductions Needed	38,373	4,652	8,630

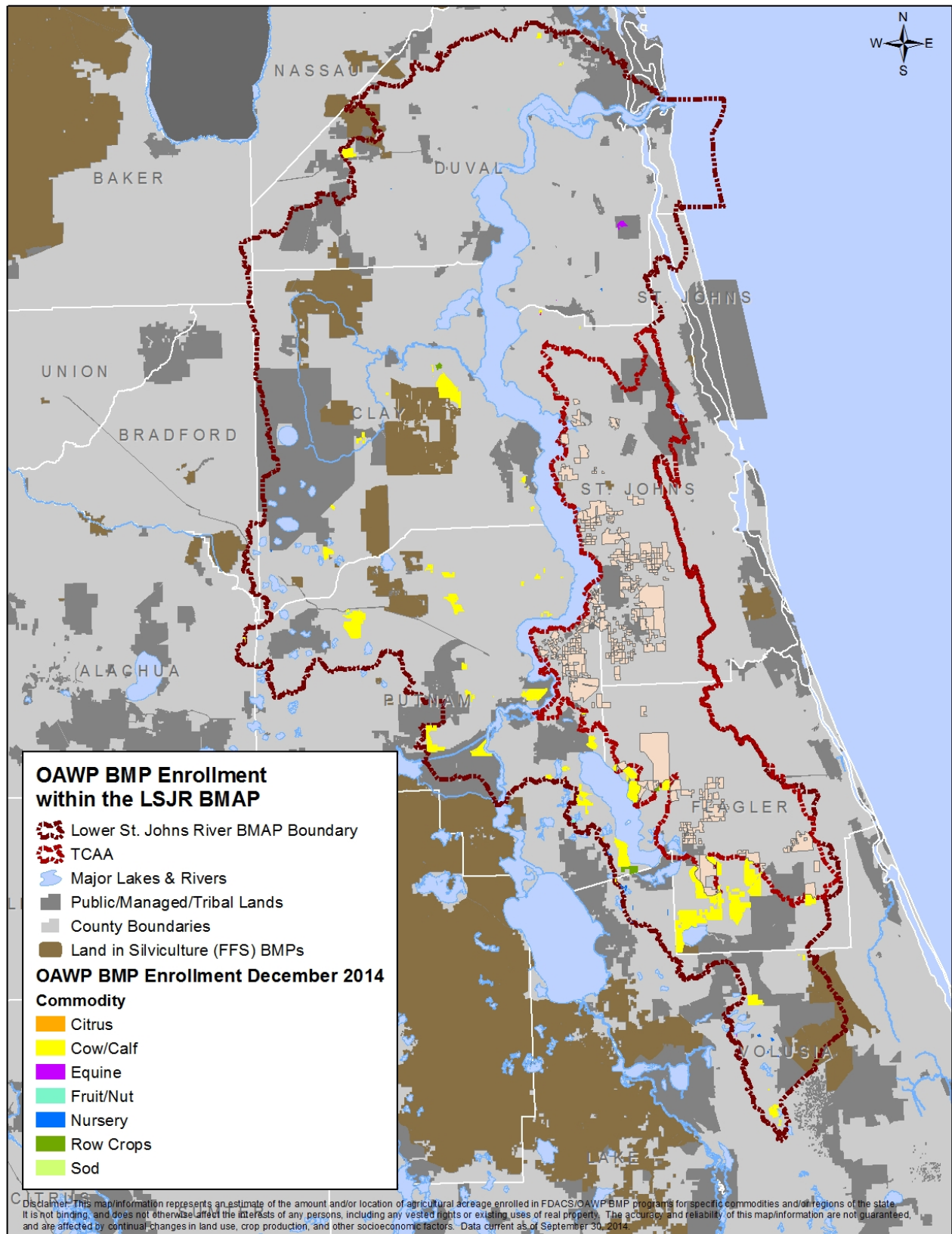


FIGURE 17: MAP OF AGRICULTURAL BMP ENROLLMENT IN THE LSJR BASIN

The statewide nursery manual revision was adopted in June 2014 and now includes practices related to in-ground and cut foliage production methods, in addition to container operations. Revisions to the vegetable/row crop manual have been initiated, with adoption anticipated in mid- to late 2015. A dairy manual is also under development, with adoption slated for 2015.

The TCAA Water Management Partnership formed in 2011 has made significant progress in working with growers to implement irrigation system upgrades and fertilizer management practices to reduce nutrient loadings to the LSJR and enhance water conservation. Partnership activities in 2014 focused on providing cost-share to growers for alternative irrigation systems and fertilizer banding equipment. Further discussion is provided below on partnership efforts, along with a listing and some examples of approved projects and practices.

Agricultural Load Reduction Allocation and BMP Load Reduction Estimates

Table 12 lists the reductions required of agricultural land uses in the LSJR Basin and the estimated load reductions achieved through the implementation of BMPs by vegetable/row crop operations. Due to 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 were collected. In addition, some categories of agricultural land use may include acreage that is not in production or that is not actually 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 the Department and SJRWMD to determine more accurately the agricultural acreage in the basin.

2.1.4.2 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 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.
- Department.
- SJRWMD.
- United States 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 that currently are considered for funding by the TCAA Water Management Partnership include the following (see **Figure 18** through **Figure 21**); however, other ideas for projects that would further the program objective may be proposed:

- Projects:
 - o Surface and subsurface drip irrigation.
 - o Overhead irrigation.
 - o Tailwater recovery.

- o Regional water reuse.
- o Regional wet detention.

— Practices/Equipment:

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

The growers and agencies (FDACS, department, 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, the TCAA Water Management Partnership projects treat approximately 1,276 acres. Estimated TN and TP reductions associated with these projects are 5,053 and 1,374 lbs/yr, respectively. Additionally, it is estimated that these projects save 101 million gallons of water per year.

Since 2012, the purchase of 16 fertilizer banding machines also has been approved and completed. Fertilizer banding has been implemented on 16 farms and applied to approximately 11,243 acres. Banding applications have resulted in estimated TN and TP reductions of 24,781 and 9,892 lbs/yr, respectively. Approved irrigation projects include the following:

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



FIGURE 18: OVERHEAD PIVOT IRRIGATION ON SOD WITH FERTIGATION



FIGURE 19: INSTALLATION OF IRRIDRAIN SYSTEM



FIGURE 20: AGRICULTURAL FERTILIZER BANDING EQUIPMENT



FIGURE 21: INSTALLATION OF SUBSURFACE DRIP TAPE

To be eligible for cost-share funding, TCAA growers must be enrolled in 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. SJRWMD has provided \$2.25 million in cost-share for the partnership, with \$750,000 of that dedicated to the purchase of fertilizer banding equipment. FDACS provided a total of \$1 million in fiscal years 2013–14 and 2014–15. The department contributed \$1.9 million in fiscal year 2014–15 for water management projects and banding equipment, administered through the SJRWMD. The department and FDACS are providing the funds to monitor water quality and conservation benefits for four of the approved projects.

Through the National Water Quality Incentives Program, the NRCS provided increased targeted cost-share in two specified 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 more than \$827,000. The NRCS plans to continue to set aside funds for the TCAA.

UF–IFAS held several workshops and demonstration days to promote 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 help inform farmers about associated design requirements, benefits, and costs.

The partnership is intended to be perpetual, in order 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.

2.1.4.3 BMP Compliance Process

To ensure that agricultural landowners know of their statutory responsibility to implement BMPs in the BMAP area, in 2013 FDACS did a broad mail-out (about 2,400 letters) to landowners with property of 10 acres or more with a county agricultural tax classification, and to nurseries of all sizes. A large number of these properties have 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 have been enrolled in FDACS' BMPs or

are scheduled for enrollment. FDACS' staff and contractors are conducting follow up with those who responded to the department's compliance assistance letter.

The Florida Forest Service indicates that approximately 81,442 acres were enrolled in forestry BMPs from September 2013 through December 2014 as a result of the mail-out. Of this number, 30,140 acres were enrolled from January 1, 2014, through December 31, 2014. FDACS' OAWP reports that approximately 28,615 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.

2.1.4.4 RST Facilities

The SJRWMD completed two RST facilities, Deep Creek West (also known as Yarborough) and Dog Branch (also known as Edgefield), in the TCAA. 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.

Differences in nutrient loads entering and exiting the Deep Creek West facility (inflow canal load versus wetland outflow load) are calculated to generate the actual annual total load reductions and overall RST treatment efficiency. Annual TN reductions ranged from 2,932 kg in 2009, 2,809 kg in 2010, 4,387 kg in 2011, 1,770 kg in 2012, 2,718 in 2013, and 2,628 kg in 2014. The annual average nitrogen reduction for 2009 through 2014 was 2,875 kg/yr, which exceeds the estimated TN load reductions (1,000 kg/yr) outlined in the LSJR Main Stem BMAP for the Deep Creek West RST.

For the Deep Creek West RST, annual TP reductions range from 1,361 kg in 2009, 1,299 kg in 2010, 4,387 kg in 2011, 1,770 kg in 2012, 2,718 kg in 2013, and 785 kg in 2014. The annual average phosphorus reduction for 2009 through 2014 was 1,336 kg/yr, which also exceeds the estimated TP load reductions (818 kg/yr) outlined in the LSJR Main Stem BMAP. In general, greater treatment efficiencies and reductions are associated with storm events, while treatment under ambient conditions can be minimal. The overall treatment efficiencies for the Deep Creek West RST system from 2009–14 were approximately 48% for TN and 51% for TP.

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 are functioning under baseflow conditions due to hydraulic short circuiting and dead zones throughout the wetland. The SJRWMD and St. Johns County started construction in July 2014 to increase flow and storage volumes in the pond; this will increase the wet area of the wetland, thus increasing residence time and treatment. Construction is scheduled for completion this summer.

This is the first year that annual total load reductions (2009–14) and RST treatment efficiency have been calculated for the Dog Branch RST. Previous reports gave an account of reductions based on concentrations in and out of the RST due to the absence of flow data. Flow volumes in the RST have been generated for all years using a water budget equation and the pumped volumes into the RST.

Differences in nutrient loads entering and exiting the Dog Branch facility (inflow canal load versus wetland outflow load) are calculated to generate the annual total load reductions and overall RST treatment efficiency. Annual TN reductions range from 10,480 kg in 2009, 2,127 kg in 2010, 4,725 kg in 2011, 8,852 kg in 2012, 8,104 in 2013, and 11,766 kg in 2014. The annual average nitrogen reduction for 2009 through 2014 was 7,676 kg/yr, which exceeds the estimated TN load reductions (2,409 kg/yr) outlined in the LSJR Main Stem BMAP for the Dog Branch RST.

For the Dog Branch RST, annual reductions in TP range from 4,515 kg in 2009, 1,138 kg in 2010, 2,291 kg in 2011, 3,310 kg in 2012, 3,572 kg in 2013, and 4,030 kg in 2014. The annual average phosphorus reduction for 2009 through 2014 was 3,143 kg/yr, which also exceeds the estimated TP load reductions (1,091 kg/yr) outlined in the LSJR Main Stem BMAP. Similar to the Deep Creek West RST, greater treatment efficiencies and reductions are associated with storm events, while treatment under ambient conditions can be minimal. The overall treatment efficiencies for the Dog Branch RST system from 2009–14 were approximately 66% for TN and 67% for TP.

2.2 IMPROVING SCIENTIFIC UNDERSTANDING

2.2.1 WATER QUALITY MONITORING

2.2.1.1 Freshwater Reach for the Chlorophyll-*a* Target

The SJRWMD is conducting ambient freshwater sampling for six stations, and these data are regularly uploaded to the Florida Storage and Retrieval (STORET) database. In addition, Station SJRCC (in WBID L) has been restored and is being monitored two times per month, including full water chemistry.

2.2.1.2 Marine Reach for the DO Target

Compliance with the DO target in the marine reach of the river is determined through data from three continuous DO stations, where samples are collected every 15 minutes. The United States Geological Survey (USGS) station at Dames Point is an existing station, and DO was sampled at this station throughout the last year. The data from this station are maintained by USGS and can be accessed through their website.

There are also two BMAP stations at Fulton Point and Clapboard Creek. The department operates and maintains these stations and stores the continuous DO data. At the Fulton Point station, the channel marker to which the DO sondes were attached to was hit by a boat in March 2012 and by another boat in July 2012. Therefore, DO data from this station were not collected for most of 2012 and all of 2013. In March 2014, the sondes were redeployed at the range finder, which is approximately 648 meters east of the historical location of the channel marker. The DO sondes at the Clapboard Creek station went missing in early February 2013; therefore, data were not collected for the majority of 2013. In September 2014, the department installed new sondes at the Clapboard Creek station. Therefore, for both BMAP DO stations, equipment had to be reinstalled and data were collected for only a portion of 2014.

2.2.1.3 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. For the ambient monitoring, the SJRWMD samples 16 stations, of which four are sampled biweekly, seven are sampled monthly, and five are sampled bimonthly. 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, the city of Jacksonville maintains a

long-term network, which provides supporting data for the BMAP monitoring plan (see **Figure 22**). All of the ambient monitoring data are uploaded to Florida STORET regularly.



FIGURE 22: CITY OF JACKSONVILLE LSJR WATER QUALITY MONITORING

2.2.1.4 Continuous Real-Time *In Situ* Monitoring

In 2014, two programs were initiated to expand the network of autonomous, *in situ* water quality sensors to provide real-time access to river and tributary conditions. The National Oceanic and Atmospheric Administration (NOAA) St. John's River Operational Forecast System monitoring network began operations in 2014, and now includes 20 sites between the mouth of the river and Buffalo Bluff, located upstream at river mile 90. Although the primary objective of the monitoring network is the enhancement of maritime navigation and safety, most of the sites include real-time data on water temperature and salinity, as well as currents and wind speed and direction. [Data from the network](#) can be accessed online.

In addition to this network, the SJRWMD, with grant funds provided by the department, began deploying an autonomous monitoring network designed to provide data necessary for the establishment of TMDLs and the monitoring of target compliance. Three stations are planned for the LSJR, with one at Shands Pier and two others soon to be functioning in the Crescent Lake Basin. These installations will have the capability to monitor water temperature, specific conductance, DO, chlorophyll-*a*, turbidity, and orthophosphate. Data for the SJRWMD autonomous network will be stored on the SJRWMD's HYDSTRA database.

2.2.1.5 United States Army Corps of Engineers (USACOE) Monitoring

The USACOE completed a comprehensive study, which examined the effects of deepening the federally maintained channel in the LSJR. The agency determined that channel deepening would have minor effects on water quality, including salinity. However, in coordination with regulatory agencies, the USACOE agreed to monitor how the proposed deepening may affect salinity levels in the LSJR main stem and selected tributaries. The monitoring plan includes establishing baseline salinity levels prior to construction, as well as monitoring salinity levels during construction (an estimated six years) and postconstruction (up to 10 years).

In addition to establishing a salinity baseline prior to construction, the preconstruction gauging will serve as calibration and validation data for hydrology and hydrodynamic models. Since very few continuous salinity data have been collected in the LSJR tributaries, the focus of the preconstruction gauging and modeling is to collect the data necessary to establish baseline salinities in the tributaries and calibrate and validate hydrology and hydrodynamic models in the tributaries.

To fulfill environmental resource monitoring requirements, preconstruction tributary salinity monitoring will focus on freshwater wetland resource zones where there is a transition between wetlands being impacted by salinity now and adjacent upstream wetlands that will be potentially impacted in the future. Freshwater flow, water level, and salinity will be collected for a one-year period. Salinity gauge locations for the model calibration/validation data collection effort may be different than those for the environmental resource monitoring requirements.

The continuous monitoring stations (readings at 30-minute intervals) will be located in the upstream reaches of the tidal portions of Clapboard Creek, Dunns Creek, Broward River, Trout River, Pottsburg Creek, Cedar River, Ortega River, and Julington Creek. Parameters of interest include rainfall, flow, depth, temperature, specific conductivity, and salinity. Sampling and data management is being coordinated with the department's Northeast District office.

2.2.2 ALGAL INITIATIVE AND UPSTREAM PROJECTS

The development of the St. Johns River Nutrient Reduction Initiative ("Algal Initiative") is proceeding at a steady pace. A broad range of project options has been identified, and the SJRWMD has completed two RST facilities (see **Section 2.1.4.4**). 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. 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 examining numerous upstream project opportunities. The district executed its second year of rough fish harvesting from Lake George, which is just upstream of the LSJR Basin. The 2014 summer harvest of rough fish from Lake George began on May 5, 2014, and ended in mid-September 2014. The 1,392,175 pounds of rough fish removed equates to the removal of 11,137 pounds of phosphorus and 29,235 pounds of nitrogen. The SJRWMD plans to start the 2015 summer harvest of rough fish from Lake George again in May and run the harvest through mid-September 2015.

In addition, projects in the Deep Creek Basin in Volusia County, and in the Wekiva River and Econlockhatchee River Basins, as well as the acquisition of agricultural lands on the shores of Lake Jesup with associated improvements to provide water quality treatment of stormwater entering the lake, are being evaluated.

2.2.3 SJRWMD FUNDING FOR ADDITIONAL NUTRIENT REDUCTIONS

Several cost-share agreements for the expansion of reclaimed water service have been executed, including those with Palatka, JEA, CCUA, Neptune Beach, and NAS Jacksonville. All have been completed with the exception of NAS Jacksonville, which is scheduled for completion in 2015. CCUA and the SJRWMD also entered into an agreement for the construction of a reclaimed water storage reservoir, scheduled to be completed in 2015. The total project cost is approximately \$5.5 million, and it will reduce TN loading to the river by approximately 10,000 lbs/yr.

Per the BMAP, water quality credits are being held for the river to provide reductions over and above what is required to achieve the TMDL. 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 estimated amount of credit reservations by the SJRWMD is 45,503 kg/yr of TN. These reductions will be finally

calculated for adoption in the permit when projects are completed and based on final construction costs and actual nutrient reduction data.

2.3 FUNDING

The city of Atlantic Beach received a \$442,000 grant from the SJRWMD for the Atlantic Beach Country Club reuse facilities.

Clay County received disaster reimbursement funding from the Federal Emergency Management Agency (FEMA) for numerous county roadway projects. Most of the projects were small dirt road maintenance projects that were repaired by the county's public works department. Two projects that exceeded minimum purchasing allowances were designed, bid, and repaired. These projects were for a cross drain on Mallard Road and a ditch paving repair project along Nolan Road.

JEA is participating in several cost-share reclaimed water transmission projects with the SJRWMD. JEA received \$241,493 from the SJRWMD for reclaimed water transmission work performed in 2014.

St. Johns County received SJRWMD grant funding for the Masters Tract and Deep Creek West RST projects through the 2013 legislative appropriations in the amount of \$2,600,000 and \$500,000, respectively. The county also received a Section 319 grant from the department for the Masters Tract project in the amount of \$796,007. The county received \$54,636 from the SJRWMD for the RST alternatives analysis. In addition, the county received \$367,950 in SJRWMD cost-share funding for the Masters Tract stormwater harvesting project.

2.4 SUMMARY OF ACCOMPLISHMENTS

The tables and figures below (**Table 13** and **Figure 23**, **Table 14** and **Figure 24**, and **Table 15** and **Figure 25**) 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 have exceeded their reductions, there are individual stakeholders that still need to make reductions to meet their BMAP allocations.

TABLE 13: PROGRESS TOWARDS THE TP TMDL IN THE FRESHWATER REACH

*Exceeded the total required reductions for the source category.

SOURCE	% OF CONTROLLABLE LOAD	STARTING LOAD (KG/YR)	2014 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%

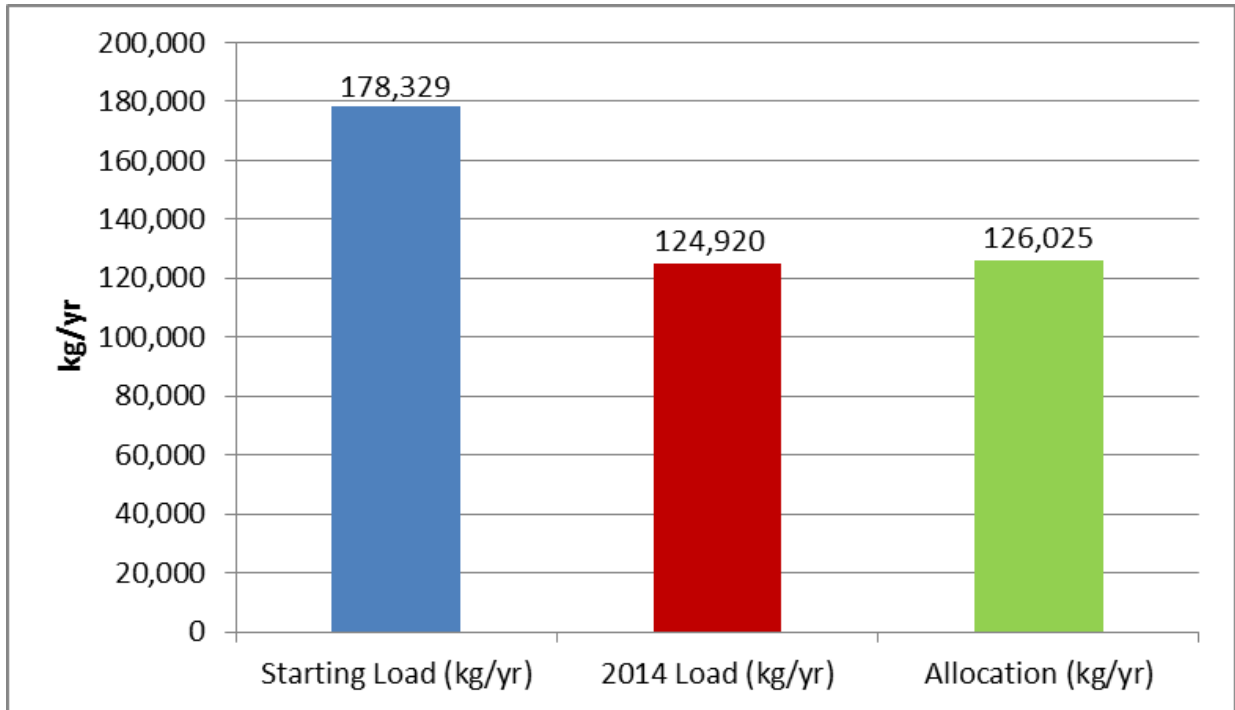


FIGURE 23: PROGRESS TOWARDS THE TP TMDL IN THE FRESHWATER REACH

TABLE 14: PROGRESS TOWARDS THE TN TMDL IN THE FRESHWATER REACH

*Exceeded the total required reductions for the source category.

SOURCE	% OF CONTROLLABLE LOAD	STARTING LOAD (KG/YR)	2013 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	75,978	74,119	1,859	87%
Agriculture	40%	310,700	232,709	194,336	38,373	67%
Total	100%	773,786	512,932	514,340	40,232	84%

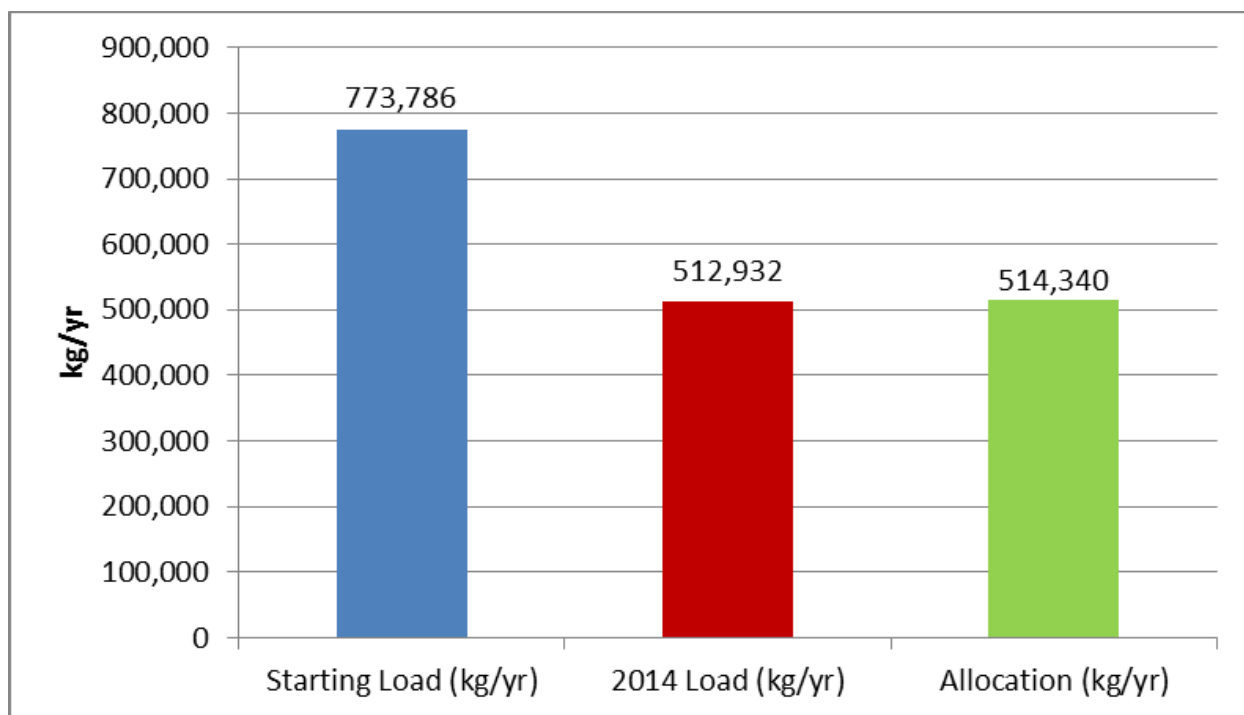


FIGURE 24: PROGRESS TOWARDS THE TN TMDL IN THE FRESHWATER REACH

TABLE 15: PROGRESS TOWARDS THE TN TMDL IN THE MARINE REACH

* Exceeded 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 CONTROLLABLE LOAD	STARTING LOAD (KG/YR)	2013 LOAD (KG/YR)	ALLOCATION (KG/YR)	REMAINING REDUCTIONS (KG/YR)	% COMPLETE
WWTF*	84%	1,786,542	841,351	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	1,098,462	1,036,110	99,327	91%

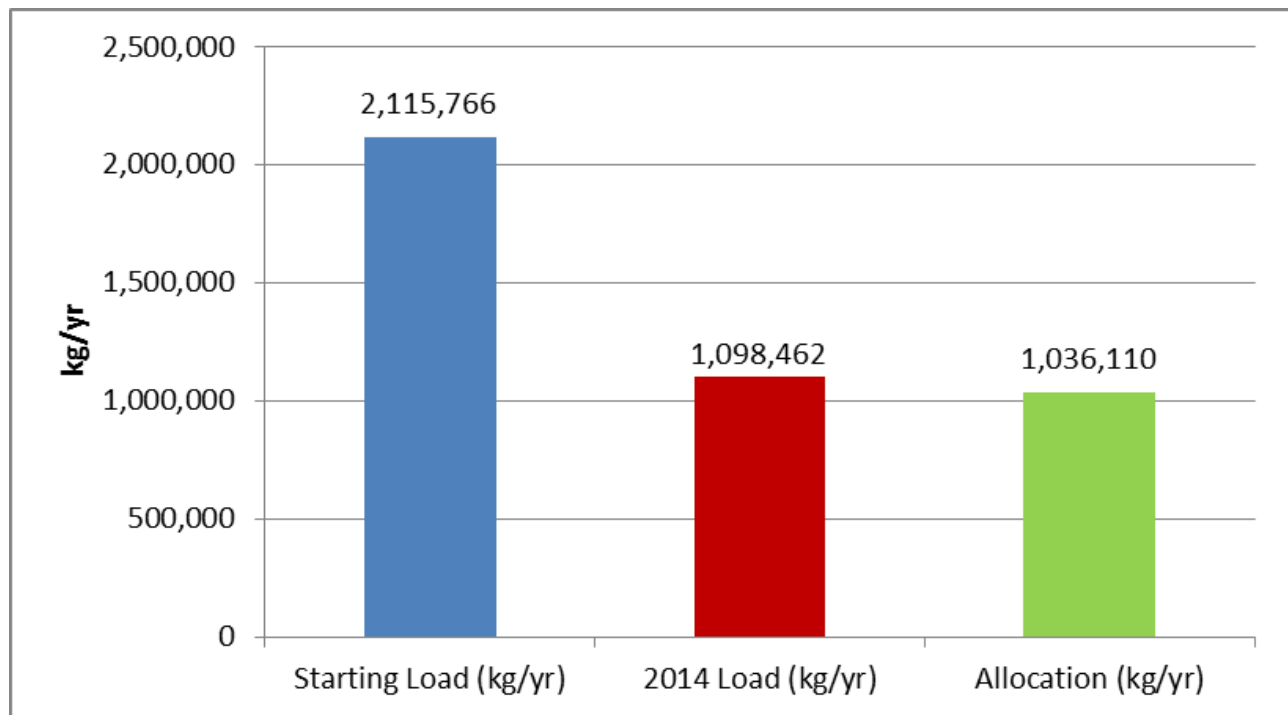


FIGURE 25: PROGRESS TOWARDS THE TN TMDL IN THE MARINE REACH

SECTION 3: UPCOMING YEAR ACTIVITIES

The seventh annual BMAP Progress Report will encompass the period from January 1 to December 31, 2015. **Section 3.1** and **Section 3.2** summarize the activities that will occur during this time.

3.1 UPCOMING EFFORTS BY SOURCE TYPE

3.1.1 MS4s

3.1.1.1 Marine Reach

City of Jacksonville

The city of Jacksonville will complete the LOC septic tank phase-out project (Project COJ-123) and will complete stormwater projects and/or water quality credit trades (Project COJ-122) to meet 50% of the required TN reductions by July 31, 2015.

United States Navy

NAS Jacksonville will complete the project to expand the reuse system (Project USN-2) by October 2015.

3.1.2 URBAN STORMWATER

3.1.2.1 Freshwater Reach

Putnam County

Putnam County will complete the trade with the Hiawatha WWTF (Project PUT-2) and septic tank phase out in May 2015.

3.1.2.2 Marine Reach

Camp Blanding

Camp Blanding will regrade 16 miles of swales, plus two additional miles per the consent letter (Project CB-4), for a total of 18 miles.

3.1.3 AGRICULTURE

FDACS will focus on significantly increasing enrollment in all commodities and on 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' staff will continue to provide coordination and technical support for the partnership. The SJRWMD, department, 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 add up to the target acreage for several reasons:

- Only the acres that are in production and need BMPs will be recorded on the notices of intent 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.
- A significant amount of noncommercial open land, pasture, and forestry acreage is not appropriate for enrollment in FDACS' BMP programs. Many landowners who receive the agricultural tax classification, and whose property may show up under agricultural land use on SJRWMD land use data, do not engage in production agriculture. They may have small gardens, a few animals, or just passive tree growth.

3.2 WATER QUALITY MONITORING

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

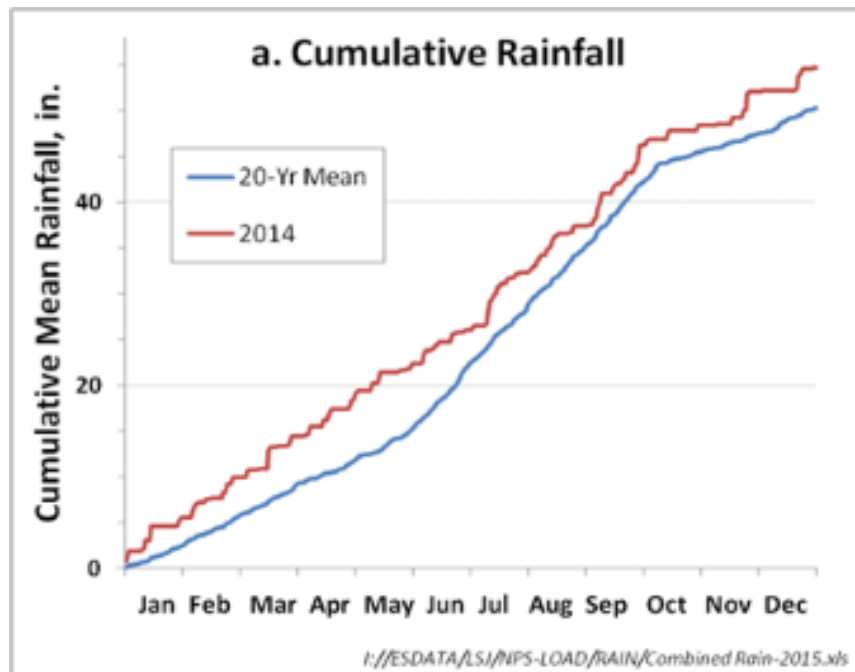
SECTION 4: WATER QUALITY TRENDS

4.1 PRECIPITATION AND HYDROLOGIC CONDITIONS FOR 2014

The unusual rainfall pattern of 2012 and 2013, with above-normal precipitation accumulation in spring, was repeated again in 2014, although spread more evenly among moderate-sized events (**Figure 26**). The largest precipitation “event” of the entire year occurred between May 2 and May 6, producing a total accumulation of 8.3 inches. Precipitation in the Upper and Middle St. Johns River Basins created a discharge pattern entering the LSJR that was similar to the long-term average for the first half of the year, but then greater than the long-term average in the second half of the year (**Figure 27**).

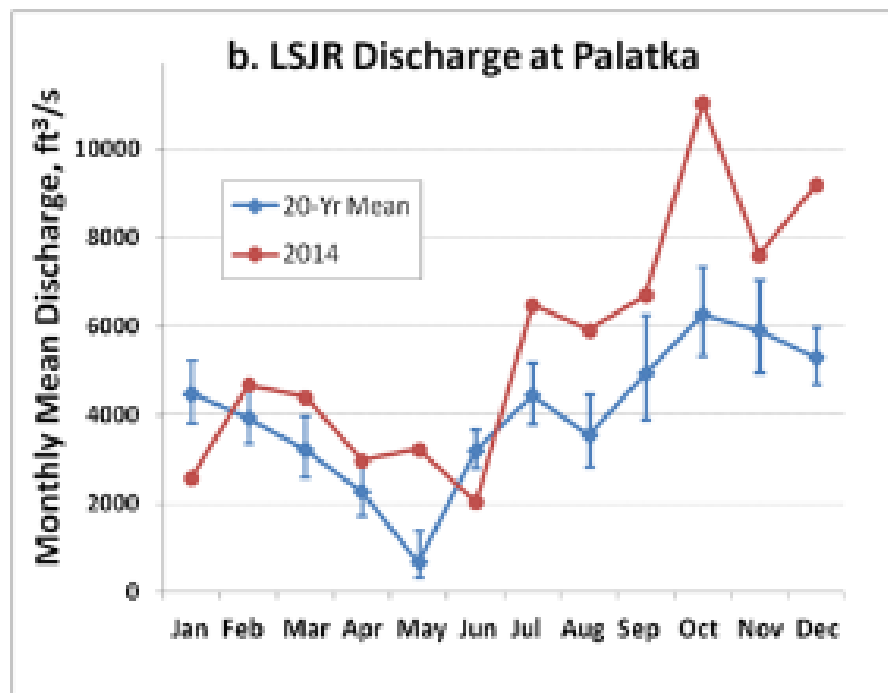
This pattern contrasted to that of Black Creek, which saw higher-than-normal runoff in the first half of the year, receding to normal levels for the second half (see **Figure 28**). Deep Creek, which drains a 60.5-square-mile watershed on the eastern bank of the LSJR, exhibited several large spikes in monthly mean runoff throughout the year relative to its long-term mean (**Figure 28**).

Precipitation and discharge are important drivers of river salinity and nonpoint source loading. Because of the higher-than-normal discharge in 2014, the maximum upstream encroachment of marine salinity reached only to about the mouth of Julington Creek, and then only in short duration spikes accompanying river reverse flows. Doctor’s Lake remained fresh for the entire year, with no water quality samples above the 1,500 mg/L chloride level. Mean May through August salinity in the oligohaline reach was at a low level, and this level was generally exceeded in seven out of 10 years (**Figure 29**).



Note: Rainfall for 2014 is the mean of three long-term precipitation gauges maintained by the SJRWMD and National Weather Service at Elkton, Penny Farms, and Jacksonville.

FIGURE 26: CUMULATIVE RAINFALL, JANUARY 1, 2014–DECEMBER 31, 2014



Note: Palatka discharge is calculated as the sum of the USGS discharge stations Dunns Creek and Buffalo Bluff.

FIGURE 27: MONTHLY MEAN DISCHARGE AT PALATKA, JANUARY 1, 2014–DECEMBER 31, 2014

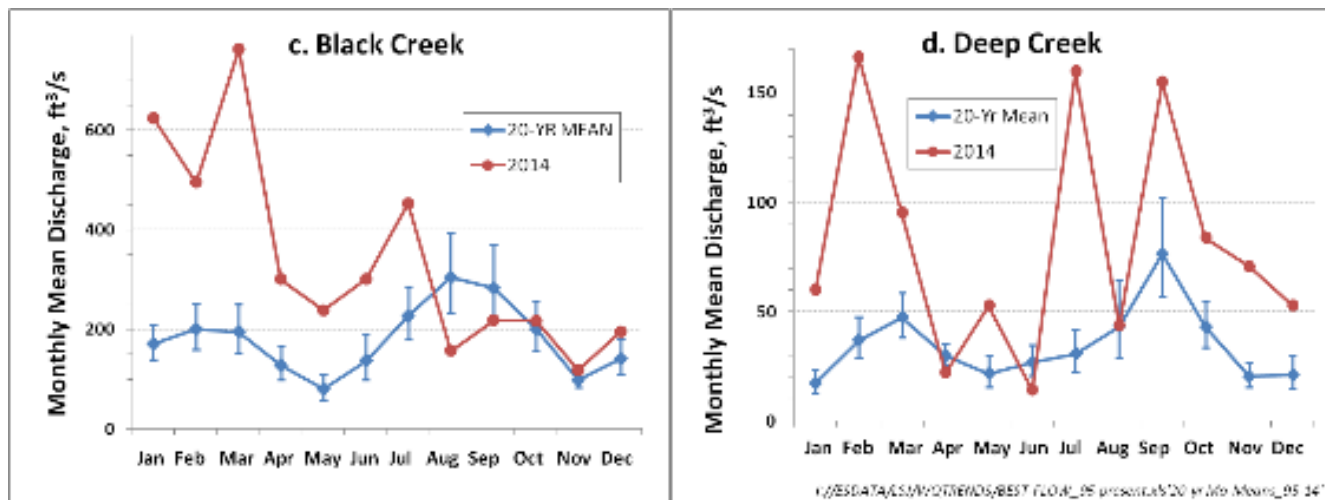
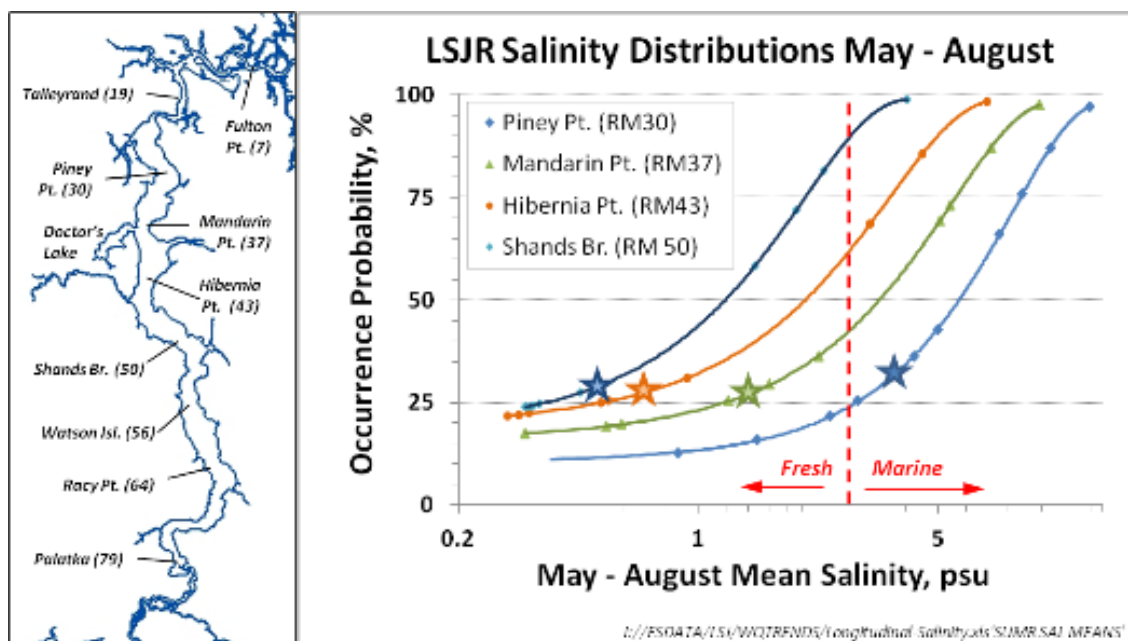


FIGURE 28: MONTHLY MEAN DISCHARGE AT BLACK CREEK (C) AND DEEP CREEK (D), JANUARY 1, 2014–DECEMBER 31, 2014



Note: Salinity distributions based on vertically averaged Environmental Fluid Dynamics Code model predictions from 1996–2005. Stars represent the mean salinity at river sampling locations, and occurrence probability represents the likelihood that a May–August salinity would be less than the value.

FIGURE 29: MEAN SALINITY IN THE OLIGOHALINE REACH OF THE LSJR, MAY 2014–AUGUST 2014

4.2 TRIBUTARY NUTRIENT PATTERNS

Each year the SJRWMD's ambient monitoring water data undergo a standardized compilation to develop a comprehensive assessment of average condition and long-term trends, referred to as the Status

and Trends Assessment (2012 Water Quality Status and Trends).¹ Trends are determined for data collected from 10 to 15 years with the nonparametric time series Mann-Kendall trend test and then reported to the SJRWMD's website. **Table 16** and **Table 17** lists the assessment results for the seventeen tributaries in the LSJR Basin for TN and TP, respectively. The tributary sites are sorted in order of best to worst, based on the Mann-Kendall z-score and predominant land use type. Negative z-scores indicate that there is a decreasing trend in TN or TP, with values less than -1.65 indicating a 90% confidence trend significance, and less than -1.96 indicating a 95% confidence interval (the level used in the SJRWMD Status and Trends Assessment).

The monitored tributaries can be generally subdivided into categories based on the predominant land development in the contributing watershed. In the agriculture category, most monitored tributaries are located in the TCCA. Three of these tributaries are exhibiting a significant downward trend in TN, with a fourth, Sixteen Mile Creek, exhibiting a significant downward trend at the 90% confidence level. In 2012, Florida adopted NNC for inland fresh waters, with the criterion for streams in the SJRWMD (Peninsular Streams category) at 1.54 mg/L TN, and the annual geometric mean not to be exceeded more than once in a three-year span. As an estimate of this criteria exceedance level, **Table 16** lists the 66th percentile annual mean, roughly corresponding to the threshold high concentration that would be expected once every three years. In this group, Dog Branch and Haw Creek appear to be at levels that would potentially exceed the TN criterion.

Most of the urban land use–dominated tributaries are also exhibiting downward trends in TN, with two of them, Moncrief Creek and Cedar River, trending downward at above the 95% and 90% confidence level, respectively. Both of these tributary monitoring sites are below the head of tide and, therefore, could potentially be influenced by mixing with lower TN concentration marine water, although neither is exhibiting a significant upward trend in salinity, reducing this possibility. None of the tributaries in this group exhibits a significant upward trend in TN, and none has 66th percentile annual mean concentrations above the numeric criterion.

Four monitored sites have predominantly undeveloped watersheds, labeled “mixed/rural” in the tables below. Three of these show no significant trend in TN and have very low concentrations. The

¹ St. Johns River Water Management District. 2014. *2012 Water Quality Status and Trends*. Palatka, FL.

exception is Little Haw Creek, which is showing an upward trend in TN, and has a 66th percentile concentration that would potentially exceed the numeric criterion.

TABLE 16: TN CRITERION EXCEEDANCE AND 2014 MEAN CONCENTRATIONS AND TRENDS FROM THE SJRWMD 2014 STATUS AND TRENDS ASSESSMENT

TRIBUTARY	PREDOMINANT LAND USE	1995–2014 66 TH PERCENTILE	2014 MEAN	STATUS AND TRENDS ASSESSMENT TREND	Z-SCORE
Deep Creek	Agriculture	1.41	1.37	Decreasing	-3.679
Hastings Drainage District	Agriculture	1.18	1.13	Decreasing	-2.93
Dog Branch	Agriculture	1.62	1.48	Decreasing	-2.156
Sixteen Mile Creek	Agriculture	1.16	1.08	Stable	-1.648
Moccasin Creek	Agriculture	1.25	1.36	Stable	-1.564
Tocoi Creek	Agriculture	1.16	1.16	Stable	0.506
Haw Creek	Agriculture	1.63	1.41	Stable	1.563
Moncrief Creek	Urban	1.15	0.96	Decreasing	-2.65
Cedar River at State Road 21	Urban	1.22	1.07	Stable	-1.75
Ortega River at Collins	Urban	0.83	0.78	Stable	-1.165
Durbin Creek Racetrack Road	Urban	1.15	1.07	Stable	-0.489
Julington Creek at Highway 13	Urban	1.16	0.81	Stable	-0.337
Big Davis Creek at US 1	Urban	0.83	0.77	Stable	0.413
Rice Creek	Mixed/Rural	0.87	1.18	Stable	-1.25
Black Creek at Highway 209	Mixed/Rural	0.70	0.70	Stable	-0.935
Simms Creek	Mixed/Rural	0.53	0.63	Stable	0.256
Little Haw Creek	Mixed/Rural	1.59	1.66	Increasing	4.24

TP trends for long-term tributary monitoring stations draining watersheds dominated by agriculture are generally flat (see **Table 17**). Two streams, Dog Branch and Haw Creek, are exhibiting significant upward trends in TP. Four of the urban land use–dominated watershed streams exhibit no trends, although one of them, Moncrief Creek, has a downward trend at the 90% confidence level, and Cedar River is trending downward at a level that is nearly significant. Two urban streams, Durbin and Big Davis, are exhibiting significant upward trends in TP. Two undeveloped watershed streams, Simms and Little Haw Creek, are also trending upward. Some of the upward trends in TP may be natural, as floodplain TP export will often increase after a long duration of low precipitation, leading to organic soil dehydration. Very low precipitation levels occurred in 2011 and the early part of 2012, and so recent TP increases may be reflecting rehydration and floodplain export.

The recently adopted numeric TP criterion for peninsular streams is 0.12 mg/L, with the annual geometric mean not to be exceeded more than once in a three-year period. Four of the agriculture-dominated watershed streams and two of the urban-dominated potentially exceed this level.

TABLE 17: TP CRITERION EXCEEDANCE AND 2014 MEAN CONCENTRATIONS AND TRENDS FROM THE SJRWMD 2014 STATUS AND TRENDS ASSESSMENT

TRIBUTARY	PREDOMINANT LAND USE	1995–2014 66 TH PERCENTILE	2014 MEAN	STATUS AND TRENDS ASSESSMENT TREND	Z-SCORE
Moccasin Creek	Agriculture	0.257	0.245	Stable	-1.496
Deep Creek	Agriculture	0.421	0.401	Stable	-0.331
Tocoi Creek	Agriculture	0.110	0.097	Stable	0.198
Sixteen Mile Creek	Agriculture	0.093	0.119	Stable	0.92
Hastings Drainage District	Agriculture	0.262	0.349	Stable	1.517
Dog Branch	Agriculture	0.299	0.447	Increasing	3.032
Haw Creek	Agriculture	0.117	0.185	Increasing	4.168
Moncrief Creek	Urban	0.171	0.140	Stable	-1.771
Cedar River at State Road (SR) 21	Urban	0.183	0.109	Stable	-1.554
Ortega River at Collins	Urban	0.073	0.063	Stable	-0.582
Julington Creek at Hwy. 13	Urban	0.091	0.078	Stable	0.643
Durbin Creek Racetrack Road	Urban	0.074	0.117	Increasing	2.565
Big Davis Creek at US 1	Urban	0.090	0.098	Increasing	2.903
Rice Creek	Mixed/Rural	0.060	0.073	Stable	-0.121
Black Creek at Highway 209	Mixed/Rural	0.087	0.078	Stable	0.737
Simms Creek	Mixed/Rural	0.030	0.031	Increasing	2.706
Little Haw Creek	Mixed/Rural	0.045	0.025	Increasing	3.141

4.3 TRENDS IN LSJR NUTRIENT CONCENTRATIONS

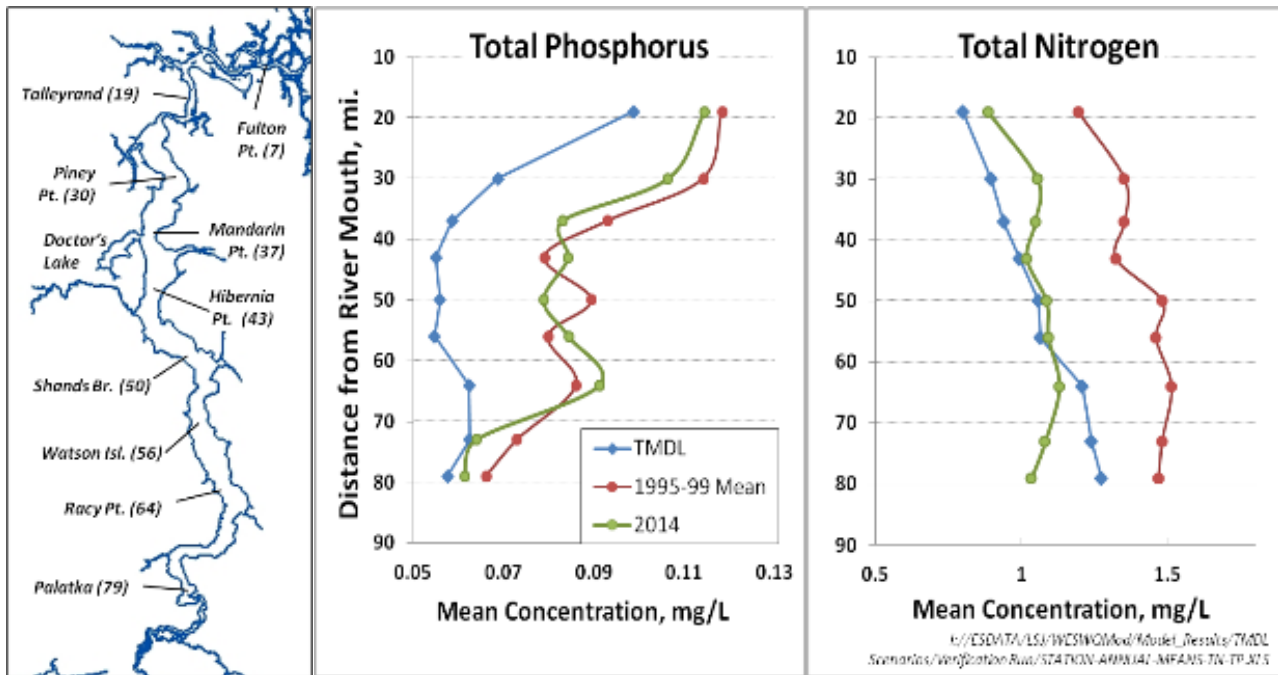
In 2014, average TP concentrations for many LSJR monitoring stations were elevated, approaching those of the 1995–99 TMDL baseline conditions (**Figure 30**). The longitudinal pattern indicates a substantial increase between Palatka and Racy Point. River TN concentrations were relatively low, at levels consistent with those expected to achieve the TMDL target.

Despite the fact that river TP concentrations were high in 2014, TN and TP concentrations are exhibiting a downward trend for most river surface water quality monitoring sites in the LSJR, based on the SJRWMD Status and Trends Assessment for data collected between 1999 and 2013 (SJRWMD 2014).

Figure 31 shows the 2014 assessment results for Lake George and through the LSJR. For most sites,

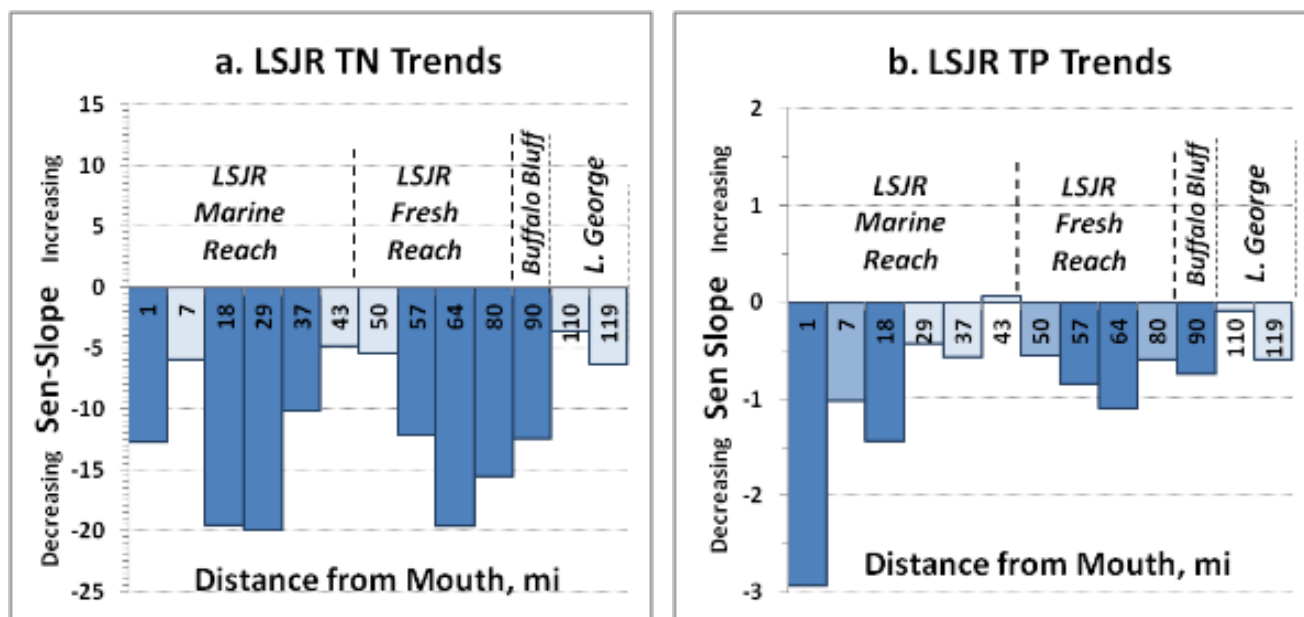
TN and TP are trending downward over the assessment period. Significant downward trends were calculated for LSJR freshwater sites at Racy Point and Watson Island, and for marine reach sites at Talleyrand and the river mouth. It should be kept in mind that significant trends can arise from factors other than the reduction in nutrient load, such as interannual patterns in rainfall and runoff, and the degree of upstream salinity incursion and mixing.

Figure 32 displays the time series from 1995–2014 in annual mean TN and TP at the benchmark LSJR freshwater reach sampling station near Racy Point, located in the “worst-case” WBID K. In 2014, the mean annual TN concentration followed the constant downward trend pattern that has occurred since the early 2000s. In contrast, the elevated 2014 TP annual mean appears to weaken the downward trend that was exhibited from the 1999–2013 assessment. The recent mean annual TP pattern has appeared to fluctuate with no clear trend, and has been increasing since 2011. The mean annual Racy Point TP concentration, at 0.087 mg/L, was the sixth highest observed since 1995.



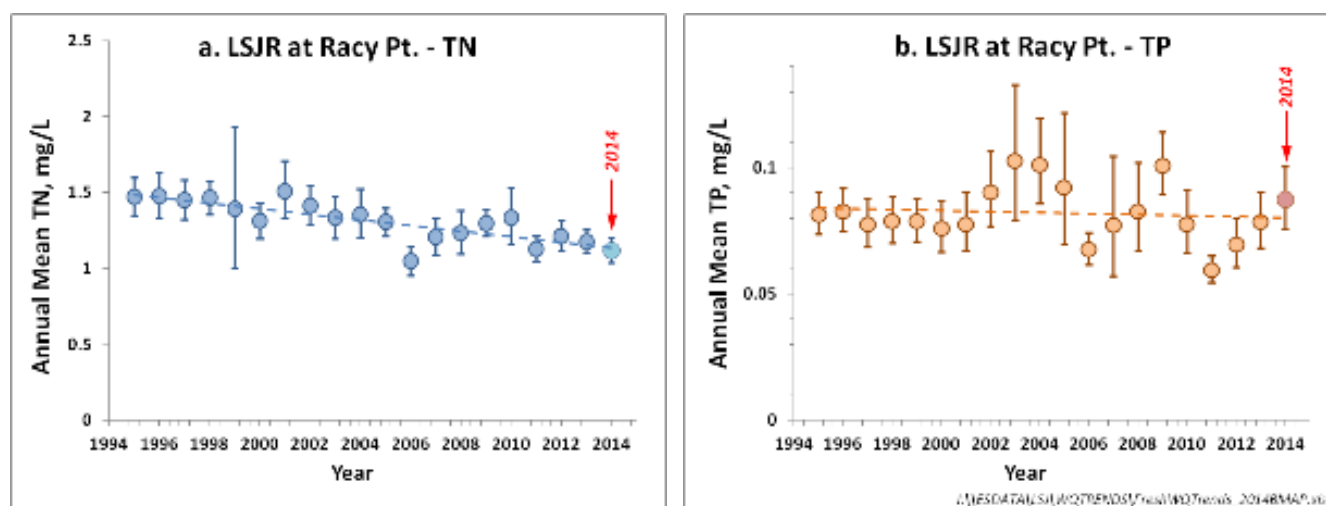
Note: TMDL mean concentrations were derived from the daily values for the verification simulation, based on hydrologic conditions for 1995–99 and all point and nonpoint source discharges at their allocated load. These concentrations are only a general reference, and should not be construed as river targets and compliance with the TMDL, which is based on chlorophyll-a and DO.

FIGURE 30: GEOMETRIC MEAN TP AND TN CONCENTRATIONS FOR THE TMDL CONDITION (BLUE), THE 1995–99 BASELINE CONDITION (RED), AND 2014 (GREEN)



Note: Plotted values are the Mann-Kendall Sen Slope, which is the median slope over the assessment period. Negative values indicate a downward trend, while positive values indicate an upward trend. Dark blue indicates significance at the 95 percent confidence level, which medium blue bars are significant at the 90 percent level.

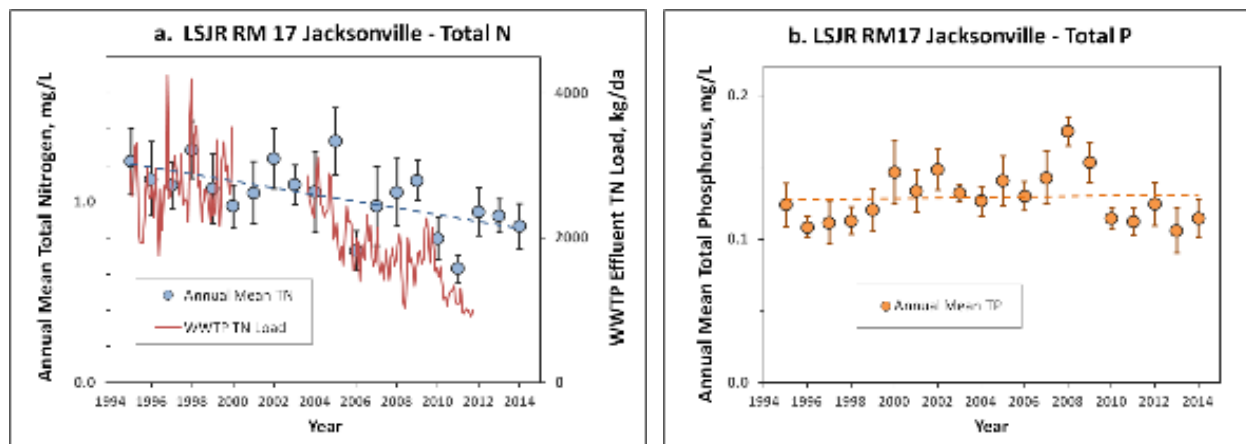
FIGURE 31: RESULTS FROM THE SJRWMD STATUS AND TRENDS ASSESSMENT FOR (A) TN AND (B) TP, BASED ON DATA FROM 1999–2013, FOR STATIONS FROM LAKE GEORGE AND THE LSJR



Note: Means are calculated as the log-normalized mean concentrations, with error bars representing the 95% two-sided confidence interval.

FIGURE 32: ANNUAL GEOMETRIC MEAN TN (A) AND TP (B) CONCENTRATIONS IN THE FRESHWATER REACH OF THE LSJR AT RACY POINT, 1995–2014

A similar pattern is apparent at the long-term marine reach monitoring station in Jacksonville at River Mile 17. Significant downward trends are apparent in nitrogen concentration, and appear to follow the declines in domestic wastewater effluent load reduction since 2003 (**Figure 33**). While the long-term pattern in TP since 1995 appears flat, the trend since the early 2000s is downward. Long-term trends in the oligohaline reach at monitoring sites near Mandarin Point and Piney Point (not shown) exhibit patterns similar to that at River Mile 17, although not as significant.



Note: Means are calculated as the log-normalized mean concentrations, with error bars representing the 95% two-sided confidence interval. Red line in pane (a) is the daily mean TN load from the five major JEA domestic wastewater facilities from 1995–2011.

FIGURE 33: ANNUAL GEOMETRIC MEAN TN (A) AND TP (B) CONCENTRATIONS IN THE MARINE REACH OF THE LSJR AT RIVER MILE 17 NEAR TALLEYRAND, 1995–2014

4.3.1 LSJR FRESHWATER REACH TMDL CRITERIA PERFORMANCE

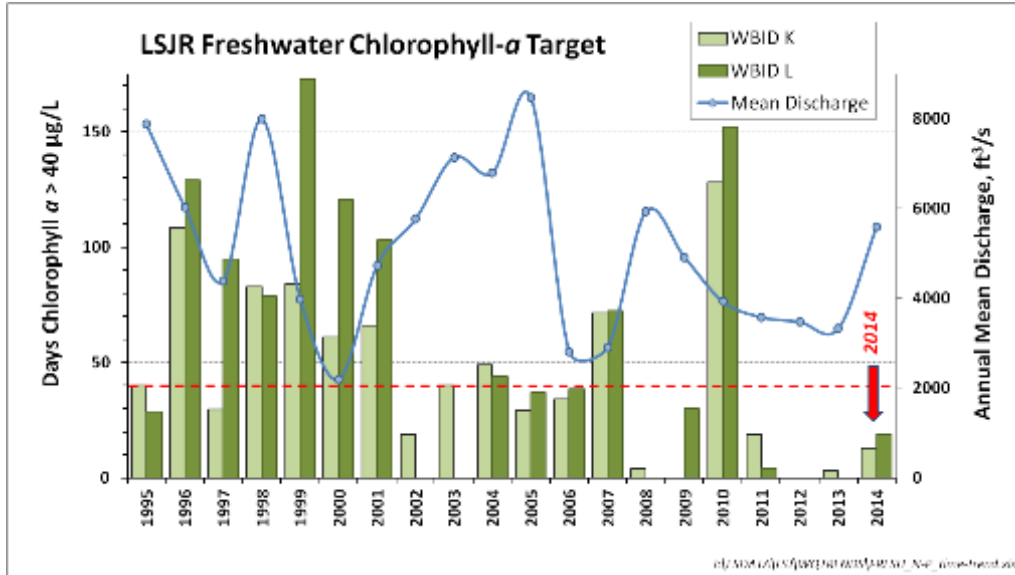
The LSJR is a system dominated by the pelagic (open-water) food chain, in which algae, the base of the food chain, are consumed by microscopic animals (rotifers, crustaceans, and insect larvae, collectively referred to as zooplankton), which are in turn consumed by juvenile fish. Plankton monitoring in the LSJR has established that during blue-green algal (cyanobacteria) blooms, important pelagic zooplankton decline, shunting organic carbon from algal primary productivity instead to bacterial decomposition. To prevent this decline, a criterion was designed that sought to limit the duration of a nuisance bloom, defined as a concentration of chlorophyll-*a* of more than 40 micrograms/liter ($\mu\text{g/L}$) to no longer than 40 days.

Monitoring data for the freshwater reach stations at Racy Point, Federal Point, and Dancy Point in WBIDs K and L indicate that algal bloom density and duration did not exceed the TMDL threshold in

2014 (**Figure 34**). During the summer bloom season of 2014, the maximum total chlorophyll-*a* levels (pheophytin-adjusted) observed in WBIDs K and L were 46.3 and 74.8 µg/L, respectively, for sampling occurring the third week in May. Continuous *in situ* measurement of algal biomass at the USGS water quality station at Dancy Point indicates a sharp decline in algal biomass in the third week of May, suggesting that the developing bloom in these WBIDs was disrupted by high rainfall accumulation and runoff earlier in the month. The TP concentration at Racy Point increased from 0.085 mg/L on May 6 to 0.114 mg/L on May 27, and 0.128 mg/L on June 9, in response to this high-runoff event.

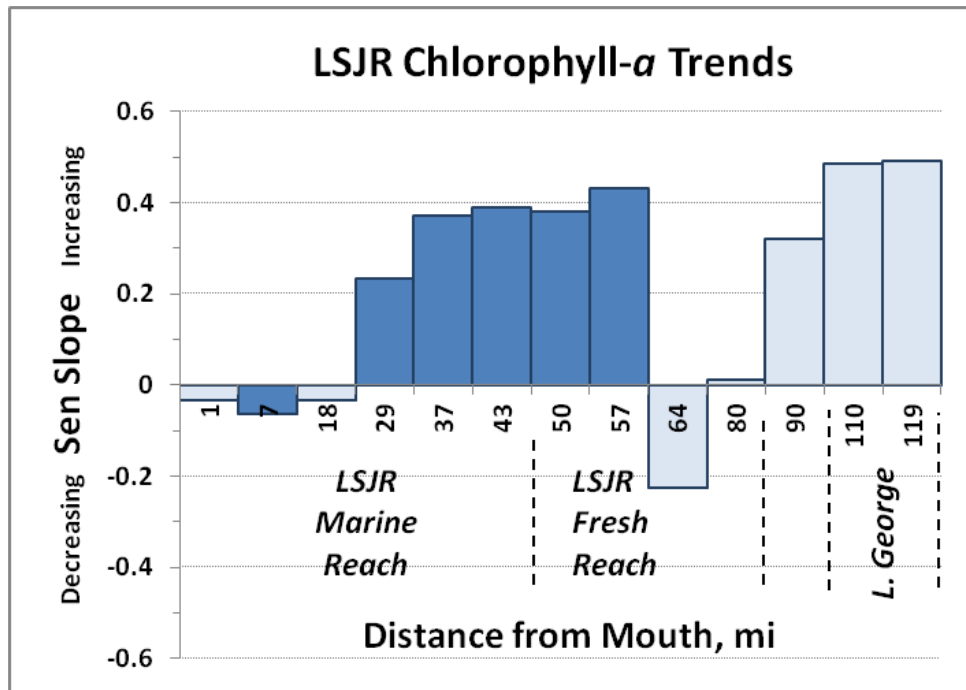
While bloom levels remained low to moderate in the LSJR main stem, one of the basin's off-line lakes, Crescent Lake, experienced a persistent bloom of the nuisance cyanobacteria *Microcystis aeruginosa*. On several occasions, sampling indicated high levels of the cyanotoxin microcystin in the lake, and at the mouth of its largest tributary, Haw Creek. A TMDL is currently in development for Crescent Lake.

In years such as 2014 with elevated discharge and freshwater conditions extending into the oligohaline reach, it is not unusual for cyanobacteria blooms dominated by *Microcystis aeruginosa* to appear in the downstream portion of the estuary. Blooms arising under these conditions have been a contributing factor in the increasing trend in chlorophyll-*a* concentration observed in the oligohaline reach (**Figure 35**). Fortunately, this was not the case in 2014, as phytoplankton biomass remained relatively low. The maximum chlorophyll-*a* concentrations observed at the Mandarin Point and Piney Point stations were 11.9 and 10.6 µg/L, concentrations that would be considered well below bloom level.



Note: Red dashed line identifies the bloom threshold concentration of 40 µg/L. The blue dashed line identifies the trend from 1995–2013, which has a significant negative slope of 2.5 days decline per year.

FIGURE 34: ANNUAL MAXIMUM CHLOROPHYLL-A AND DURATION OF CHLOROPHYLL-A GREATER THAN 40 µg/L FOR THE LONG-TERM LSJR FRESHWATER REACH STATION AT RACY POINT



Note: Plotted values are the Mann-Kendall Sen Slope, which is the median slope over the assessment period. Negative values indicate a downward trend, while positive values indicate an upward trend. Dark blue indicates significance at the 95% confidence level. Note that the magnitude of the slope is a function of the general levels of chlorophyll-a at the location and is not necessarily related to the significance of the trend.

FIGURE 35: STATUS AND TRENDS ASSESSMENT RESULTS FOR THE ST. JOHNS RIVER ESTUARY FROM LAKE GEORGE TO THE MOUTH

4.3.2 LSJR MARINE REACH TMDL CRITERIA PERFORMANCE

4.3.2.1 Dames Point Bridge Site

Hourly DO, specific conductance, and water temperature measurements are reported from two depths by the USGS at the Dames Point Bridge (USGS 302309081333001) site. The upper level depth is eight feet below the average water surface, and the lower level depth is 15 feet below the average water surface. Data over the 2014 period were processed to obtain daily average DO concentrations and DO saturation (DOSAT). Specific conductance measurements were converted to salinity for the calculation of DOSAT. Dates with less 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 criterion (SSAC) was 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 one for the annual evaluation period for attainment. Annual graphs are presented of daily average DO and DOSAT at the two depths along with summary statistics (**Figure 36**, **Figure 37**, and **Table 18**). For 2014, the total fractional exposure was 0.13, which is well below the threshold level. **Figure 38** shows the annual values for the LSJR marine reach DO SSAC from 1996 through 2014, and 2014 continues the trend of SSAC achievement that has prevailed since 2008.

The corresponding daily average salinity and water temperature at Dames Point during 2014 is illustrated in **Figure 39** and **Figure 40**.

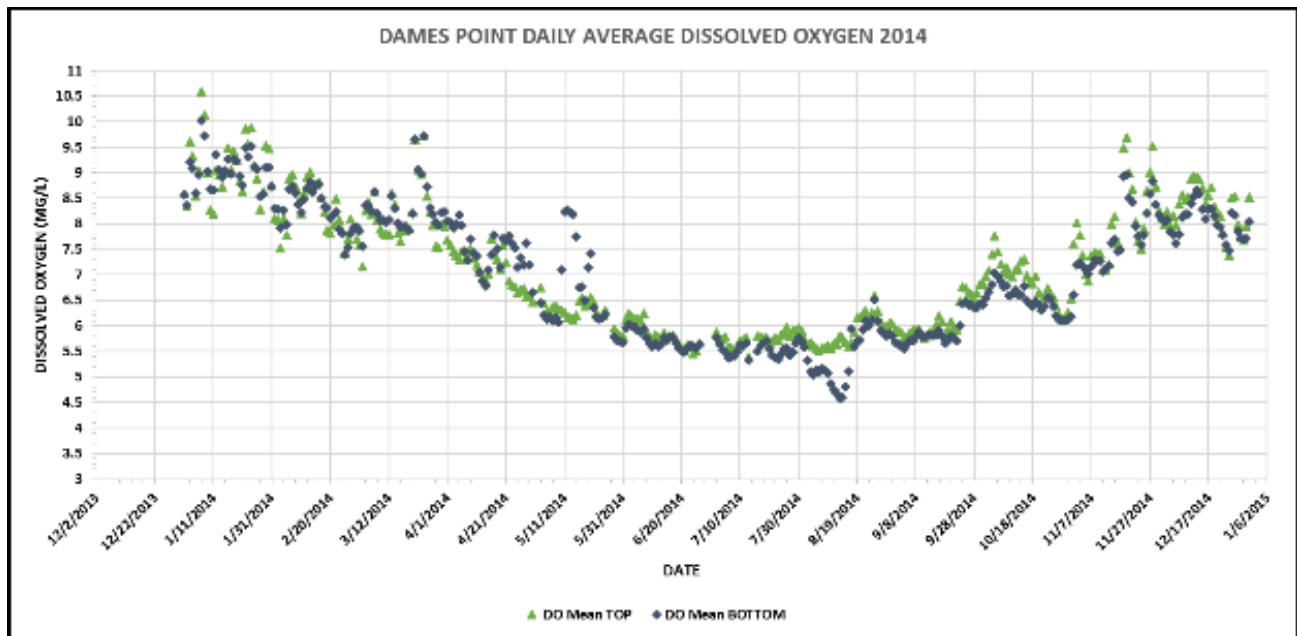


FIGURE 36: DAILY AVERAGE DO CONCENTRATIONS AT DAMES POINT IN 2014

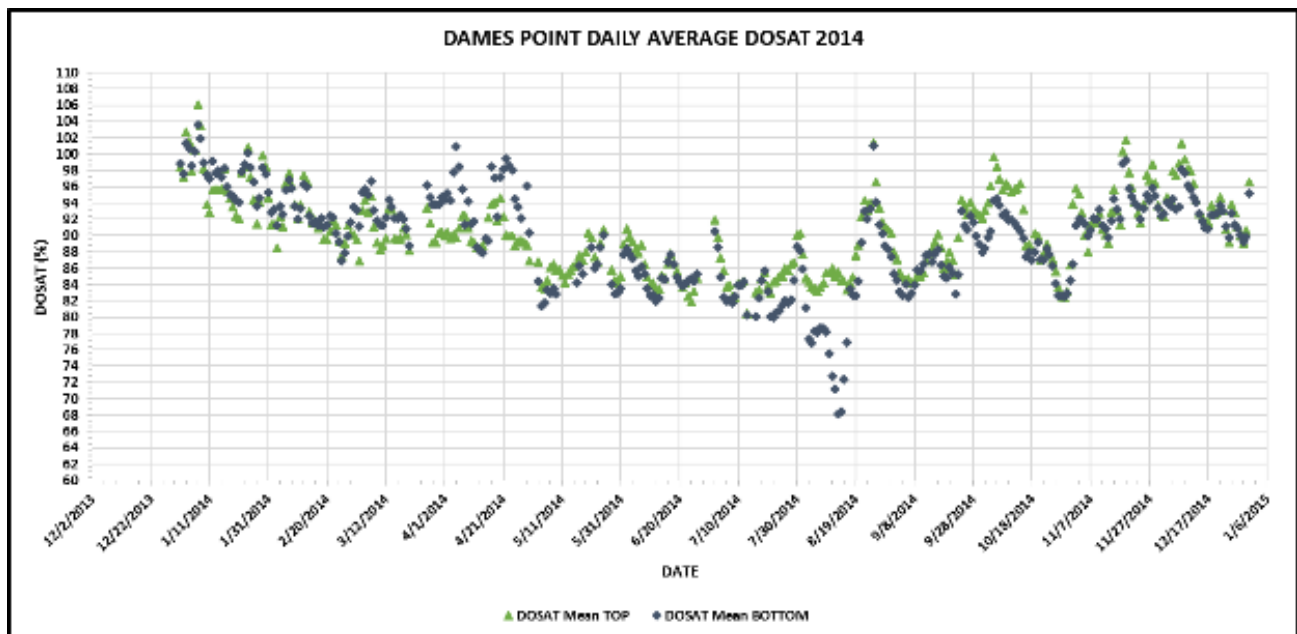


FIGURE 37: DAILY AVERAGE DOSAT AT DAMES POINT IN 2014

TABLE 18: SUMMARY STATISTICS OF DAILY AVERAGE DO AND DOSAT FOR 2014

STATISTIC	BOTTOM DO	BOTTOM DOSAT	TOP DO	TOP DOSAT
Number of Cases	362	348	362	357
Minimum	4.58	68.11	5.40	80.47
Maximum	10.02	103.59	10.59	106.06
Mean	7.10	89.79	7.19	90.45
Standard Deviation	1.27	5.92	1.22	4.77
1%	4.75	72.35	5.51	82.38
5%	5.38	80.21	5.62	83.57
10%	5.57	82.49	5.75	84.27
20%	5.72	84.38	5.90	85.57
25%	5.82	85.29	6.05	86.56
30%	6.07	86.48	6.18	87.57
40%	6.50	88.71	6.57	89.13
50%	7.18	91.07	7.10	90.15
60%	7.71	92.07	7.54	91.50
70%	8.04	93.17	7.97	92.89
75%	8.18	93.83	8.15	93.70
80%	8.28	94.53	8.40	94.34
90%	8.73	97.09	8.88	96.72
95%	9.06	98.48	9.18	98.46
99%	9.64	101.03	9.87	102.63

TABLE 19: 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-<4.0	EXPOSURE
Top	0	0	0	0	0	0.00
Bottom	0	0	1	3	2	0.133

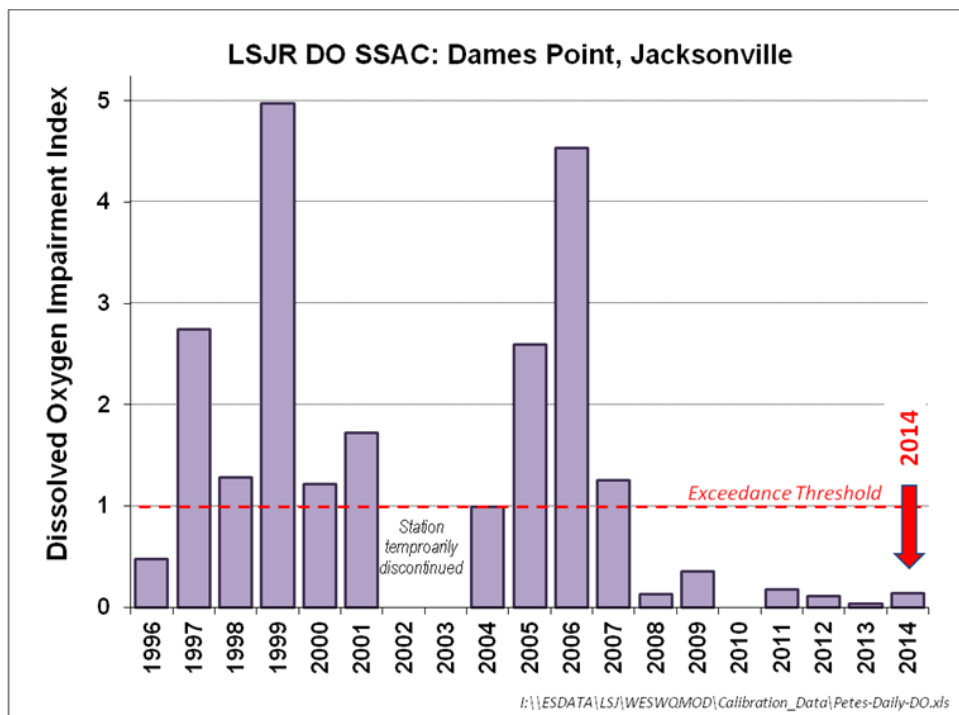


FIGURE 38: SUM OF THE DAILY FRACTIONAL DO EXCEEDANCES CALCULATED AT THE DAMES POINT STATION, 1996–2014

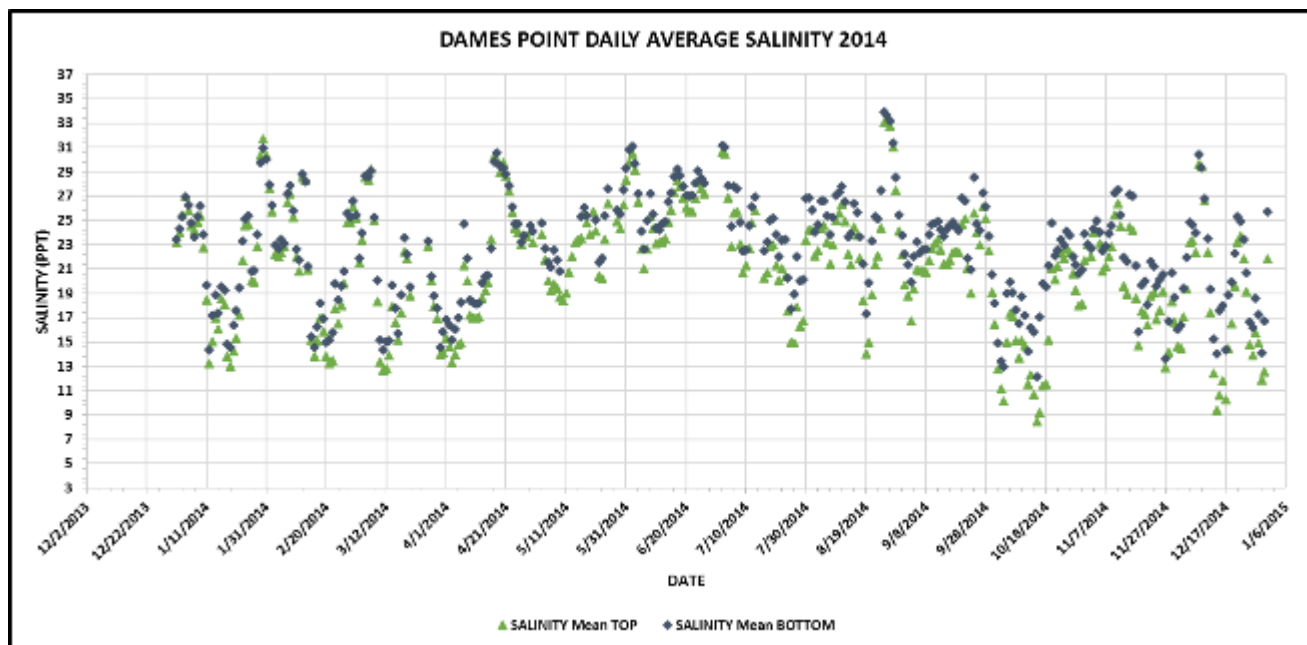


FIGURE 39: DAILY AVERAGE SALINITY AT DAMES POINT IN 2014

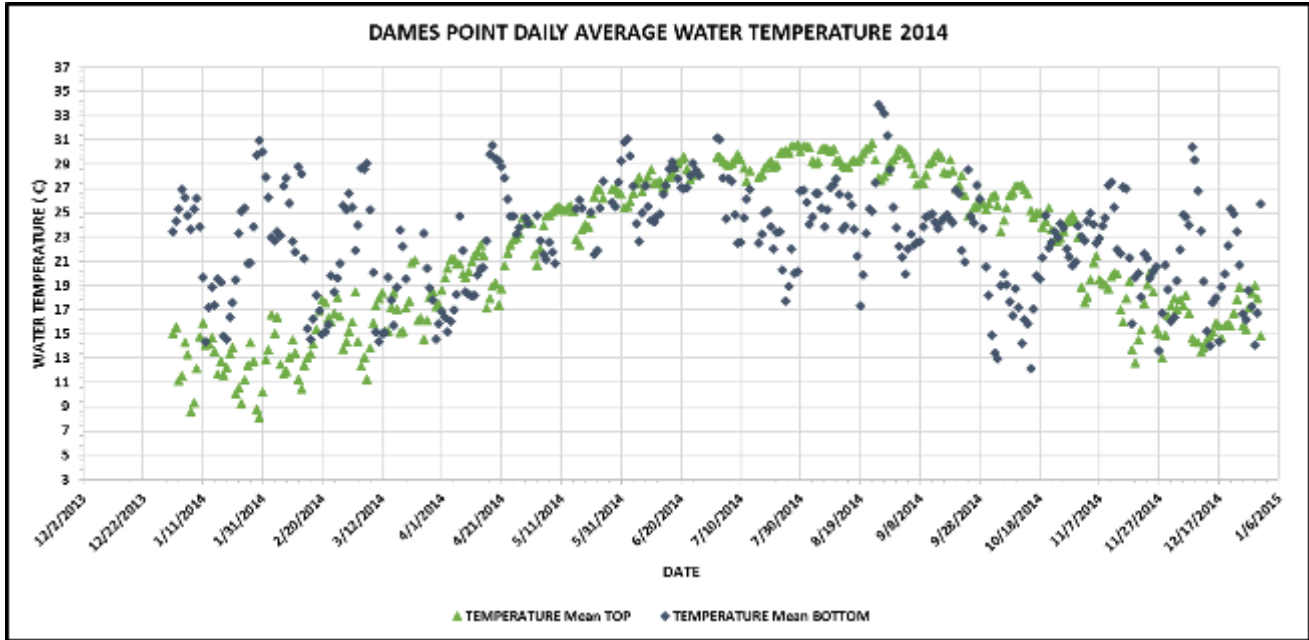


FIGURE 40: DAILY AVERAGE WATER TEMPERATURE AT DAMES POINT IN 2014

4.3.2.2 Clapboard Creek and Channel Marker 36 Sites

Figure 41 illustrates the locations of the Clapboard Creek and Channel Marker 36 data sondes. A single data sonde is deployed at the Clapboard Creek site, and two sondes are deployed at the Channel Marker 36 site. Due to ship traffic that hit Channel Marker 36 several times over the past five years, it has been difficult to obtain a long-term record of DO conditions at that location. The current location shown in **Figure 41** is approximately 648 meters east of the historical location of the channel marker.

At the Clapboard Creek site, data sonde records were available for the period from September 2 through December 1, 2014. Measurements were logged at 15-minute intervals, and individual datasets were processed to create a time series of observations. Daily minimum, average, and maximum values were calculated for DO, percent DOSAT, water temperature, pH, salinity, and specific conductance. Days with less than 50 observations were excluded from further analysis. Over this period, a total of 103 days were considered in the analysis. **Figure 42** through **Figure 45** illustrate daily average concentrations of DO, DOSAT, water temperature, and salinity. The mean daily average depth of observations was 2.11 meters (with a range of 0.44 meters to 2.79 meters). Daily average salinities ranged between 9.07 parts per thousand (ppt) and 27.79 ppt, with an average of 19.40 ppt.

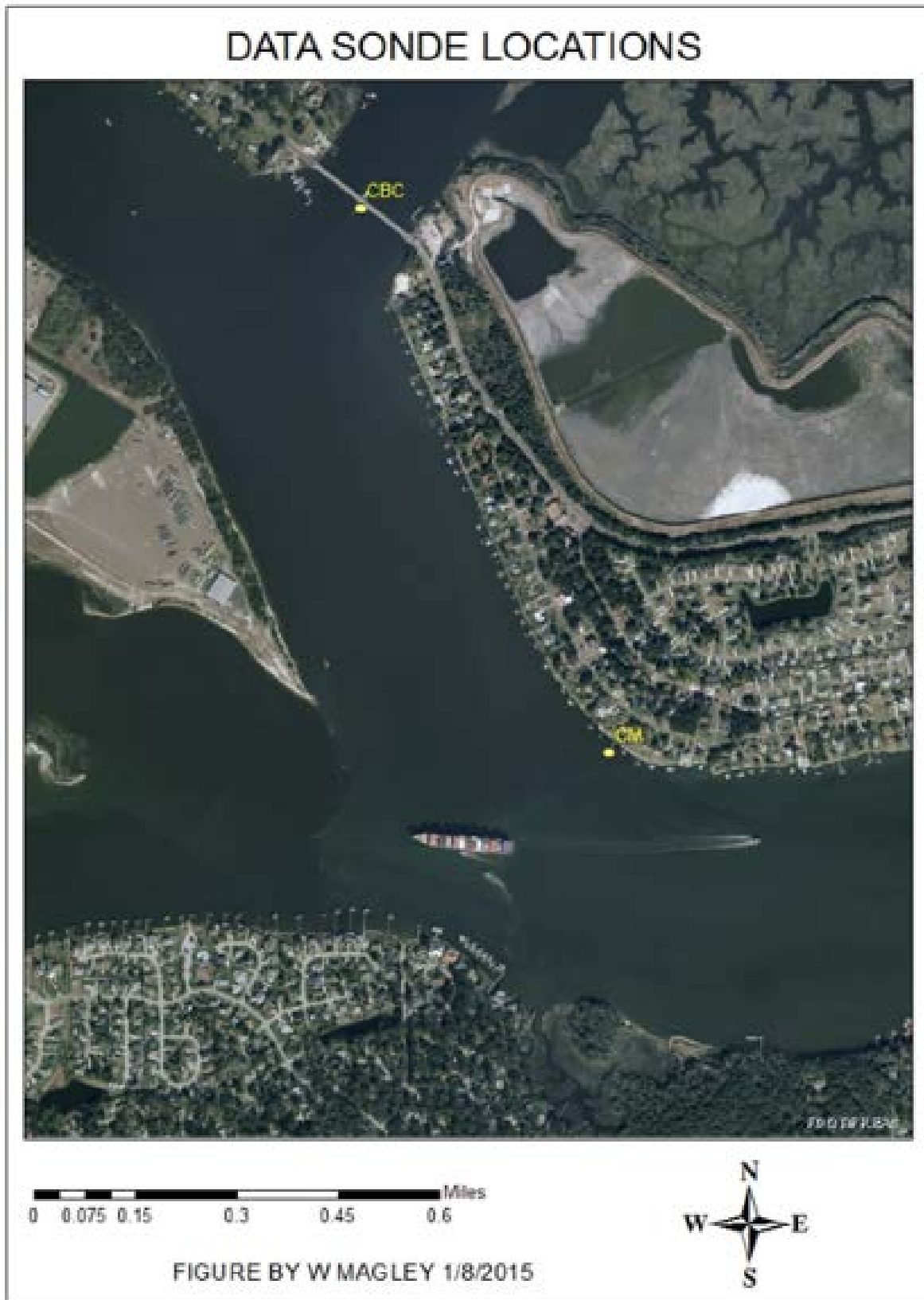


FIGURE 41: LOCATION OF CLAPBOARD CREEK AND CHANNEL MARKER 36 DATA SONDES

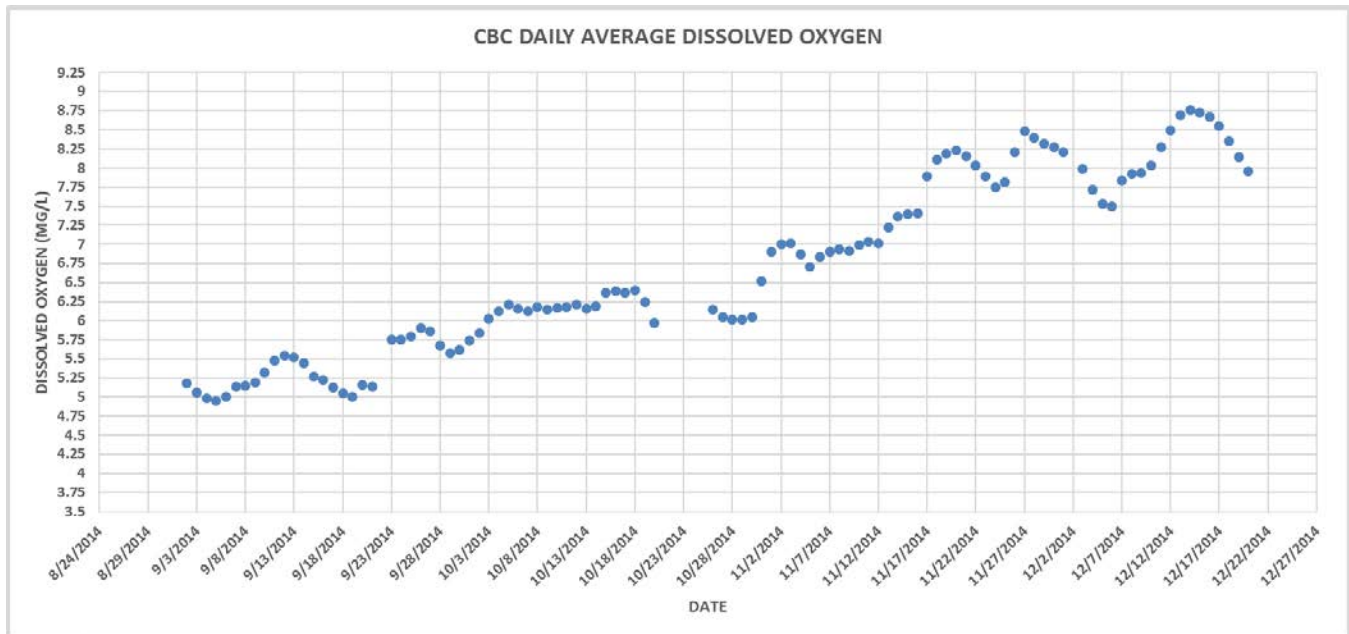


FIGURE 42: DAILY AVERAGE DO CONCENTRATIONS AT THE CLAPBOARD CREEK SITE IN 2014

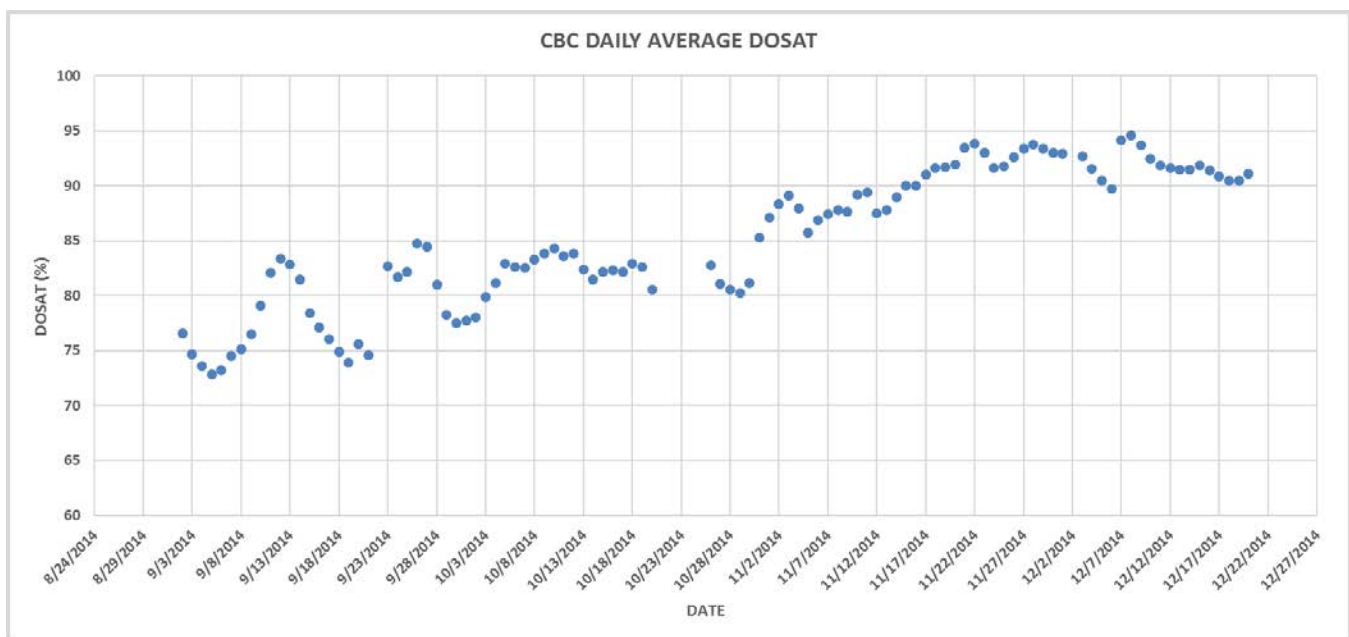


FIGURE 43: DAILY AVERAGE DOSAT AT THE CLAPBOARD CREEK SITE IN 2014

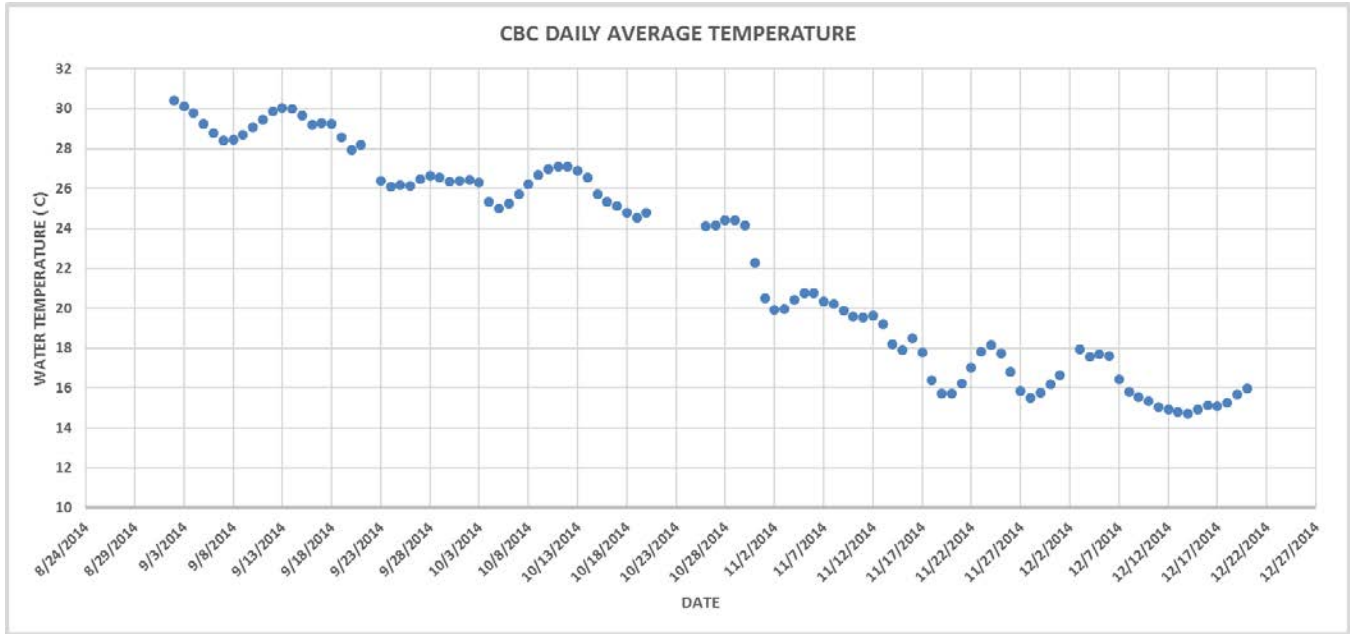


FIGURE 44: DAILY AVERAGE WATER TEMPERATURE AT THE CLAPBOARD CREEK SITE IN 2014

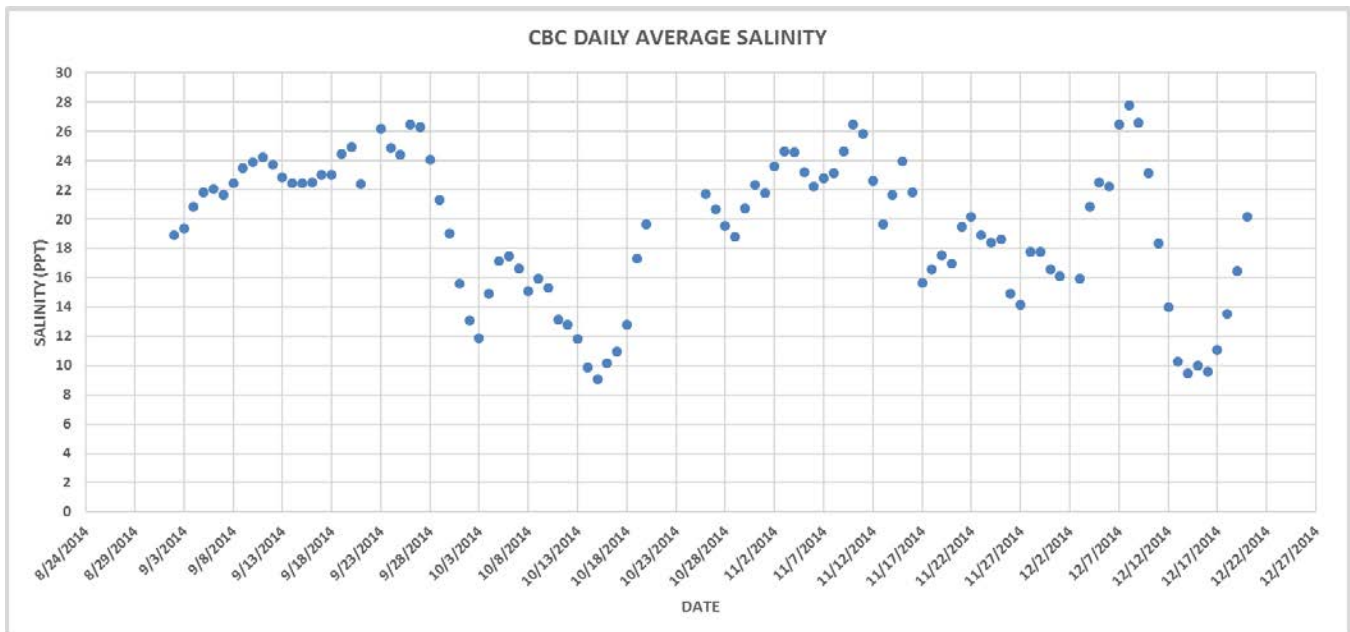


FIGURE 45: DAILY AVERAGE SALINITY AT THE CLAPBOARD CREEK SITE IN 2014

Out of the 103 calculated daily average DO values, there were two values between 4.8 and 5.0 mg/L. Substituting these values into the DO SSAC expression yielded a total fractional exposure of 0.04. The available period of data, however, only reflects the last three months of 2014 and does not represent the total fractional exposure over the complete year. Daily average DOSAT values ranged between 72.8% and 94.6%.

At the Channel Marker 36 site, observations were available for the period from March 18 through December 1, 2014, for the top sonde. Daily minimum, average, and maximum concentrations for DO, DOSAT, water temperature, salinity, specific conductance, and pH were calculated. The lowest daily average DO concentration was 4.90 mg/L. Days with less than 50 observations were excluded from further analysis. Over the period, a total of 156 days were considered in the analysis. **Figure 46** through **Figure 49** illustrate daily average concentrations of DO, DOSAT, water temperature, and salinity. The average depth of measurements was 1.66 meters (with a range of 0.66 to 2.60 meters). Daily average salinities ranged between 8.31 and 33.19 ppt, with an average of 22.11 ppt.

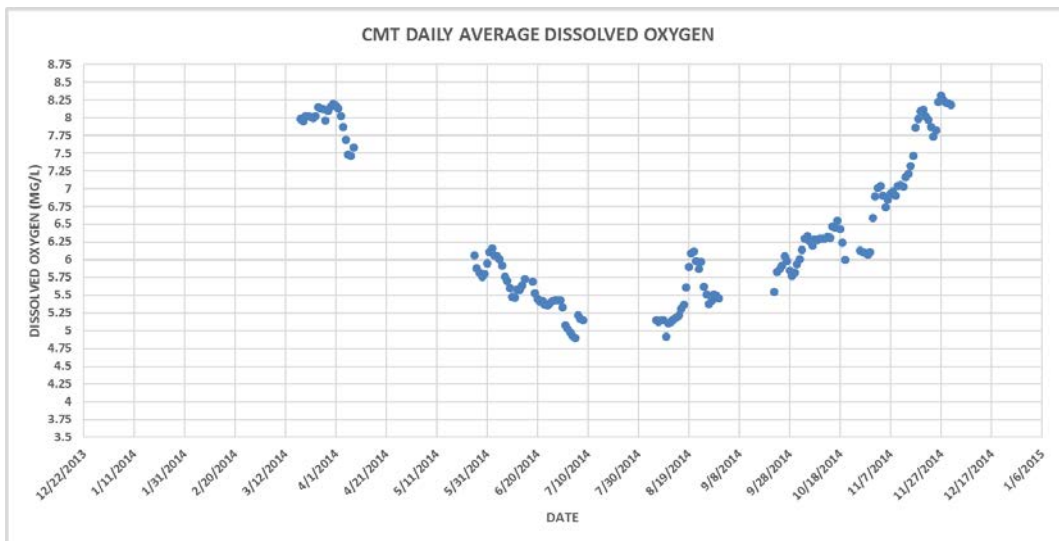


FIGURE 46: DAILY AVERAGE DO CONCENTRATIONS AT THE CHANNEL MARKER 36 TOP SONDE SITE IN 2014

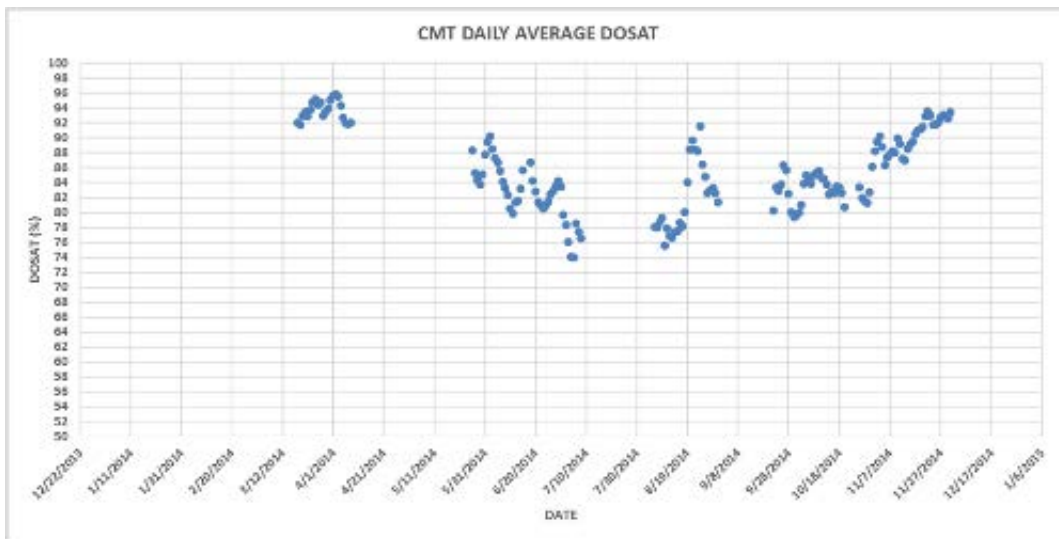


FIGURE 47: DAILY AVERAGE DOSAT AT THE CHANNEL MARKER 36 TOP SONDE SITE IN 2014

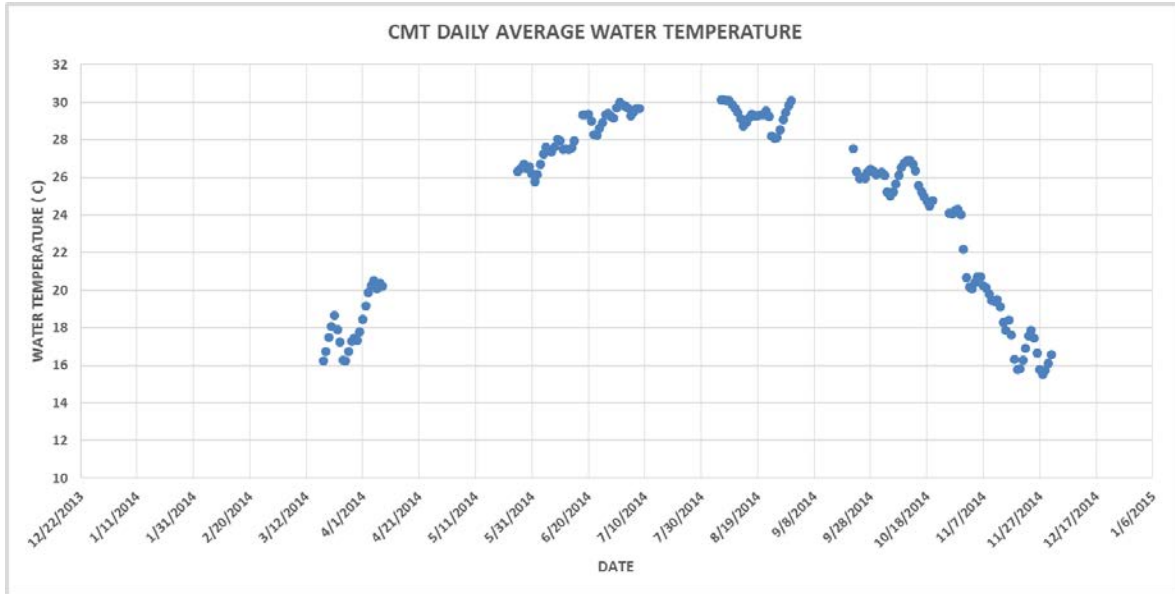


FIGURE 48: DAILY AVERAGE WATER TEMPERATURE AT THE CHANNEL MARKER 36 TOP SONDE SITE

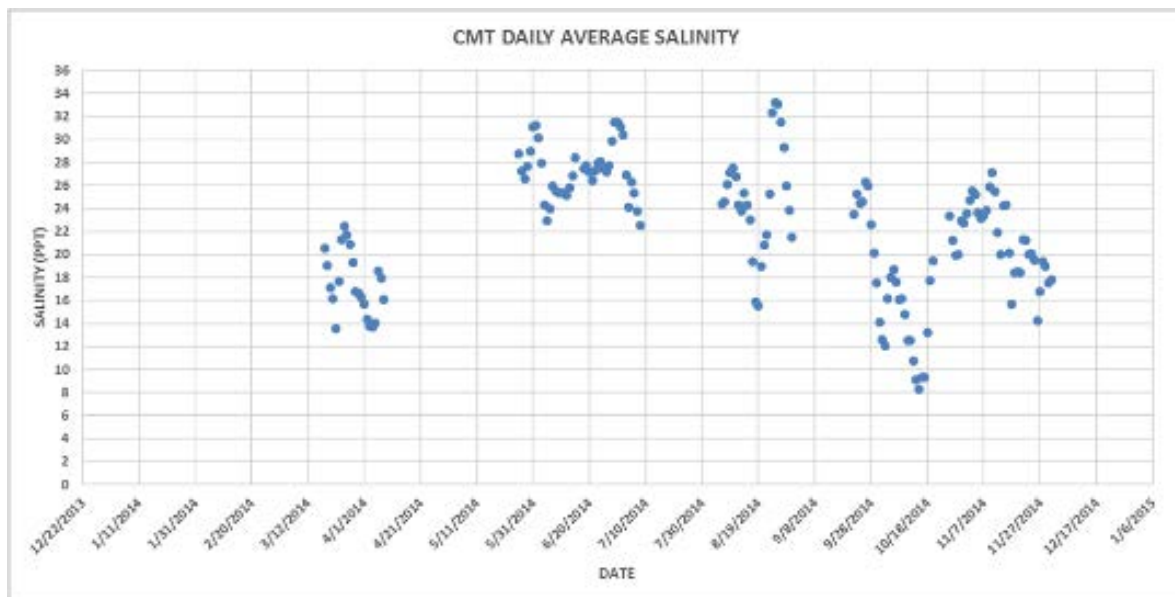


FIGURE 49: DAILY AVERAGE SALINITY AT THE CHANNEL MARKER 36 TOP SONDE SITE

Out of the 156 calculated daily average DO values, there were four values between 4.8 and 5.0 mg/L. Substituting these values into the DO SSAC expression yielded a total fractional exposure of 0.07. The available period of data, however, reflects less than half of 2014 and does not represent the total fractional exposure over the complete year. Daily average DOSAT values ranged between 73.9% and 95.8%.

For the Channel Marker 36 bottom sonde, observations were available over the period from September 2 through December 1, 2014. Daily minimum, average, and maximum concentrations for DO, DOSAT, water temperature, salinity, specific conductance, and pH were calculated for 56 days. The lowest daily average DO concentration was 5.14 mg/L. Days with less than 50 observations were excluded from further analysis. **Figure 50** through **Figure 53** illustrate daily average concentrations of DO, DOSAT, water temperature, and salinity. The average depth of measurements was 3.64 meters (with a range of 2.73 to 4.27 meters). Daily average salinities ranged between 13.81 and 25.7 ppt, with an average of 21.3 ppt.

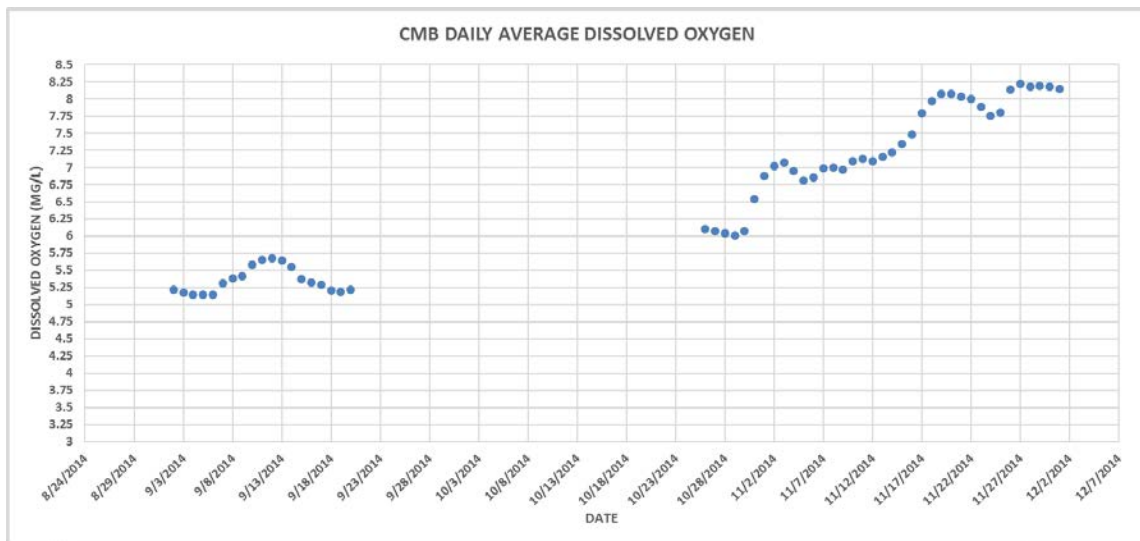


FIGURE 50: DAILY AVERAGE DO CONCENTRATIONS AT THE CHANNEL MARKER 36 BOTTOM SONDE SITE IN 2014

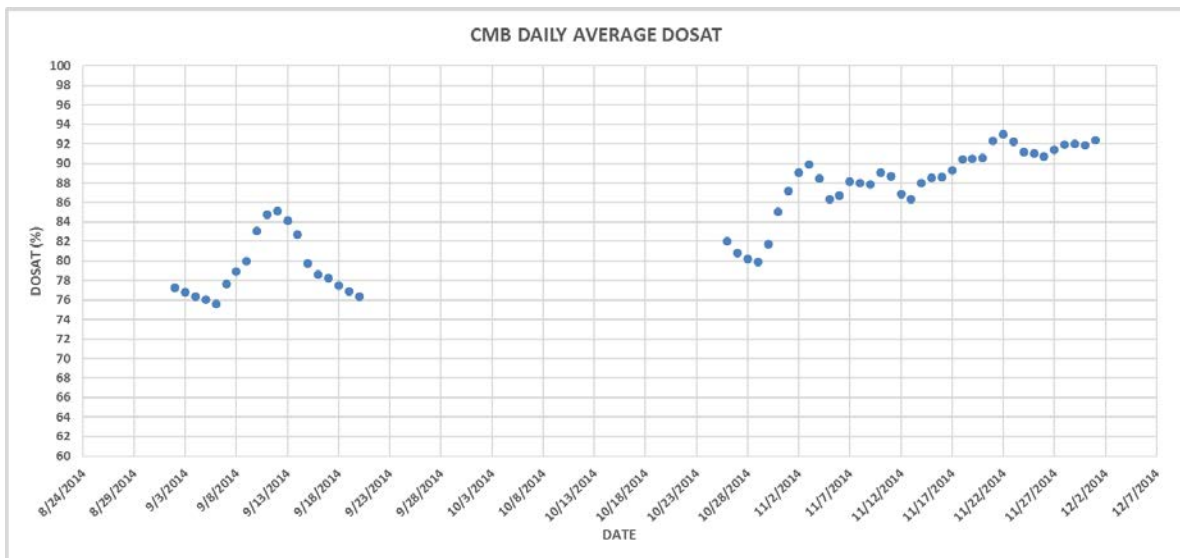


FIGURE 51: DAILY AVERAGE DOSAT AT THE CHANNEL MARKER 36 BOTTOM SONDE SITE IN 2014

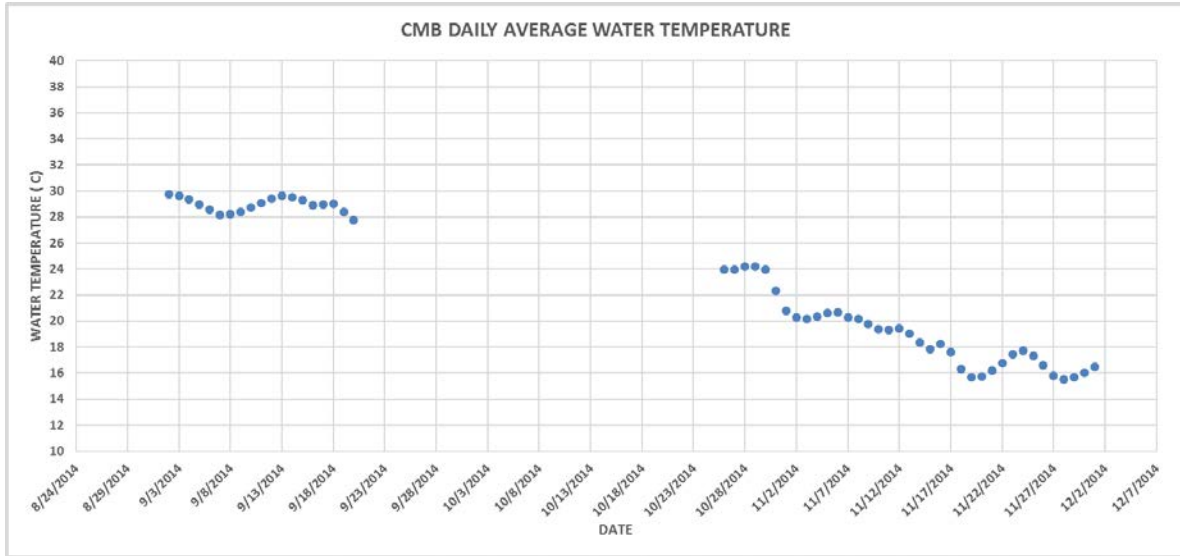


FIGURE 52: DAILY AVERAGE WATER TEMPERATURE AT THE CHANNEL MARKER 36 BOTTOM SONDE SITE

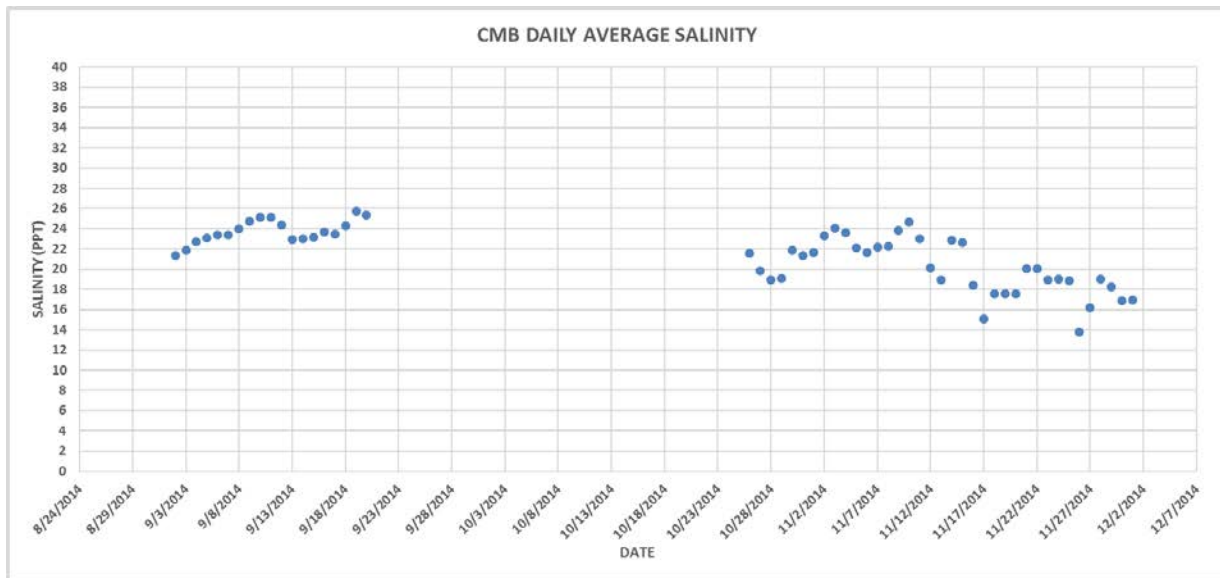


FIGURE 53: DAILY AVERAGE SALINITY AT THE CHANNEL MARKER 36 BOTTOM SONDE SITE

Out of the 56 calculated daily average DO values, there were no values below 5.0 mg/L. The total fractional exposure during this period was 0.0. The available period of data, however, reflects less than two months in late 2014, and so it does not represent the total fractional exposure over the complete year. Daily average DOSAT values ranged between 75.6% and 93.0%.

4.3.2.3 Buckman Bridge Site

2010 Data Evaluation

Hourly DO (except for 30-minute records from September 27 to October 13), specific conductance, and water temperature measurements reported from two depths by the USGS at Buckman Bridge (USGS 301124081395901) during 2010 were processed to obtain daily average DO concentrations and DOSAT. Specific conductance measurements were converted to salinity for the calculation of DOSAT. Dates with less than 15 observations were excluded from further analysis. Annual graphs are presented of daily average DO and DOSAT (**Figure 54** and **Figure 55**) at the two depths along with summary statistics (**Table 20**). The minimum daily DO at both depths was greater than 5 mg/L.

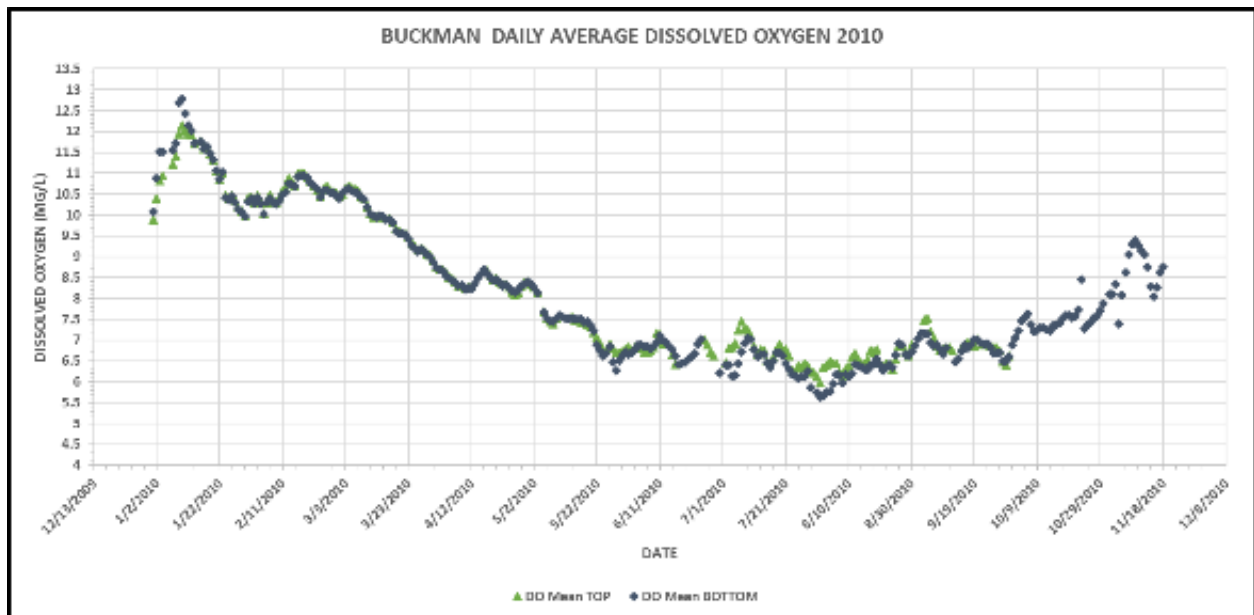


FIGURE 54: DAILY AVERAGE DO CONCENTRATIONS AT BUCKMAN BRIDGE IN 2010

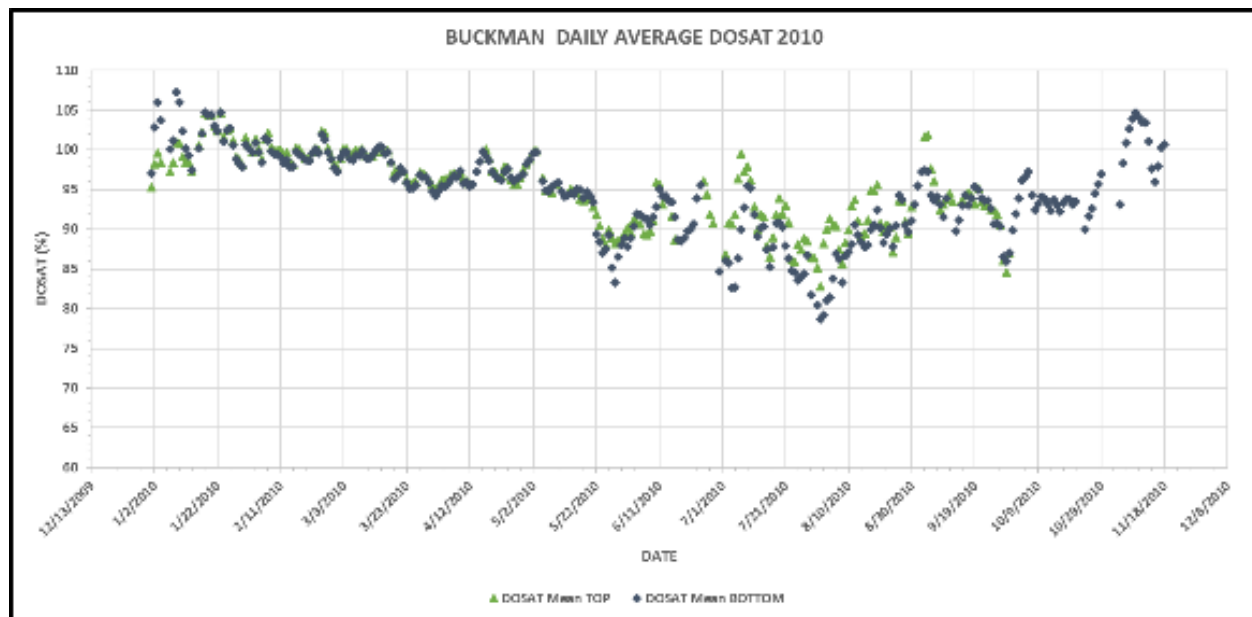


FIGURE 55: DAILY AVERAGE DOSAT AT BUCKMAN BRIDGE IN 2010

TABLE 20: SUMMARY STATISTICS OF DAILY AVERAGE DO AND DOSAT FOR 2010

STATISTIC	BOTTOM DO	BOTTOM DOSAT	TOP DO	TOP DOSAT
Number of Cases	308	302	244	244
Minimum	5.63	78.70	5.97	82.85
Maximum	12.78	107.24	12.15	104.66
Mean	8.13	94.49	8.29	95.10
Standard Deviation	1.71	5.45	1.78	4.65
1%	5.76	80.75	6.15	85.14
5%	6.17	84.61	6.36	87.05
10%	6.37	86.97	6.43	88.76
20%	6.63	89.93	6.71	90.53
25%	6.72	90.60	6.76	91.18
30%	6.85	91.88	6.82	92.40
40%	7.15	93.79	6.92	93.93
50%	7.53	94.99	7.48	95.71
60%	8.29	96.30	8.40	97.01
70%	8.88	97.74	9.84	98.38
75%	9.55	98.69	10.17	99.02
80%	10.12	99.35	10.43	99.65
90%	10.59	100.76	10.78	100.28
95%	11.10	102.75	11.25	101.94
99%	12.26	105.34	11.95	104.36

As seen in **Figure 56**, daily average salinities at Buckman Bridge in 2010 ranged between 0.32 and 17.95 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. Approximately 50% of the daily average specific conductance values were below the predominantly marine threshold (**Table 21**).

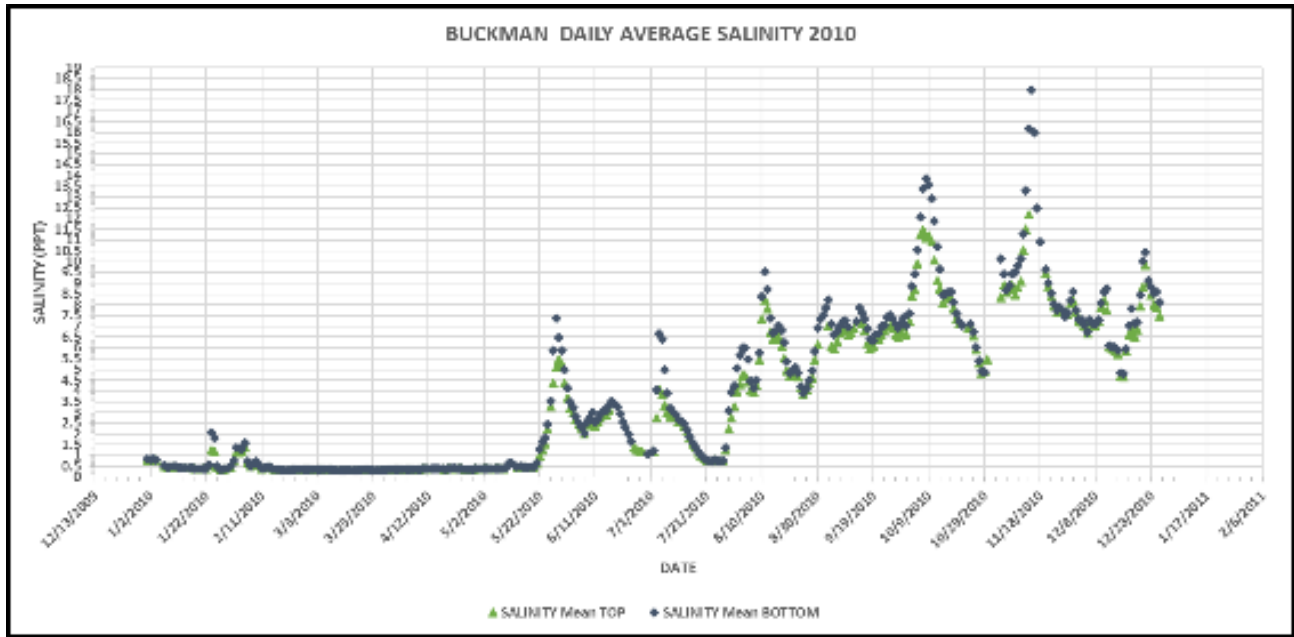


FIGURE 56: DAILY AVERAGE SALINITY AT BUCKMAN BRIDGE IN 2010

2011 Data Evaluation

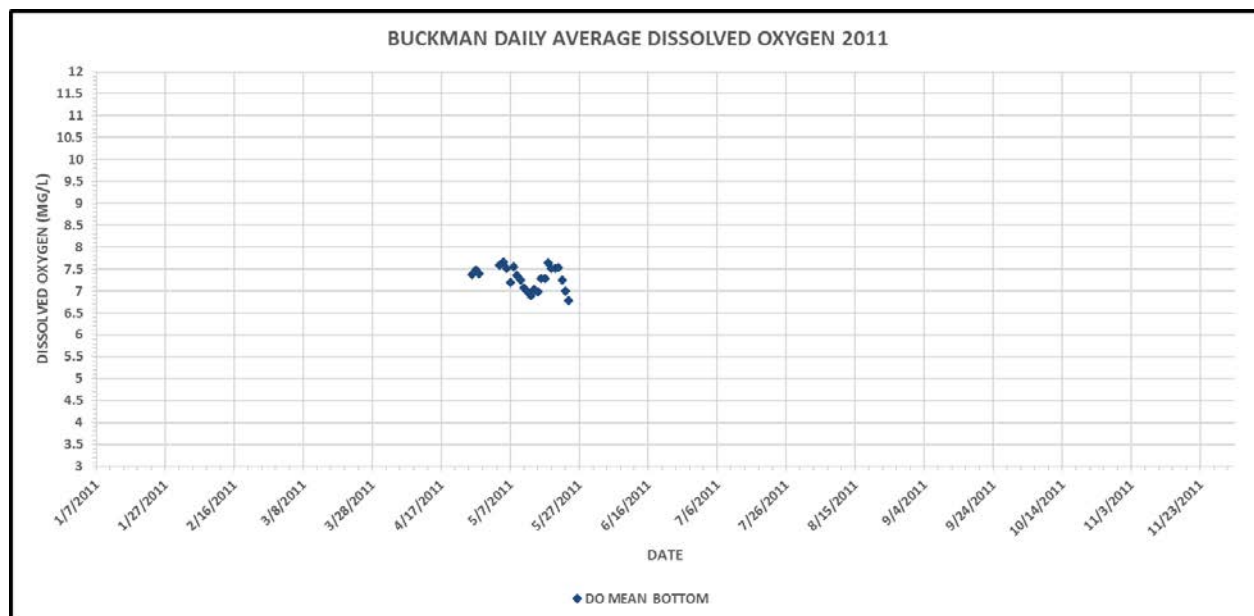
During 2011, DO measurements were only reported for the bottom depth. Starting on April 25, measurements were reported at 30-minute intervals. Prior to April 25, dates with less than 15 observations were excluded from further analysis, and after April 25, the data minimum was 35 values.

Figure 57 and **Figure 58** illustrate the daily average DO and DOSAT values from the bottom depth over the April 26–May 24 period. The minimum daily average DO and DOSAT were 6.78 and 90.8%, respectively (**Table 22**).

Figure 59 illustrates daily average salinities at Buckman Bridge in 2011. Over the year salinities ranged between 0.56 and 20.9 ppt. During the period that DO measurements were reported, salinities were between 4.1 and 13.6 ppt (specific conductance between 7,372 and 22,092 $\mu\text{mhos/cm}$). Over the year, less than 20% of the daily average specific conductance values were below the predominantly marine threshold of 4,580 $\mu\text{mhos/cm}$ (**Table 23**).

TABLE 21: SUMMARY STATISTICS OF DAILY AVERAGE SPECIFIC CONDUCTANCE AT BUCKMAN BRIDGE IN 2010

STATISTIC	BOTTOM CONDUCTANCE (μ MHOS/CM)	TOP CONDUCTANCE (μ MHOS/CM)
Number of Cases	346	323
Minimum	712	711
Maximum	28,652	20,033
Mean	6,854	6,208
Standard Deviation	6,213	5,519
1%	720	720
5%	738	735
10%	756	753
20%	828	823
25%	868	857
30%	971	961
40%	1,689	1,663
50%	5,173	4,616
60%	8,689	7,767
70%	11,625	10,593
75%	12,230	11,450
80%	12,618	12,020
90%	14,686	13,944
95%	16,902	15,019
99%	22,677	18,723

**FIGURE 57: DAILY AVERAGE DO CONCENTRATIONS AT BUCKMAN BRIDGE IN 2011**

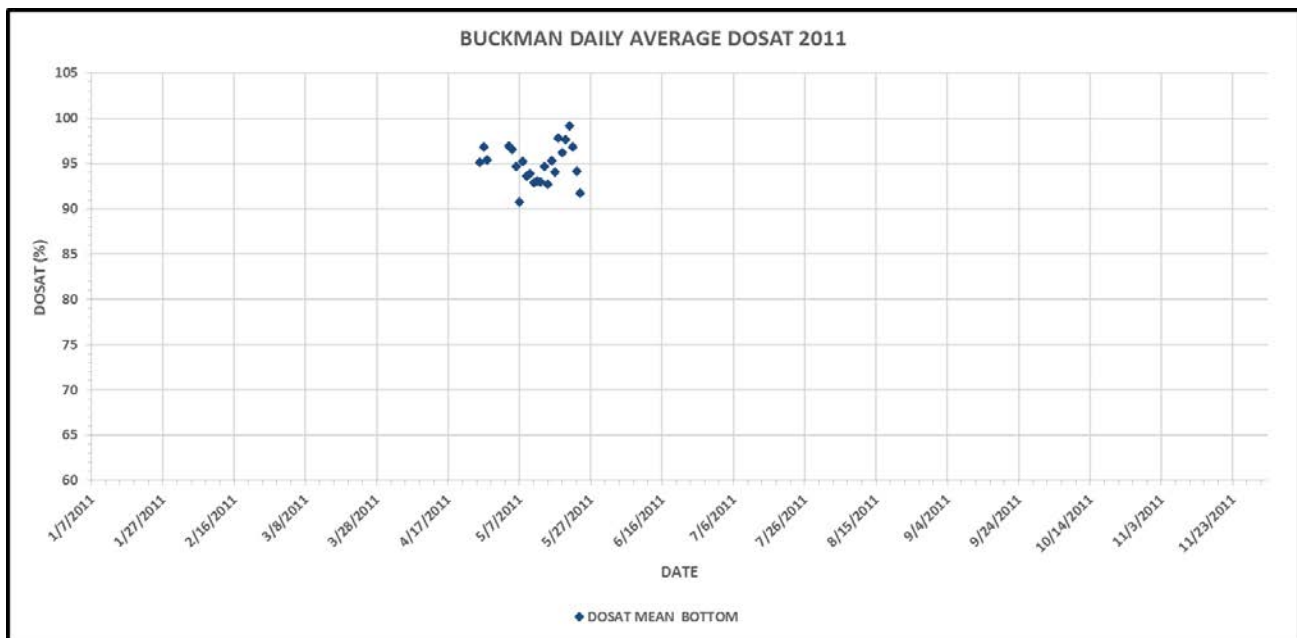


FIGURE 58: DAILY AVERAGE DOSAT AT BUCKMAN BRIDGE IN 2011

TABLE 22: SUMMARY STATISTICS OF DAILY AVERAGE DO AND DOSAT FOR 2011

STATISTIC	BOTTOM DO	BOTTOM DOSAT
Number of Cases	24	24
Minimum	6.78	90.80
Maximum	7.66	99.18
Mean	7.30	94.94
Standard Deviation	0.26	2.07
1%	6.78	90.80
5%	6.86	91.47
10%	6.98	92.59
20%	7.01	93.01
25%	7.06	93.34
30%	7.16	93.80
40%	7.26	94.22
50%	7.32	94.94
60%	7.39	95.35
70%	7.51	96.33
75%	7.52	96.67
80%	7.53	96.81
90%	7.59	97.70
95%	7.65	98.26
99%	7.66	99.18

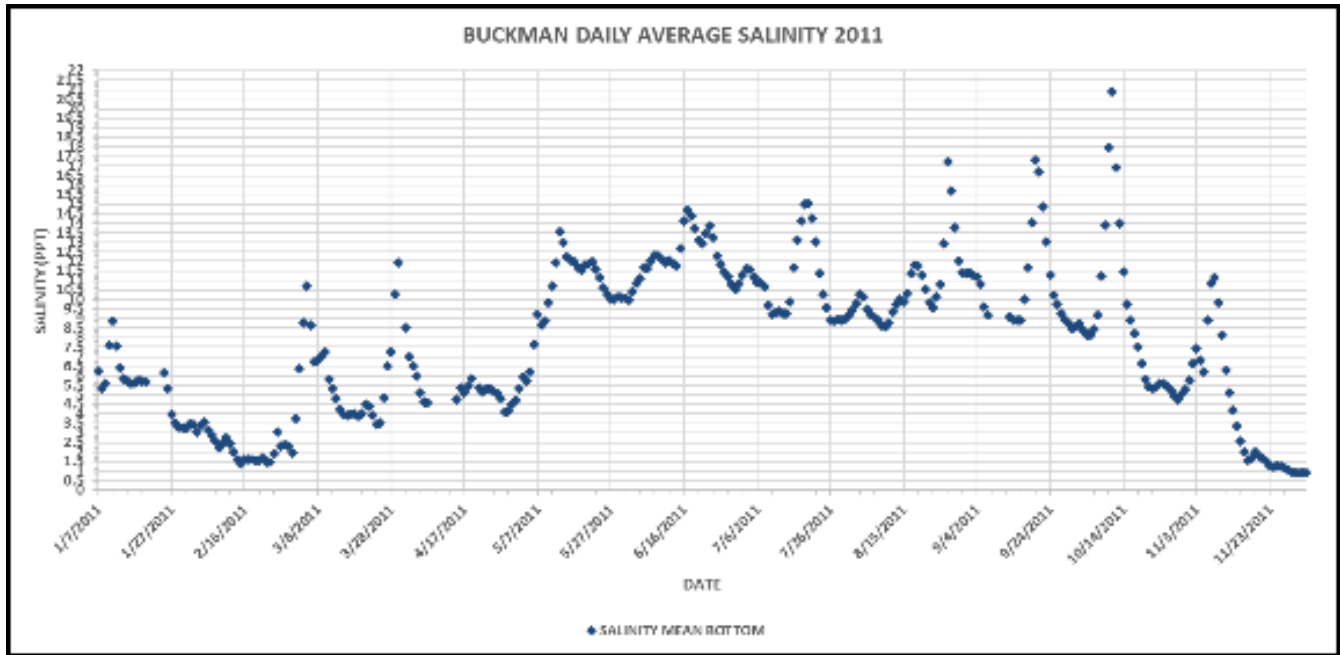


FIGURE 59: DAILY AVERAGE SALINITY AT BUCKMAN BRIDGE IN 2011

TABLE 23: SUMMARY STATISTICS OF DAILY AVERAGE SPECIFIC CONDUCTANCE IN 2011

STATISTIC	BOTTOM CONDUCTANCE (μ MHOS/CM)	TOP CONDUCTANCE (μ MHOS/CM)
Number of Cases	351	339
Minimum	1,187	1,272
Maximum	32,923	24,577
Mean	12,503	11,910
Standard Deviation	6,752	6,066
1%	1,273	1,340
5%	1,741	1,820
10%	2,813	2,908
20%	5,888	5,694
25%	7,126	6,979
30%	8,499	8,605
40%	10,067	9,864
50%	12,950	12,191
60%	15,335	14,950
70%	16,932	16,230
75%	17,931	17,014
80%	18,718	17,800
90%	20,204	19,110
95%	22,729	20,555
99%	27,547	22,650

2012 Data Evaluation

Since no DO measurements were reported at either depth in 2012, no further analysis was conducted.

2013 Data Evaluation

Measurements in 2013 were reported at 30-minute intervals. Dates with less than 35 observations were excluded from further analysis. Daily average DO and DOSAT at both depths are graphed in **Figure 60** and **Figure 61**, respectively. The daily average minimum DO at both depths exceeded 5 mg/L throughout the year (**Table 24**). A minimum daily average DOSAT of 77.55% was calculated at the bottom depth and all calculated DOSAT values at the top depth exceeded 85% (**Table 24**).

Daily average salinities at Buckman Bridge in 2013 ranged between 0.36 and 14.1 ppt (**Figure 62**). Approximately 75% of the daily average specific conductance values were below the predominantly marine threshold of 4,580 $\mu\text{mhos/cm}$ (**Table 25**).

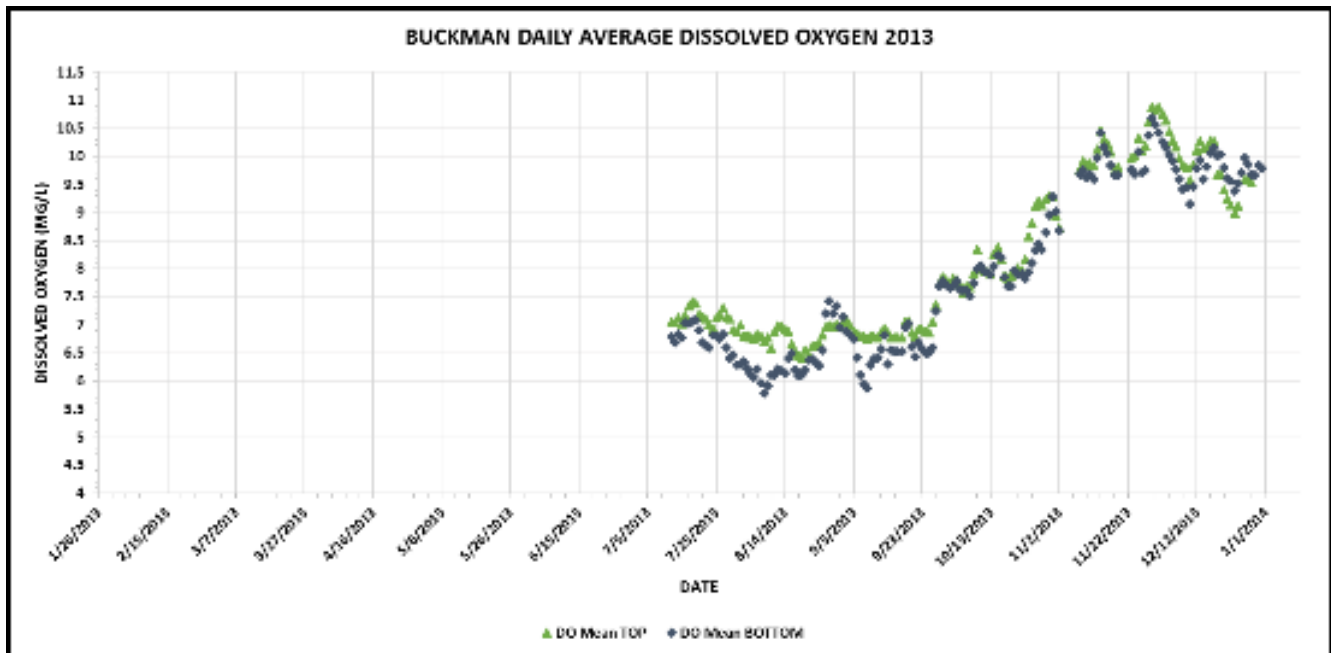


FIGURE 60: DAILY AVERAGE DO CONCENTRATIONS AT BUCKMAN BRIDGE IN 2013

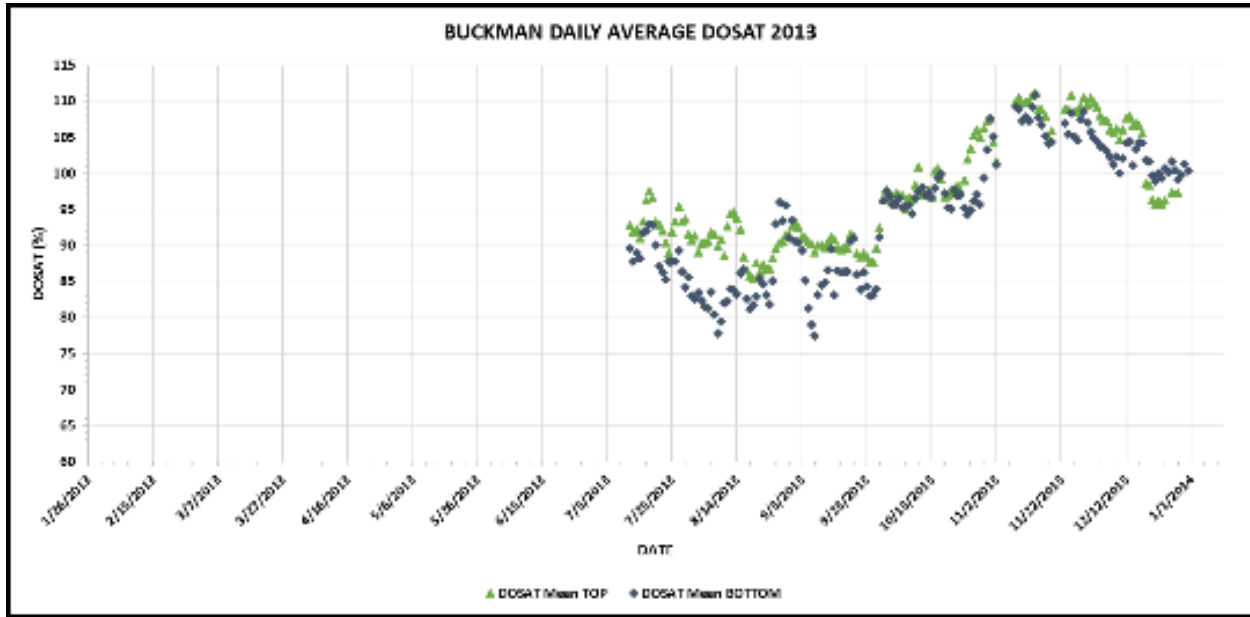


FIGURE 61: DAILY AVERAGE DOSAT AT BUCKMAN BRIDGE IN 2013

TABLE 24: SUMMARY STATISTICS OF DAILY AVERAGE DO AND DOSAT FOR 2013

STATISTIC	BOTTOM DO	BOTTOM DOSAT	TOP DO	TOP DOSAT
Number of Cases	165	165	161	161
Minimum	5.78	77.55	6.40	85.44
Maximum	10.69	110.85	10.88	111.16
Mean	7.89	94.07	8.11	97.16
Standard Deviation	1.48	8.76	1.38	7.52
1%	5.88	77.97	6.45	85.87
5%	6.10	81.43	6.64	87.62
10%	6.21	82.95	6.77	88.87
20%	6.43	84.56	6.86	90.31
25%	6.54	86.12	6.91	90.81
30%	6.64	86.56	6.97	91.41
40%	6.95	90.80	7.10	92.84
50%	7.66	95.25	7.69	96.22
60%	7.96	97.09	7.97	97.26
70%	9.38	99.99	9.15	100.74
75%	9.60	101.26	9.58	105.07
80%	9.69	103.16	9.82	106.21
90%	9.98	105.49	10.18	108.88
95%	10.15	107.69	10.38	109.94
99%	10.55	109.27	10.87	110.82

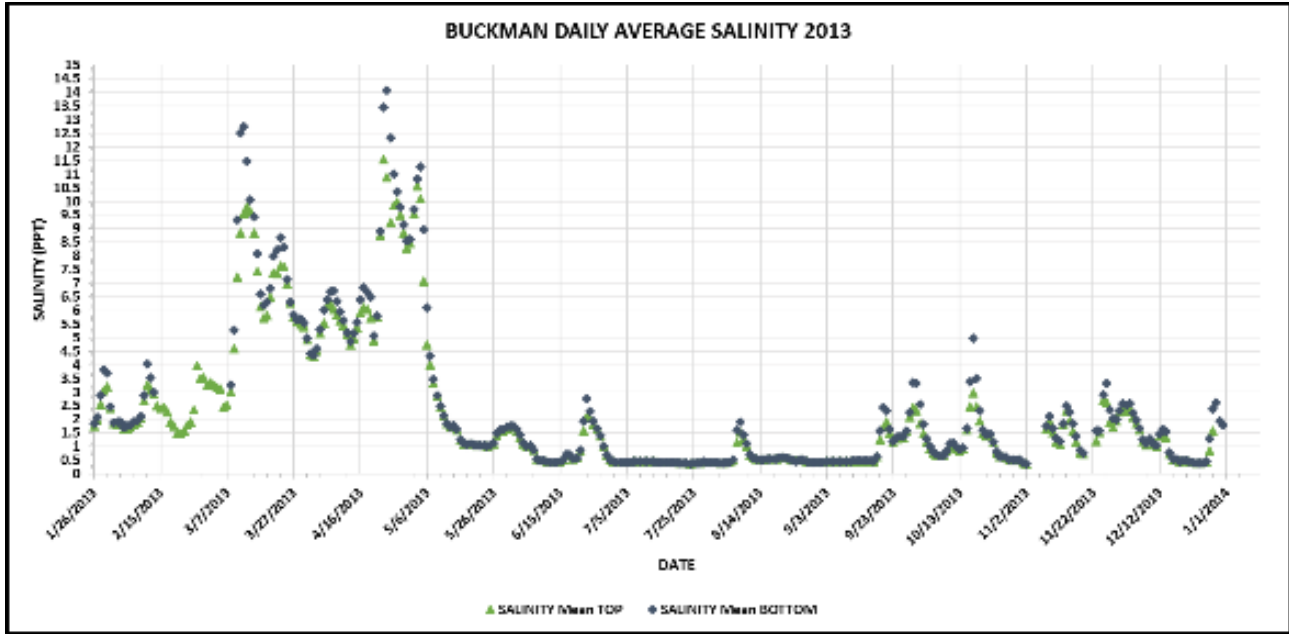


FIGURE 62: DAILY AVERAGE SALINITY AT BUCKMAN BRIDGE IN 2013

TABLE 25: SUMMARY STATISTICS OF DAILY AVERAGE SPECIFIC CONDUCTANCE IN 2013

STATISTIC	BOTTOM CONDUCTANCE (μ MHOS/CM)	TOP CONDUCTANCE (μ MHOS/CM)
Number of Cases	335	353
Minimum	782	784
Maximum	22,831	19,038
Mean	4,321	4,012
Standard Deviation	4,612	4,016
1%	844	849
5%	899	906
10%	934	943
20%	1,014	1,016
25%	1,100	1,112
30%	1,179	1,253
40%	1,985	2,047
50%	2,649	2,662
60%	3,294	3,238
70%	4,224	3,923
75%	4,788	4,556
80%	6,359	5,726
90%	11,103	10,216
95%	15,075	13,920
99%	20,523	16,853

2014 Data Evaluation

Thirty-minute DO, specific conductance, and water temperature measurements reported from two depths were processed to obtain daily average DO concentrations and DOSAT. Dates with less than 35 observations were excluded from further analysis. **Figure 63** and **Figure 64** present daily average DO and DOSAT at the two depths. The minimum daily DO at both depths was greater than 5 mg/L. **Table 26** provides summary statistics for DO and DOSAT at each depth.

As seen in **Figure 65**, daily average salinities at Buckman Bridge in 2014 ranged between 0.25 and 12.78 ppt. **Table 27** presents summary statistics of the daily average specific conductance at the two depths. Approximately 80% of the daily average specific conductance values were below the predominantly marine threshold of 4,580 $\mu\text{mhos/cm}$.

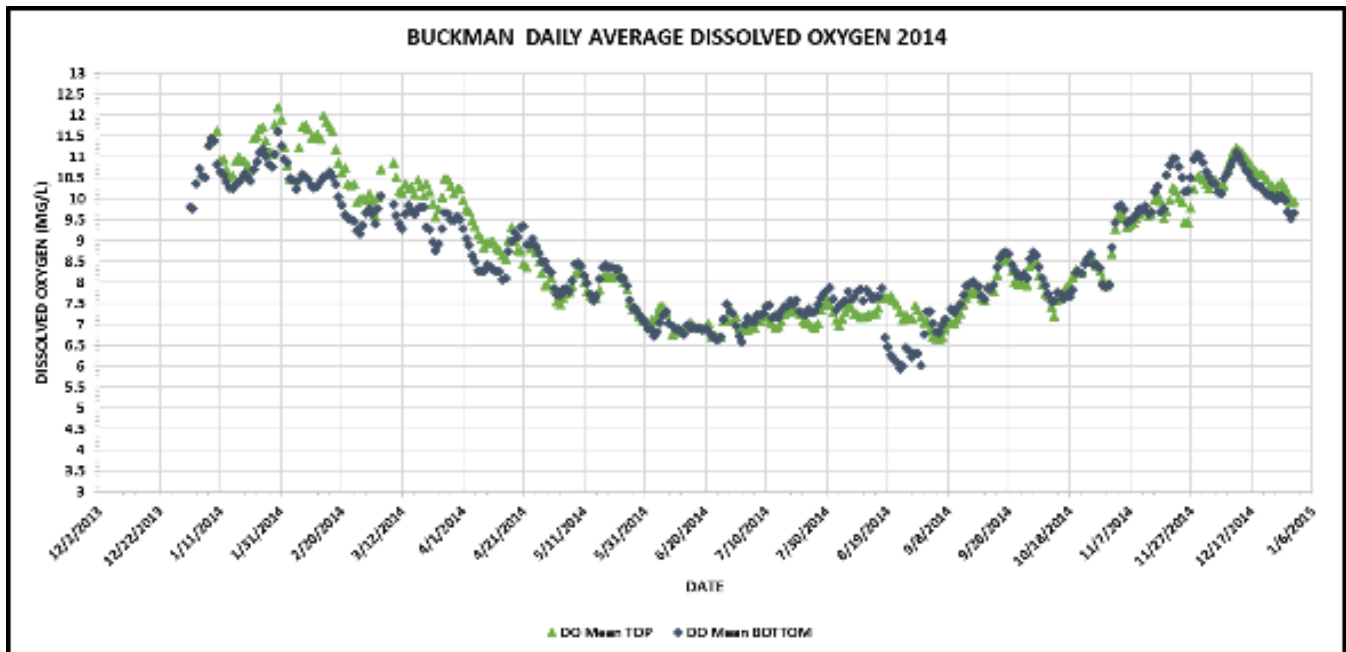


FIGURE 63: DAILY AVERAGE DO CONCENTRATIONS AT BUCKMAN BRIDGE IN 2014

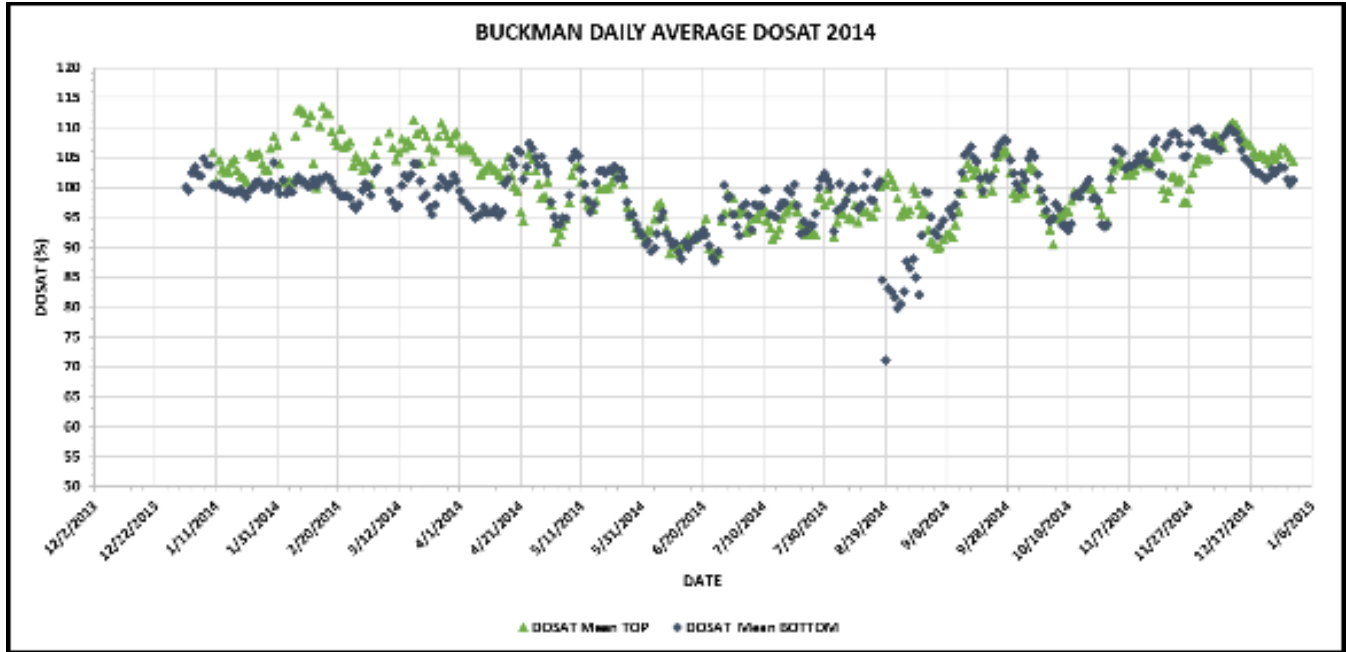


FIGURE 64: DAILY AVERAGE DOSAT AT BUCKMAN BRIDGE IN 2014

TABLE 26: SUMMARY STATISTICS OF DAILY AVERAGE DO AND DOSAT FOR 2014

STATISTIC	BOTTOM DO	BOTTOM DOSAT	TOP DO	TOP DOSAT
Number of Cases	369	369	361	361
Minimum	5.94	71.08	6.63	88.61
Maximum	11.60	109.82	12.18	113.55
Mean	8.73	99.29	8.81	100.65
Standard Deviation	1.40	5.68	1.54	5.72
1%	6.12	81.69	6.68	89.20
5%	6.72	89.36	6.91	91.36
10%	6.94	92.14	7.01	92.66
20%	7.36	95.24	7.21	95.22
25%	7.57	96.28	7.33	95.94
30%	7.70	97.12	7.54	96.80
40%	8.10	98.96	7.92	99.13
50%	8.45	100.03	8.45	101.08
60%	9.33	101.13	9.45	102.91
70%	9.76	102.30	10.07	104.26
75%	10.00	102.94	10.25	105.06
80%	10.26	103.73	10.36	105.74
90%	10.61	105.98	10.88	107.87
95%	10.88	107.50	11.42	109.56
99%	11.27	109.51	11.84	112.43

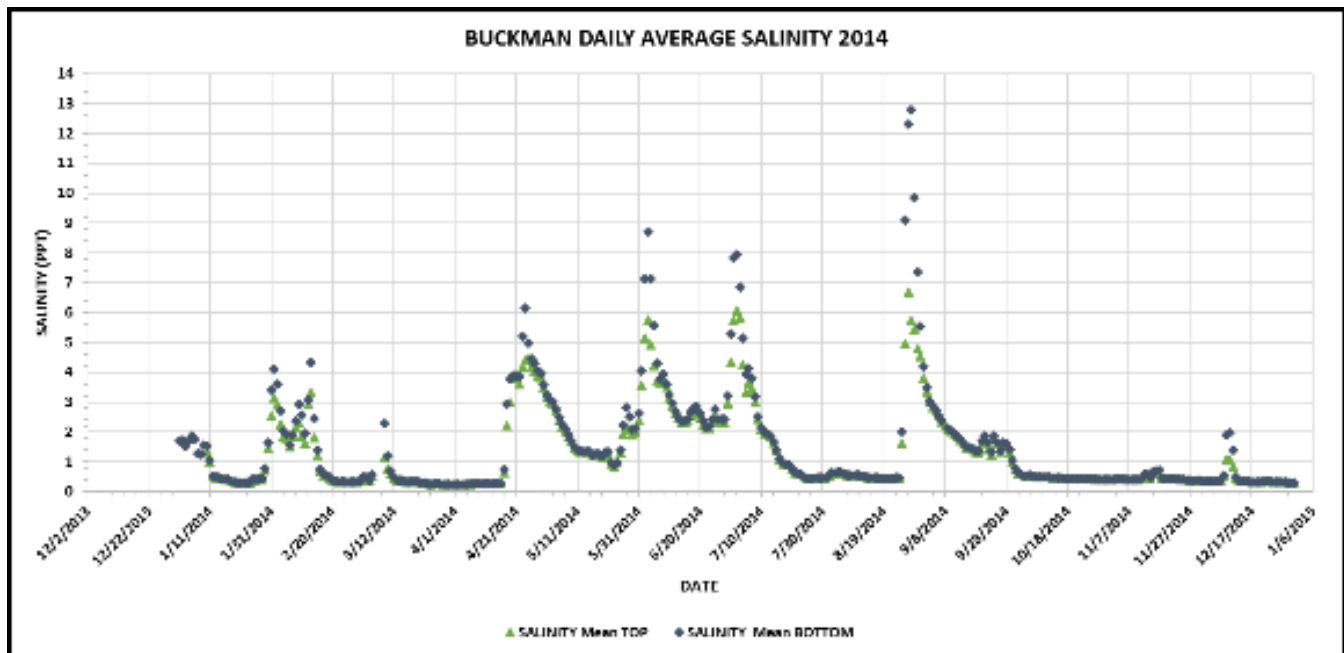


FIGURE 65: DAILY AVERAGE SALINITY AT BUCKMAN BRIDGE IN 2014

TABLE 27: SUMMARY STATISTICS OF DAILY AVERAGE SPECIFIC CONDUCTANCE IN 2014

STATISTIC	BOTTOM CONDUCTANCE (μ MHOS/CM)	TOP CONDUCTANCE (μ MHOS/CM)
Number of Cases	368	361
Minimum	567	567
Maximum	20,846	11,340
Mean	2,790	2,466
Standard Deviation	3,055	2,308
1%	571	571
5%	602	600
10%	677	672
20%	773	772
25%	864	821
30%	924	907
40%	990	979
50%	1,192	1,138
60%	2,498	2,008
70%	3,324	3,099
75%	3,872	3,654
80%	4,543	4,275
90%	6,549	6,047
95%	8,026	7,473
99%	15,092	9,979

APPENDIX A: BMAP PROJECTS

The BMAP project tables below show the status of the projects as of December 31, 2014. 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 of the projects is also included in the tables.

Notes to tables:

N/A = Not applicable

- = Empty cell/no data

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

FACILITY NAME	PROJECT NUMBER	DESCRIPTION	TYPE(S) OF BMP(S) IMPLEMENTED	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	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

FACILITY NAME	PROJECT NUMBER	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

City of Green Cove Springs MS4 FLR04E1031,043.7

FACILITY NAME	PROJECT NUMBER	DESCRIPTION	TYPE(S) OF BMP(S) IMPLEMENTED	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**

FACILITY NAME	PROJECT NUMBER	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 Ball Fields	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

Georgia-Pacific FL000276333,182

FACILITY NAME	PROJECT NUMBER	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

FACILITY NAME	PROJECT NUMBER	DESCRIPTION	TYPE(S) OF BMP(S) IMPLEMENTED	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

Clay County Non-MS4.....499.4

FACILITY NAME	PROJECT NUMBER	DESCRIPTION	TYPE(S) OF BMP(S) IMPLEMENTED	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

FACILITY NAME	PROJECT NUMBER	DESCRIPTION	TYPE(S) OF BMP(S) IMPLEMENTED	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

FACILITY NAME	PROJECT NUMBER	DESCRIPTION	TYPE(S) OF BMP(S) IMPLEMENTED	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	05/31/2015	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

Trade with Hiawatha WWTF

ACTIVITY	SCHEDULE
a. Start Date	Completed
b. Completion Date - Design	Completed
c. Completion Date - Construction	The line is constructed but need the East Putnam County Regional WWTF to be completed for regional tie in. Estimated completion is 05/31/2015.
d. Completion Date – Completion of Project	05/31/2015

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

FACILITY NAME	PROJECT NUMBER	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

Welaka Non-MS4.....90.4

FACILITY NAME	PROJECT NUMBER	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

Wasteload Allocation (kg/yr)

Clay County MS4 FLR04E045.....2,418

FACILITY NAME	PROJECT NUMBER	DESCRIPTION	TYPE(S) OF BMP(S) IMPLEMENTED	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

Wasteload Allocation (kg/yr)

City of Green Cove Springs Aggregate FL06356187,752.5

FACILITY NAME	PROJECT NUMBER	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

City of Green Cove Springs MS4 FLR04E1036,266.5

FACILITY NAME	PROJECT NUMBER	DESCRIPTION	TYPE(S) OF BMP(s) IMPLEMENTED	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 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

Wasteload Allocation (kg/yr)

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

FACILITY NAME	PROJECT NUMBER	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 FL0002763165,909**

FACILITY NAME	PROJECT NUMBER	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

Seminole Electric FL003649814,732

FACILITY NAME	PROJECT NUMBER	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

FACILITY NAME	PROJECT NUMBER	DESCRIPTION	TYPE(S) OF BMP(S) IMPLEMENTED	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

Clay County Non-MS4.....4,659

FACILITY NAME	PROJECT NUMBER	DESCRIPTION	TYPE(S) OF BMP(S) IMPLEMENTED	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 7 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**

FACILITY NAME	PROJECT NUMBER	DESCRIPTION	TYPE(S) OF BMP(S) IMPLEMENTED	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

FACILITY NAME	PROJECT NUMBER	DESCRIPTION	TYPE(S) OF BMP(S) IMPLEMENTED	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	04/30/2015	150	330
Putnam Non-MS4	PUT-3	Septic Tank Phase-Out	N/A	N/A	04/30/2015	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

Trade with Hiawatha WWTF

ACTIVITY	SCHEDULE
a. Start Date	Completed
b. Completion Date - Design	Completed
c. Completion Date - Construction	The line is constructed but need the East Putnam County Regional WWTF to be completed for regional tie in. Estimated completion is 04/30/2015.
d. Completion Date – Completion of Project	04/30/2015

Septic Tank Phase-Out

ACTIVITY	SCHEDULE
a. Start Date	Completed
b. Completion Date - Design	Completed
c. Completion Date - Construction	04/30/2015
d. Completion Date – Completion of Project	04/30/2015

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**

FACILITY NAME	PROJECT NUMBER	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

Welaka Non-MS4.....838

FACILITY NAME	PROJECT NUMBER	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 FL004153012,418

FACILITY NAME	PROJECT NUMBER	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 FL062688121,188

FACILITY NAME	PROJECT NUMBER	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

City of Atlantic Beach MS4 FLS000012.....1,651

FACILITY NAME	PROJECT NUMBER	DESCRIPTION	TYPE(S) OF BMP(S) IMPLEMENTED	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	2 nd 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
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.

FACILITY NAME	PROJECT NUMBER	DESCRIPTION	TYPE(S) OF BMP(S) IMPLEMENTED	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	2 nd Generation Baffle Box	219	Completed	80	176
COJ MS4 FLS000012	COJ-2	Sixmile Creek-West 1 st 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	2 nd 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

FACILITY NAME	PROJECT NUMBER	DESCRIPTION	TYPE(S) OF BMP(S) IMPLEMENTED	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

FACILITY NAME	PROJECT NUMBER	DESCRIPTION	TYPE(S) OF BMP(S) IMPLEMENTED	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

FACILITY NAME	PROJECT NUMBER	DESCRIPTION	TYPE(S) OF BMP(S) IMPLEMENTED	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	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
COJ MS4 FLS000012	COJ-64	FDOT Pine Avenue Sidewalk	Dry Retention (1")	7	Completed	9	20

FACILITY NAME	PROJECT NUMBER	DESCRIPTION	TYPE(S) OF BMP(S) IMPLEMENTED	ACRES TREATED	DEADLINE	PROJECT TN REDUCTION (KG/YR)	PROJECT TN REDUCTION (LBS/YR)
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
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

FACILITY NAME	PROJECT NUMBER	DESCRIPTION	TYPE(S) OF BMP(S) IMPLEMENTED	ACRES TREATED	DEADLINE	PROJECT TN REDUCTION (KG/YR)	PROJECT TN REDUCTION (LBS/YR)
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
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

FACILITY NAME	PROJECT NUMBER	DESCRIPTION	TYPE(S) OF BMP(S) IMPLEMENTED	ACRES TREATED	DEADLINE	PROJECT TN REDUCTION (KG/YR)	PROJECT TN REDUCTION (LBS/YR)
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 CountyLine	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
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

FACILITY NAME	PROJECT NUMBER	DESCRIPTION	TYPE(S) OF BMP(S) IMPLEMENTED	ACRES TREATED	DEADLINE	PROJECT TN REDUCTION (KG/YR)	PROJECT TN REDUCTION (LBS/YR)
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

Wasteload Allocation (kg/yr)

City of Jacksonville Beach WWTF FL00203121,015

FACILITY NAME	PROJECT NUMBER	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

City of Jacksonville Beach MS4 FLS000013.....4,804

FACILITY NAME	PROJECT NUMBER	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**Wasteload Allocation (kg/yr)****City of Neptune Beach WWTF FL0020427.....6,162**

FACILITY NAME	PROJECT NUMBER	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

City of Neptune Beach MS4 FLS000012.....1,437

FACILITY NAME	PROJECT NUMBER	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

FACILITY NAME	PROJECT NUMBER	DESCRIPTION	TYPE(S) OF BMP(S) IMPLEMENTED	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 Margarets 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
CC MS4 FLR04E045	CC-21	Old Jennings Rd Widening from Blanding Blvd to Branan 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

FACILITY NAME	PROJECT NUMBER	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 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 FL0620564654,672

FACILITY NAME	PROJECT NUMBER	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	9/30/2015	9/30/2015	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 FL000040074,305**

FACILITY NAME	PROJECT NUMBER	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.

FACILITY NAME	PROJECT NUMBER	DESCRIPTION	TYPE(S) OF BMP(S) IMPLEMENTED	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

FACILITY NAME	PROJECT NUMBER	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

Town of Orange Park MS4 FLR04E075.....3,348

FACILITY NAME	PROJECT NUMBER	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)

United States Navy Aggregate FL063945111,684

FACILITY NAME	PROJECT NUMBER	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	10/01/2015	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

United States Navy Aggregate Schedule

Expand Reuse System

PROJECTS	SCHEDULE
a. Start Date	Completed
b. Completion Date – Design	Completed
c. Submit 1 st Progress Report	Completed
d. Submit 2 nd Progress Report	Completed
e. Submit 3 rd Progress Report	Completed
f. Submit 4 th Progress Report	Completed
c. Completion Date - Construction	10/01/2015
d. Completion Date – Project	10/01/2015

Modifications to Mayport WWTF

PROJECTS	SCHEDULE
a. Start Date	Completed
b. Completion Date – Design	02/25/2014
c. Begin Construction	04/01/2014
d. End Construction	07/01/2015
e. Operational Level Attained	10/01/2015

Name of Facility

Wasteload Allocation (kg/yr)

United States Navy MS4s FLR04E091 and FLR04E056.....7,232

FACILITY NAME	PROJECT NUMBER	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

FACILITY NAME	PROJECT NUMBER	DESCRIPTION	TYPE(S) OF BMP(S) IMPLEMENTED	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 – 16 miles of swales plus 2 additional miles per consent letter	September 30, 2015
c. Completion – 24 miles of swales plus 3 additional miles per consent letter	September 30, 2016
d. Completion – 40 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

FACILITY NAME	PROJECT NUMBER	DESCRIPTION	TYPE(S) OF BMP(S) IMPLEMENTED	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 Kindlewood 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
Load Allocation (kg/yr)
St. Johns County Non-MS4..... 4,865 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.

FACILITY NAME	PROJECT NUMBER	DESCRIPTION	TYPE(S) OF BMP(S) IMPLEMENTED	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	1,468	3,230
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	2 nd Generation Baffle Boxes	N/A	Completed	119	262
SJC Non-MS4	SJC-29	Deep Creek West RST Improvements**	Wet Pond, Treatment Wetland	N/A	10/31/2017	909	2,000
SJC Non-MS4	SJC-30	Fruit Cove Secret Oaks Place Baffle Box	2 nd Generation Baffle Boxes	N/A	10/31/2017	42	92
SJC Non-MS4	SJC-31	Fruit Cove Lemon Wood Rd Baffle Box	2 nd Generation Baffle Boxes	N/A	10/31/2017	104	229
SJC Non-MS4	SJC-32	Fruit Cove Degrove Rd Baffle Box	2 nd Generation Baffle Boxes	N/A	10/31/2017	36	79
SJC Non-MS4	SJC-33	CR 13 & Joe Ashton Rd Baffle Box	2 nd Generation Baffle Boxes	N/A	10/31/2017	75	165
SJC Non-MS4	SJC-34	Colee Cove Rd Baffle Box	2 nd Generation Baffle Boxes	N/A	10/31/2017	350	770
SJC Non-MS4	SJC-35	CR 13 Culvert Box #8	2 nd Generation Baffle Boxes	N/A	Completed	68	150
SJC Non-MS4	N/A	Total Project Reductions	N/A	N/A	N/A	5,838	12,844
SJC Non-MS4	N/A	Credit/(Deficit)	N/A	N/A	N/A	857	1,886

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