BASIN MANAGEMENT ACTION PLAN

FINAL

PHASE 2

for the Implementation of Total Daily Maximum Loads for Fecal Coliforms

Developed by the Florida Department of Environmental Protection

in the Lower St. Johns River Basin Tributaries II

developed 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 Tributaries Stakeholders

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LIST OF ACRONYMS AND ABBREVIATIONS

ARV	Air Release Valve
BMAP	Basin Management Action Plan
BMP	Best Management Practice
CARE	Citizen Action Response Effort
CCTV	Closed-Circuit Television
C.F.R.	Code of Federal Regulations
CFU	Colony Forming Unit
CIPP	Cured In Place Pipe
COJ	City of Jacksonville
DBPR	Department of Business and Professional Regulation
Department	Florida Department of Environmental Protection
E. coli	Escherichia coli
EQD	Environmental Quality Division
EPA	U.S. Environmental Protection Agency
F.A.C.	Florida Administrative Code
FDACS	Florida Department of Agriculture and Consumer Services
FDOH	Florida Department of Health
FDOT	Florida Department of Transportation
FWRA	Florida Watershed Restoration Act
HDPE	High Density Polyethylene
IWR	Impaired Water Rule
LSJR	Lower St. Johns River
MAPS	Managed Aquatic Plant Systems
MF	Membrane Filter
mL	Milliliter
MPN	Most Probable Number
MS4	Municipal Separate Storm Sewer System
MSMP	Master Stormwater Management Plan
NOI	Notice of Intent
NS	Naval Station
OSTDS	Onsite Sewage Treatment and Disposal System
OAWP	Office of Agricultural Water Policy
PIC	Potential Illicit Connection
qPCR	Quantitative Polymerase Chain Reaction
SJRWMD	St. Johns River Water Management District
SR	State Road
SSO	Sanitary Sewer Overflow
TAT	Tributary Assessment Team
TMDL	Total Maximum Daily Load
TV	Television
WBID	Waterbody Identification

SUMMARY

TOTAL MAXIMUM DAILY LOADS

The BMAP provides for phased implementation under Subparagraph 403.067(7)(a)1, Florida Statutes (F.S.), and this adaptive management process will continue until the TMDLs are met. The phased BMAP approach allows for incrementally reducing loadings through the implementation of projects, while simultaneously monitoring and conducting studies to understand water quality dynamics (*e.g.*, sources and response variables) in each impaired waterbody. Progress will continue to be evaluated and adjustments will be made or new projects added, as needed, to meet the TMDLs.

The Lower St. Johns River (LSJR) Tributaries Basin Management Action Plan II was adopted by Secretarial Order of the Florida Department of Environmental Protection in August 2010. This document describes the management strategies for the Phase 2 of the LSJR Tributaries BMAP II. For this second BMAP iteration (five-year period), additional strategies for continuing water quality improvements and new monitoring to identify additional sources are proposed to help achieve the adopted fecal coliform TMDLs. The 2010 BMAP and its associated Secretarial Order remain in effect, and the projects adopted through it are still ongoing unless otherwise stated. Through the original 2010 BMAP and this Phase 2 plan, the department will track the ongoing efforts continuing from Phase 1, as well as the additional efforts identified in this document.

TMDLS, WATER QUALITY MONITORING, AND TRENDS

TMDLs are water quality targets for specific pollutants (such as fecal coliforms) that are established for impaired waterbodies that do not meet designated uses based on Florida water quality standards. The department identified 75 tributaries in the LSJR Basin as verified impaired for fecal coliforms. The LSJR Tributaries BMAP II includes 15 of these 75 impaired tributaries. The department adopted TMDLs in 2006 for Williamson Creek, Moncrief Creek, and Wills Branch. The department adopted TMDLs in 2009 for McCoy Creek, Deep Bottom Creek, Blockhouse Creek, Sherman Creek, Pottsburg Creek, Middle Trout River, and Lower Trout River. In addition, the department adopted TMDLs in 2010 for Craig Creek, Fishing Creek, Hopkins Creek, Cormorant Branch, and Greenfield Creek.

During BMAP II, Phase 1, consisting of the first five years after BMAP adoption, stakeholders developed strong, proactive programs to identify and eliminate sources of fecal coliforms. The Florida

Department of Transportation (FDOT) and city of Jacksonville (COJ) trained their field staff to identify illicit connections to stormwater conveyances. In June 2014, FDOT started the implementation of mandatory illicit discharge detection and elimination (IDDE) training for all staff and contractors working in its rights-of-way. The Florida Department of Health (FDOH)–Duval County inspected all 15 BMAP waterbodies, designated as per their waterbody identification (WBID) number, to ensure on-site sewage and disposal systems (OSTDS) were functioning properly and expanded the program into other high-priority watersheds. JEA has an intensive inspection and remediation program for JEA-owned sanitary sewer conveyances that prioritizes infrastructure near waterbodies for inspections and repairs or replacement as needed.

Although these are model programs, they cannot fully cover the entire county in five years. With more time, these programs will continue to provide additional benefits to the BMAP WBIDs, as well as the other impaired waterbodies in Duval County. Proactive and reactive programs together build better stewardship than reactive programs alone. Examples of proactive programs include JEA's inspections of sanitary sewer conveyances near waterbodies and FDOH–Duval County's septic tank inspection program focused on watersheds with impaired waters. An example of a reactive program is the monitoring protocol instituted by the Tributaries Assessment Team (TAT) to respond to high hits of fecal coliform by returning to the field as soon as possible to walk and look for sources and take additional samples to help identify source locations. Additionally, the COJ's citizen call line, (904) 630–CITY (2489), enables citizens to report problems, which are then directed to the appropriate department that can address them. Each of these entities is also a participant in the TAT. The collaboration built through the TAT Program has bridged communication gaps and built a stronger infrastructure to address the fecal coliform impairments.

The TAT implemented the BMAP monitoring plan during Phase 1 of the BMAP. Data collected from 2010 through 2014 were assessed to determine water quality trends in the 15 LSJR Tributaries BMAP II. The contributions made by the TAT during the first five-year iteration were invaluable for communicating about source tracking, locating, and elimination efforts. The TAT met via conference call monthly and discussed recent data results and coordinated follow-up actions. TAT members call one another for help in identifying sources and share staff and equipment to access storm drains and remove problems.

The TAT has been unable to identify the remaining sources of fecal coliform in the BMAP streams via the typical method of sampling for fecal coliform and searching the region for signs of a source. In Phase 2 of the BMAP, the department will strategically add additional monitoring for parameters that indicate the presence of human waste. The TAT will then assist the department in locating sources as the sampling leads the team deeper into the upstream reaches of stormwater conveyances. This more intense monitoring will be applied to areas with persistently high results and where TAT prototcals are unsuccessful in identifying sources in BMAP II WBIDs. The TAT is dedicated to identifying and eliminating sources of human waste.

While fecal coliform reductions have occurred in the tributaries due to the strategies implemented in the first BMAP iteration, these tributaries continue to require improvements to meet state water quality standards. The median of exceedances for each WBID using the TMDL data period and the BMAP data period are shown in **Table 1**. Using the median of exceedances for the TMDL data period, the percent reduction needed to bring the exceedance median down to 400 colony-forming units per 100 milliliters (CFU/100mL) was calculated. This number is the estimated total reduction needed and is represented by 100%. The last column shows progress toward meeting the TMDL.

Since the adoption of the BMAP, the greatest improvement in the magnitude of the exceedances occurred in Wills Branch (83% reduction) (see **Table 1**). Greenfield Creek, Cormorant Branch, McCoy Creek, Moncrief Creek, Blockhouse Creek, and Middle Trout River improved during Phase 1 by over 50%. Lower Trout River, Deep Bottom Creek, Fishing Creek, Sherman Creek, and Craig Creek exceedance median values improved. Willaimson Creek (5% reduction) exceedance median value remained similar to the TMDL. Hopkins Creek and Pottsburg Creek exceedance medians increased since the BMAP implementation began.

BMAP IMPLEMENTATION AND TRACKING

In this second phase, the department and stakeholders will continue to track implementation efforts, as well as monitor water quality in the TMDL waterbodies, to ensure that the BMAP is carried out and to measure its effectiveness. The stakeholders will meet approximately annually to discuss implementation issues, consider new information, and determine other management strategies needed for waterbodies that are not projected to meet their TMDLs.

MANAGEMENT STRATEGIES

Each entity responsible for implementing management strategies as part of the BMAP will complete an annual report for submittal to the department. The report will track the implementation status of the management strategies listed in the BMAP, and document additional management strategies undertaken to further the water quality improvements in the basin. Water quality trends will also be included in the BMAP annual report to help assess strategies and identify the need for new actions.

TABLE 1: EXCEEDANCE MEDIANS FOR TMDL PERIOD OF DATA AND BMAP PERIOD OF DATA

WBID NUMBER	WATERBODY NAME	TMDL DATA (1996–2003) EXCEEDANCE MEDIAN (CFU/100ML)	BMAP DATA (2010–14) EXCEEDANCE MEDIAN (CFU/100ML)	PHASE 1 PROGRESS TOWARD TMDL
2203	Middle Trout River	1,184	641	69%
2207	Blockhouse Creek	2,200	1,081	62%
2227	Sherman Creek	1,400	1,231	17%
2228	Moncrief Creek	2,600	1,300	59%
2240	Greenfield Creek	1,354	721	66%
2257	McCoy Creek	2,510	1,200	62%
2266	Hopkins Creek	1,200	1,351	-19%
2282	Wills Branch	4,000	1,000	83%
2297	Craig Creek	3,000	2,550	17%
2316	Williamson Creek	2,400	2,300	5%
2324	Fishing Creek	1,300	1,081	24%
2361	Deep Bottom Creek	2,200	1,500	39%
2381	Cormorant Branch	1,500	811	63%
2203A	Lower Trout River	1,000	721	47%
2265B	Pottsburg Creek	800	1,532	-183%

SECTION 1: CONTEXT, PURPOSE, AND SCOPE OF THE PLAN

For this second phase of the Basin Management Action Plan, new strategies for continuing water quality improvements in the impaired waters to help achieve the fecal coliform Total Maximum Daily Loads in the Lower St. Johns River (LSJR) Tributaries II Basin are proposed. The 2010 LSJR Tributaries BMAP II remains in effect, and strategies adopted through it are still under Secretarial Order of the Florida Department of Environmental Protection.

This second iteration BMAP identifies additional management strategies to continue fecal coliform reductions in 15 of the 25 most impaired tributaries in the LSJR Basin, and identifies additional monitoring to determine sources that could be addressed to further reduce fecal coliforms. Paragraph 403.067(7)(a)1, Florida Statutes (F.S.), allows for phased implementation of management strategies designed to achieve incremental reductions, while simultaneously monitoring and conducting studies to better understand water quality dynamics in each impaired waterbody. This BMAP continues the phased implementation to achieve the fecal coliform TMDLs in the tributaries.

1.1 TMDLS IN THE LSJR TRIBUTARIES II BASIN

The LSJR Tributaries BMAP II update includes the 15 tributaries with adopted TMDLs identified as the segments with waterbody identification (WBID) numbers with the worst-case condition for fecal coliforms, after those tributaries included in BMAP I (see **Figure 1**). This worst-case determination was made using a ranking method that establishes the severity of water quality impairment based on the number of exceedances of fecal coliform colony counts. The water quality ranking method uses the total number of fecal coliform samples in the waterbody during the period of record to categorize how many samples were over 800, 5,000, and 10,000 colony-forming units per 100 milliliters (CFU/100mL). A combined rank is created based on the number of exceedances in each category. The WBIDs are sorted from worst to best to provide a guideline for assessment priorities, with the worst-case WBID ranked as number one.

The water quality criteria for fecal coliform bacteria are detailed in Chapter 62-302, Florida Administrative Code (F.A.C.). The requirements for exceeding maximum fecal coliform concentrations in a Class III waterbody are stated as follows: *The most probable number (MPN) or membrane filter (MF) counts per 100 milliliters (mL) of fecal coliform bacteria shall not exceed a monthly average of 200, nor exceed 400 in 10% of samples, nor exceed 800 on any one day.* The criteria states that monthly

averages shall be expressed as geometric means based on a minimum of 10 samples taken over a 30-day period. However, there were insufficient data (fewer than 10 samples in a given month) available to evaluate the geometric mean criterion for fecal coliform bacteria. Therefore, the criterion selected for the TMDLs was not to exceed 400 CFU/100mL.

The department adopted fecal coliform TMDLs for Williamson Creek, Moncrief Creek, and Wills Branch in 2006. In 2009, the department adopted the TMDLs for McCoy Creek, Deep Bottom Creek, Blockhouse Creek, Sherman Creek, Pottsburg Creek, Middle Trout River, and Lower Trout River. In 2010, the department adopted the TMDLs for Craig Creek, Fishing Creek, Hopkins Creek, Cormorant Branch, and Greenfield Creek. **Table 2** lists the TMDLs adopted by rule and the pollutant load allocations for the 15 LSJR Tributaries BMAP II watersheds.

Since the adoption of the TMDLs, several of the WBID boundaries have been adjusted to improve their accuracy. Also, three WBIDs have been further divided into marine and freshwater segments. For further details about these WBID modifications, see **Section 2.3**.

TABLE 2: TMDLS FOR THE LSJR TRIBUTARIES INCLUDED IN BMAP II

*During the first iteration, these WBIDs have since been split into marine and freshwater sections with new WBID numbers.

WBID NUMBER	WBID NAME	WASTELOAD ALLOCATION FOR WASTEWATER	WASTELOAD ALLOCATION FOR NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORMWATER (% REDUCTION)	LOAD ALLOCATION (% REDUCTION)
2297	Craig Creek	Not applicable	87%	87%
2257	McCoy Creek	Not applicable	84%	84%
2316	Williamson Creek	Not applicable	83%	83%
2324	Fishing Creek	Must meet permit limits	69%	69%
2361	Deep Bottom Creek	Not applicable	82%	82%
2228	Moncrief Creek*	83%	83%	83%
2207	Blockhouse Creek	Not applicable	82%	82%
2266	Hopkins Creek	Not applicable	67%	67%
2381	Cormorant Branch	Not applicable	73%	73%
2282	Wills Branch	Not applicable	80%	80%
2227	Sherman Creek	Not applicable	71%	71%
2240	Greenfield Creek*	Not applicable	70%	70%
2265B	Pottsburg Creek*	Not applicable	50%	50%
2203	Trout River	Not applicable	66%	66%
2203A	Trout River	Not applicable	60%	60%

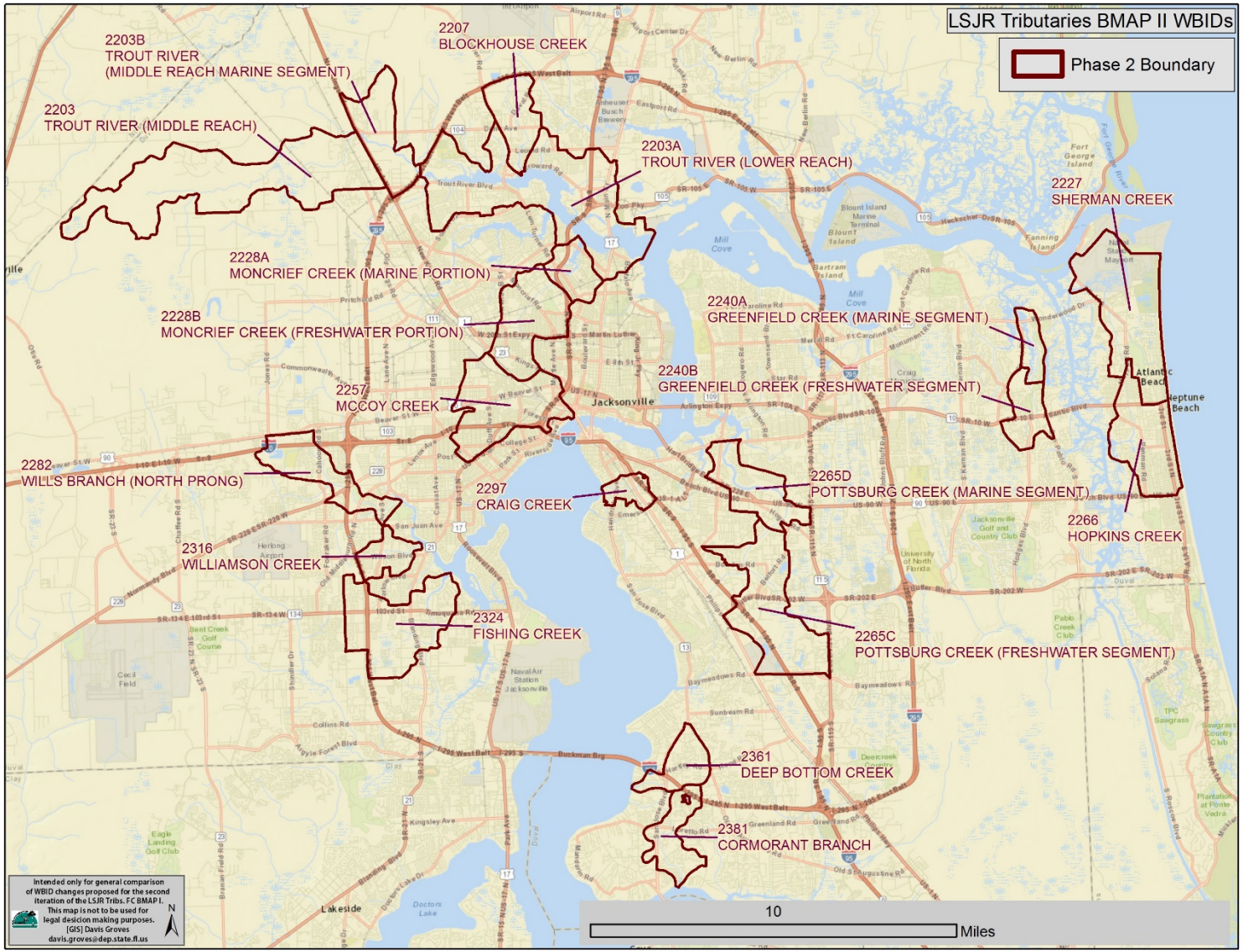

FIGURE 1: LSJR BASIN TRIBUTARIES INCLUDED IN BMAP II

1.2 RESPONSIBLE PARTIES AND KEY STAKEHOLDERS

Sources of fecal coliform loading in the 15 tributaries include wastewater, septic tanks, and stormwater. The entities responsible for addressing these sources in the BMAP tributaries include the city of Atlantic Beach, city of Jacksonville (COJ), city of Jacksonville Beach, city of Neptune Beach, Florida Department of Health (FDOH) in Duval County, Florida Department of Transportation (FDOT), JEA, and Naval Station (NS) Mayport. In addition to these entities, the department is also essential to the implementation of BMAP activities.

1.3 SUFFICIENCY-OF-EFFORT APPROACH

Fecal coliforms can be highly variable and easily transported, making it difficult in many cases to identify the source of the bacteria. For this reason, detailed allocations were not made to each of the BMAP stakeholders. In Phase 1 of the BMAP, the stakeholders were asked to identify their strategies to reduce or remove bacteria sources that have been implemented since 1996 (the start of the TMDL verified period) and additional efforts that were under way or planned in five years from BMAP adoption. The sufficiency-of-effort evaluation was not an assessment of each agency's individual activities; instead, it focused on whether the activities submitted by all the entities corresponded to the potential sources identified in the watershed and whether the total efforts were adequate to eliminate the known sources, assess unknown sources, and prevent the development of new sources.

For Phase 2, the stakeholders submitted additional activities that were implemented since the first BMAP iteration was adopted, as well as activities that are planned in the future. These activities are targeted in areas of the basin where additional efforts are needed to further reduce fecal coliform bacteria in the tributaries.

1.4 FECAL COLIFORM REDUCTIONS SINCE BMAP ADOPTION

To determine the progress made during the first BMAP iteration (as reflected in Phase 1 annual reports), medians were calculated using both non-exceedance ($\leq$400 CFU/100mL) and exceedance (>400 CFU/100mL) data for the BMAP (2010–14) data period. These "all-data medians" were compared for progress by dividing the BMAP data period median by the TMDL data period exceedance (>400CFU/100mL) median. The methodology, for Phase 2 of the BMAP, will use exceedance median data for the BMAP and TMDL data periods. This method is more accurate and will better show the progress made towards meeting the TMDL percent reductions.

Table 3 below shows the results of the more accurate methodology using the formula shown below. Based on this revised method to calculate progress during the BMAP period, the department compared the TMDL data period monitoring results to the BMAP data period monitoring results. Using the median of exceedances for the TMDL data period, the reduction needed to bring the exceedance median down to 400 CFU/100mL was calculated. The reduction achieved for each WBID was then calculated by subtracting the TMDL required reduction from the BMAP exceedance median data. The median of exceedances for each WBID using the TMDL data period and the BMAP data period are shown in **Table 3** below. The last column shows progress toward meeting the TMDL.

$$\frac{(TMDL\ Exceedance\ Median - BMAP\ Exceedance\ Median)}{(TMDL\ Exceedance\ Median - 400)} x100$$

Since the adoption of the BMAP, the greatest improvement in the magnitude of the exceedances occurred in Wills Branch (83% reduction) (see **Table 3**). Greenfield Creek, Cormorant Branch, McCoy Creek, Moncrief Creek, Blockhouse Creek, and Middle Trout River improved during Phase 1 by over 50%. Lower Trout River, Deep Bottom Creek, Fishing Creek, Sherman Creek, and Craig Creek exceedance median values improved. Willaimson Creek (5% reduction) exceedance median value remained similar to the TMDL. Hopkins Creek and Pottsburg Creek exceedance medians increased since the BMAP implementation began.

However, **Table 3** does not reflect the frequency of exceedances which is a key component in meeting water quality standards. For this second BMAP iteration (and subsequent annual reports), the department will focus on an approach that mirrors the Impaired Surface Waters Rule (IWR) (Chapter 62-303, F.A.C.) methodology for assessing the impairment status of a waterbody. The criteria is set so that no more than 10% of the data are exceeding the water quality standard of 400 CFU/100mL during each verified period (see **Table 4**). **Table 4** shows the minimum number of samples needed to place a waterbody on the verified list with at least a 90% confidence level for the applicable verified period (January 1, 2007, to June 30, 2014). The fifth column (min number of exceedances) shows the minimum number of exceedances for the waterbody to be considered impaired for Fecal Coliform for the verified period (found in Rule 62-303.420, F.A.C., Table 3).

TABLE 3: EXCEEDANCE MEDIANS FOR TMDL PERIOD OF DATA AND BMAP PERIOD OF DATA

WBID NUMBER	WATERBODY NAME	TMDL DATA (1996–2003) EXCEEDANCE MEDIAN	BMAP DATA (2010–14) EXCEEDANCE MEDIAN	PHASE 1 PROGRESS TOWARD TMDL
2203	Middle Trout River	1,184	641	69%
2207	Blockhouse Creek	2,200	1081	62%
2227	Sherman Creek	1,400	1231	17%
2228	Moncrief Creek	2,600	1300	59%
2240	Greenfield Creek	1,354	721	66%
2257	McCoy Creek	2,510	1200	62%
2266	Hopkins Creek	1,200	1351	-19%
2282	Wills Branch	4,000	1000	83%
2297	Craig Creek	3,000	2550	17%
2316	Williamson Creek	2,400	2300	5%
2324	Fishing Creek	1,300	1081	24%
2361	Deep Bottom Creek	2,200	1500	39%
2381	Cormorant Branch	1,500	811	63%
2203A	Lower Trout River	1,000	721	47%
2265B	Pottsburg Creek	800	1532	-183%

The restoration goal of the BMAP is to meet water quality standards which will be determined by the number of exceedances during an IWR verified period compared with the number of allowable exceedances based on the number of samples. The far right column (Percent Exceedance) shows the percentage of exceedances, which is calculated by dividing the number of exceedances by the total number of samples. This is a helpful reference for comparing various data periods which may have differing number of total samples.

All Lower St. Johns Tributaries BMAP II waterbodies would remain impaired for fecal coliform based on IWR assessment methodologies. **Table 4** indicates the waterbodies with the lowest exceedance percentages were Trout River (Lower Reach) and Pottsburg Creek which exceeded water quality standard of 400 CFU/100mL in less than 30% of the samples. Sherman Creek, Trout River (Middle Reach), Hopkins Creek, and Greenfield Creek (Freshwater Segment) exceeded the water quality standard of 400 CFU/100mL in less than 50% of the samples. Cormorant Branch, Fishing Creek, Moncrief Creek, Wills Branch (North Prong), and Blockhouse Creek exceeded the water quality standard of 400 CFU/100mL in less than 60% of the samples. McCoy Creek and Trout River (Middle Reach Marine Segment) water quality standard of 400 CFU/100mL in less than 70% of the samples. While Williamson Creek and Deep Bottom Creek exceeded the water quality standard of 400 CFU/100mL in 85% of the samples and Craig Creek exceeded the water quality standard of 400

CFU/100mL in 93% of the samples. Greenfield Creek Marine Segment did not have enough data to assess during the January 1, 2007 through June 30, 2014 assessment period because the WBID was split into fresh and marine segments for assessment purposes after the phase 1 monitoring plan was set. The TAT will work to ensure that enough data are gathered in this WBID during Phase 2. While the marine and freshwater divided WBIDs for Greenfield Creek (WBIDs 2240A and 2240B) are shown with their respective data, the data for the divided WBIDs in Moncrief Creek and Pottsburg Creek were not yet divided in the data run used for assessments.

TABLE 4: FECAL COLIFORM EXCEEDANCES BY TRIBUTARY

WBID	NAME	TOTAL NUMBER OF FECAL COLIFORM DATAPOINTS FOR JAN. 1, 2007-JUNE 30, 2014	NUMBER OF EXCEEDANCES	MINIMUM NUMBER OF EXCEEDANCES TO BE CONSIDERED IMPAIRED	PERCENT EXCEEDANCE
2203	Trout River (Middle Reach)	93	37	14	39.8%
2203B	Trout River (Middle Reach Marine Segment)	42	26	8	61.9%
2203A	Trout River (Lower Reach)	56	12	10	21.4%
2207	Blockhouse Creek	40	23	7	57.5%
2227	Sherman Creek	181	62	24	34.3%
2228	Moncrief Creek	206	118	27	57.3%
2240A	Greenfield Creek (Marine Segment)	3	2	*	*
2240B	Greenfield Creek (Freshwater Segment)	38	18	7	47.4%
2257	McCoy Creek	161	97	22	60.2%
2265B	Pottsburg Creek	67	19	11	28.4%
2266	Hopkins Creek	80	36	13	45.0%
2282	Wills Branch (North Prong)	75	43	12	57.3%
2297	Craig Creek	171	159	23	93.0%
2316	Williamson Creek	119	101	17	84.9%
2324	Fishing Creek	209	110	28	52.6%
2361	Deep Bottom Creek	81	69	13	85.2%
2381	Cormorant Branch	99	51	15	51.5%

1.5 WATER QUALITY TRENDS

Information on the locations of monitoring stations can be found by following the department's Geographic Information System (GIS) link and clicking "Map Direct." Then scroll to the right to find "Water Quality." Search for stations by name and zoom as needed. If you wish to download GIS shapefiles, GIS layers can be downloaded at this site as well. Click the link and scroll down. The "STORET Stations" layer corresponds with the stations used to provide data for the BMAP.

1.5.1 CRAIG CREEK

Fecal coliform concentrations in Craig Creek have decreased from 2010 through 2014 (see **Figure 2**). The median concentration and percent exceedances decreased from 2013 to 2014, as shown in **Table 5**. Station 21FLA 20030957, which is located along the first tributary south of Lorimer, had the highest median concentration of 5,400 CFU/100mL. The next highest concentration was found at Station 21FLA 20030793 (Hendricks Avenue) with a median concentration of 3,450 CFU/100mL.

TABLE 5: SUMMARY OF CRAIG CREEK FECAL COLIFORM DATA BY YEAR, 2010–14

YEAR	NUMBER	MINIMUM (#/100ML)	MAXIMUM (#/100ML)	MEDIAN (#/100ML)	MEAN (#/100ML)	NUMBER OF EXCEEDANCES	% EXCEEDANCES
2010	4	960	16,000	1,550	5,015	4	100%
2011	64	90	64,000	2,650	5,427	59	92%
2012	26	430	13,000	2,350	3,446	26	100%
2013	30	230	7,900	2,950	3,061	29	97%
2014	28	1	8,800	2,100	2,296	26	93%

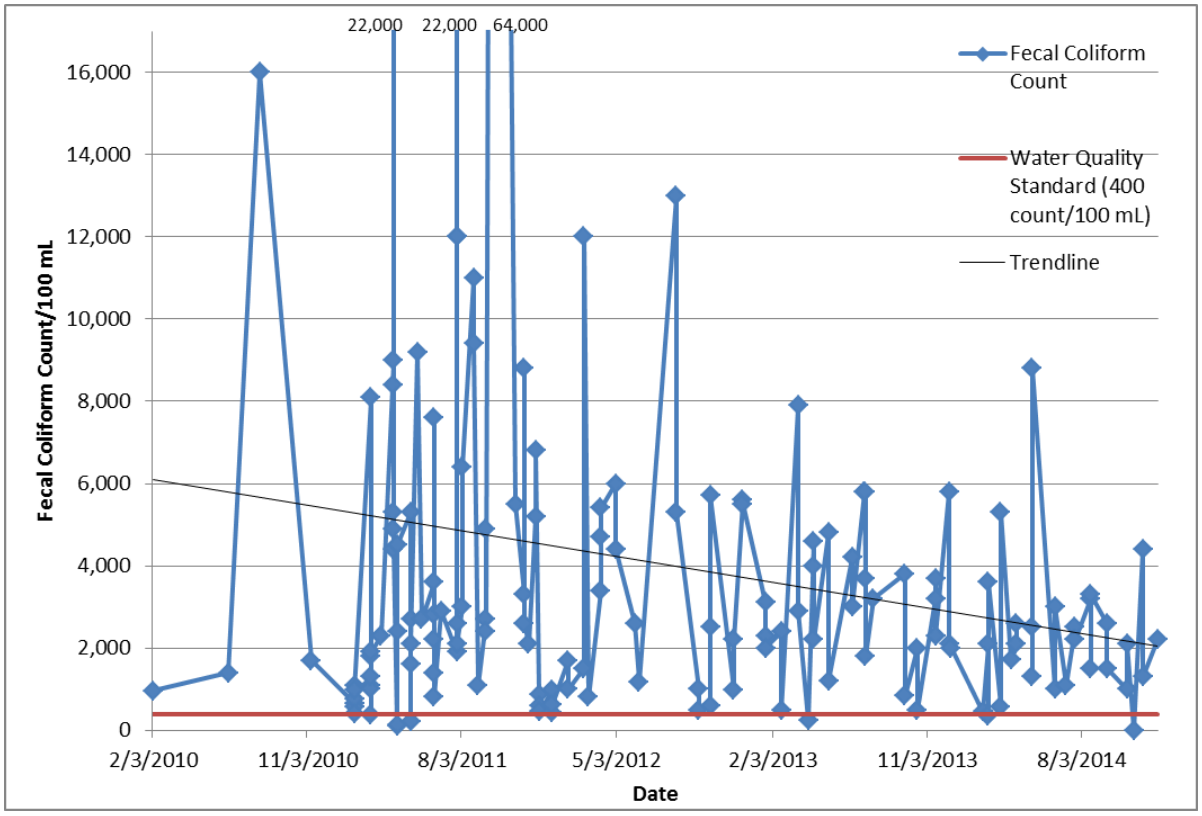

FIGURE 2: FECAL COLIFORM TRENDS IN CRAIG CREEK, 2010–14

In reference to water quality standards, the waterbodies are assessed based on the number of exceedances over 400 CFU/100mL. Based on the number of samples taken in a given data period, a limited number of exceedances is allowed before the waterbody is considered impaired. While the charts showing the trends over time are helpful to see how the coliform levels are changing, from a compliance standpoint, the number of exceedances is the primary consideration. The chart below in **Figure 3** shows the cumulative percentage of the fecal coliform results in Craig Creek and how they compare with the standard of 400 CFU/100mL. When the water quality standard is being met, all or most of the results will be to the left of the 400 count line, meaning that most of the samples were at or below the water quality standard.

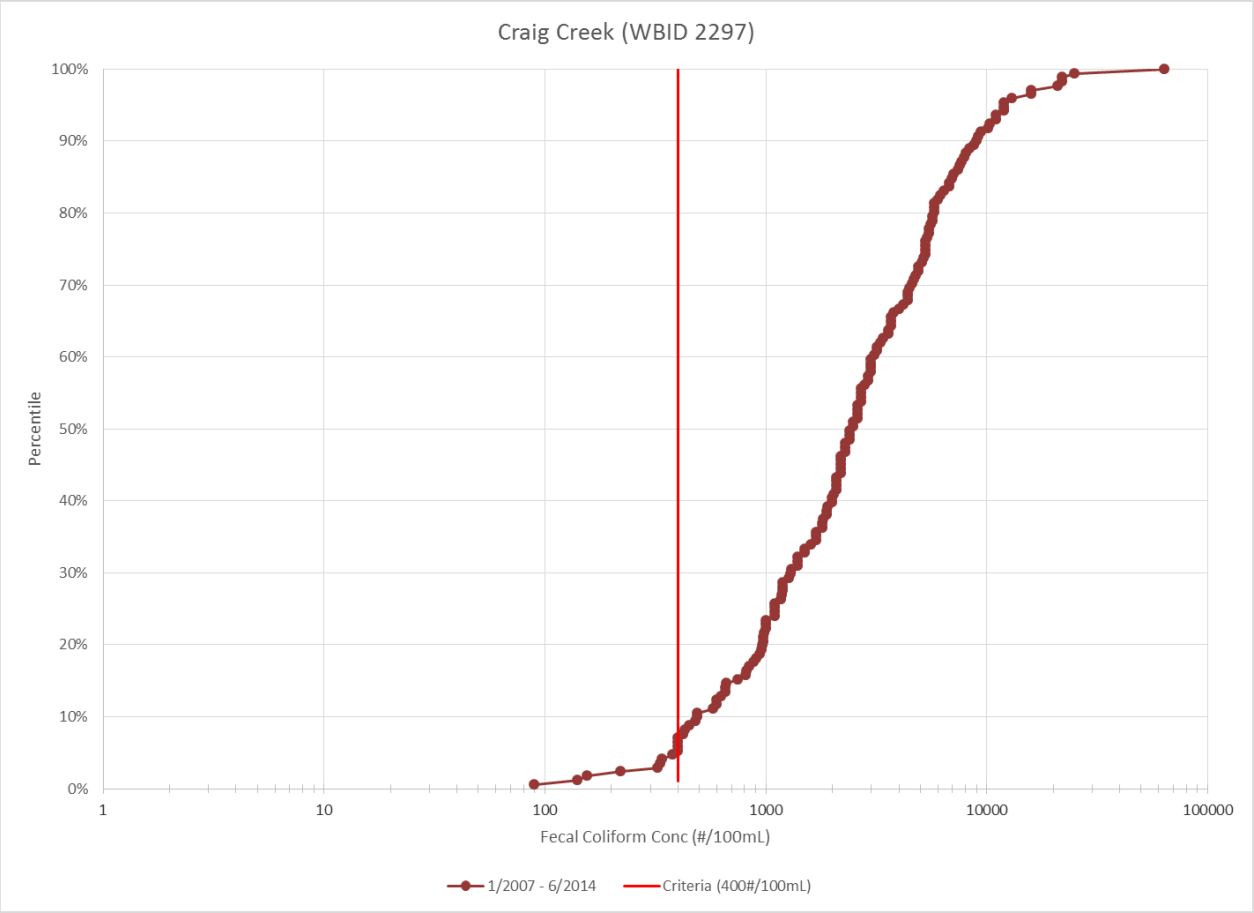

FIGURE 3: CUMULATIVE FREQUENCY OF FECAL COLIFORM RESULTS IN CRAIG CREEK COMPARED TO THE WATER QUALITY STANDARD

1.5.2 McCoy Creek

Overall, there has been a slight increase in fecal coliform concentrations in the McCoy Creek watershed for the period from 2010 to 2014 (see **Figure 4**). There was an increase in the median concentration and percent exceedances from 2013 to 2014 (see **Table 6**). The station with the highest median fecal coliform concentration is 21FLJEAMCS2, which had a median concentration of 1,050 CFU/100mL, and is located at Dellwood Avenue and Myra Street.

TABLE 6: SUMMARY OF MCCOY CREEK FECAL COLIFORM DATA BY YEAR, 2010–14

YEAR	NUMBER	MINIMUM (#/100ML)	MAXIMUM (#/100ML)	MEDIAN (#/100ML)	MEAN (#/100ML)	NUMBER OF EXCEEDANCES	% EXCEEDANCES
2010	4	0	5,000	400	1,450	2	50%
2011	48	0	5,900	870	1,353	35	73%
2012	42	90	11,300	1,100	2,496	32	76%
2013	38	33	80,000	295	2,643	16	42%
2014	40	17	13,000	910	2,546	28	70%

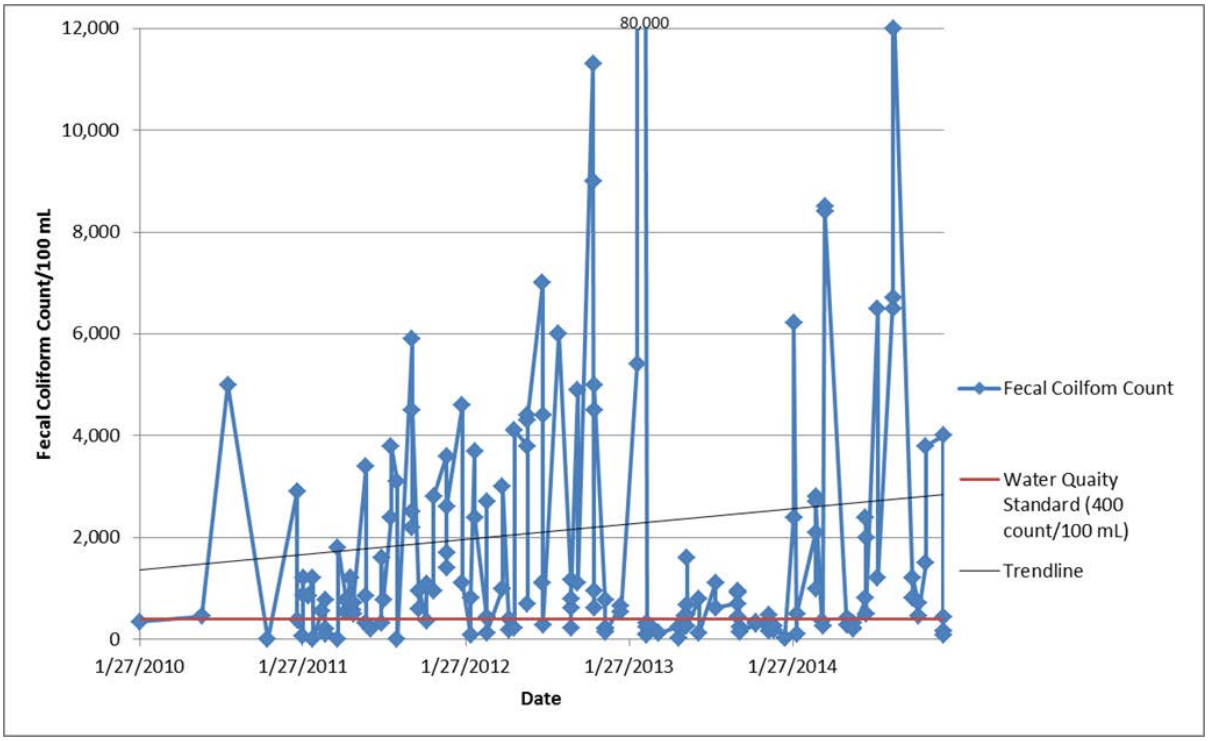

FIGURE 4: FECAL COLIFORM TRENDS IN MCCOY CREEK, 2010–14

In reference to water quality standards, the waterbodies are assessed based on the number of exceedances over 400 CFU/100mL. Based on the number of samples taken in a given data period, a limited number of exceedances is allowed before the waterbody is considered impaired. While the charts showing the trends over time are helpful to see how the coliform levels are changing, from a compliance standpoint, the number of exceedances is the primary consideration. The chart below in **Figure 5** shows the cumulative percentage of the fecal coliform results in McCoy Creek and how they compare with the standard of 400 CFU/100mL. When the water quality standard is being met, all or most of the results will be to the left of the 400 count line, meaning that most of the samples were at or below the water quality standard.

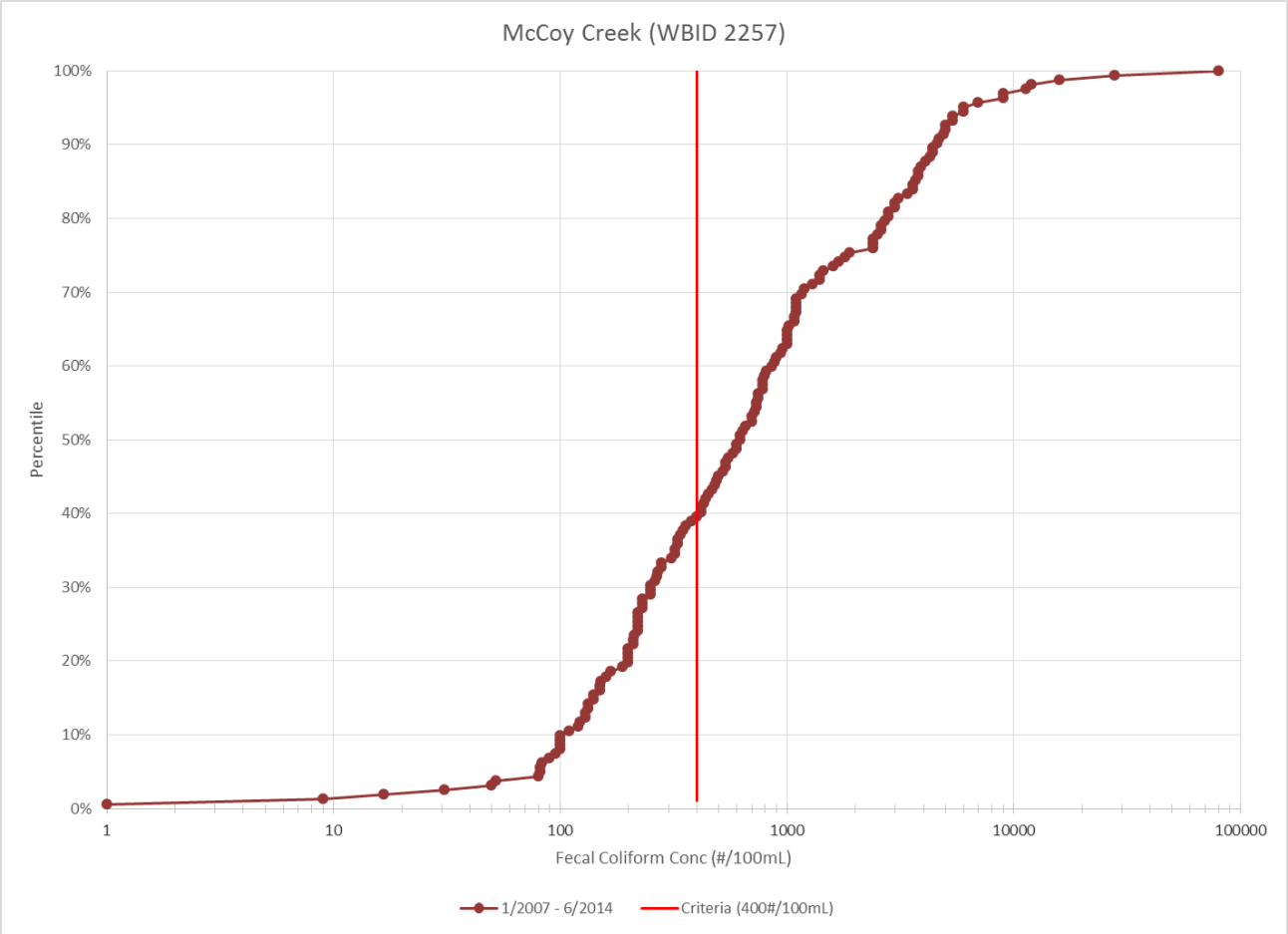

FIGURE 5: CUMULATIVE FREQUENCY OF FECAL COLIFORM RESULTS IN MCCOY CREEK COMPARED WITH THE WATER QUALITY STANDARD

1.5.3 WILLIAMSON CREEK

There was a slight decrease in fecal coliform concentrations in Williamson Creek over the period from 2010 to 2014 (see **Figure 6**). The median fecal coliform results and percent exceedances decreased since 2012 (see **Table 7**). Stations 21FLJEAWCS2 and 21FLJEAWCS1 had the highest median values of 2,900 and 2,500 CFU/100mL, respectively. Station 21FLJEAWCS2 is located south of Wilson Boulevard and East of Lane Avenue, and Station 21FLJEAWCS1 is located at Wilson Boulevard.

TABLE 7: SUMMARY OF WILLIAMSON CREEK FECAL COLIFORM DATA BY YEAR, 2010–14

YEAR	NUMBER	MINIMUM (#/100ML)	MAXIMUM (#/100ML)	MEDIAN (#/100ML)	MEAN (#/100ML)	NUMBER OF EXCEEDANCES	% EXCEEDANCES
2010	4	320	790	585	570	2	50%
2011	56	240	14,000	2,250	3,246	54	96%
2012	39	17	24,800	3,100	4,267	37	95%
2013	34	180	24,000	1,150	2,582	29	85%
2014	36	27	8,500	1,566	2,524	31	86%

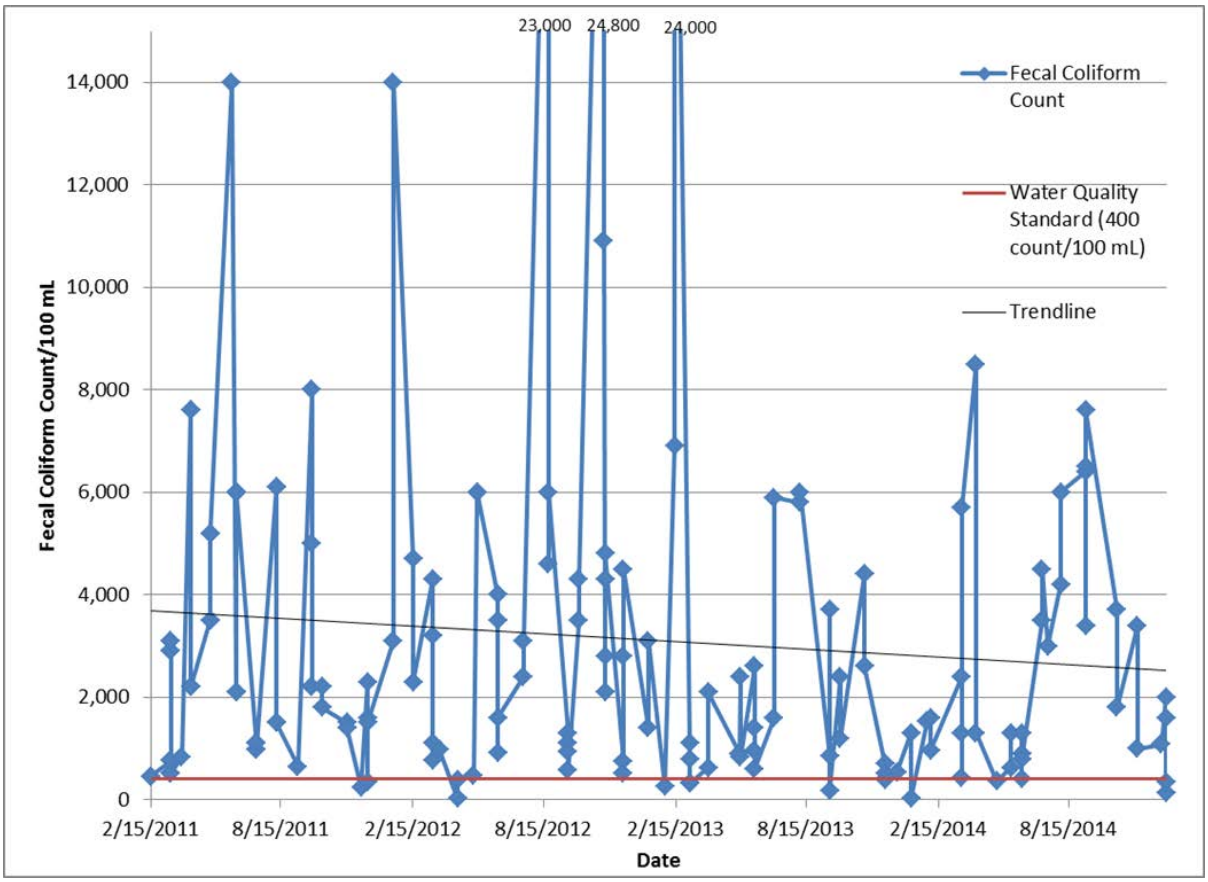

FIGURE 6: FECAL COLIFORM TRENDS IN WILLIAMSON CREEK, 2010–14

In reference to water quality standards, the waterbodies are assessed based on the number of exceedances over 400 CFU/100mL. Based on the number of samples taken in a given data period, a limited number of exceedances is allowed before the waterbody is considered impaired. While the charts showing the trends over time are helpful to see how the coliform levels are changing, from a compliance standpoint, the number of exceedances is the primary consideration. The chart below in **Figure 7** shows the cumulative percentage of the fecal coliform results in Willisamson Creek and how they compare with the standard of 400 CFU/100mL. When the water quality standard is being met, all or most of the results will be to the left of the 400 count line, meaning that most of the samples were at or below the water quality standard.

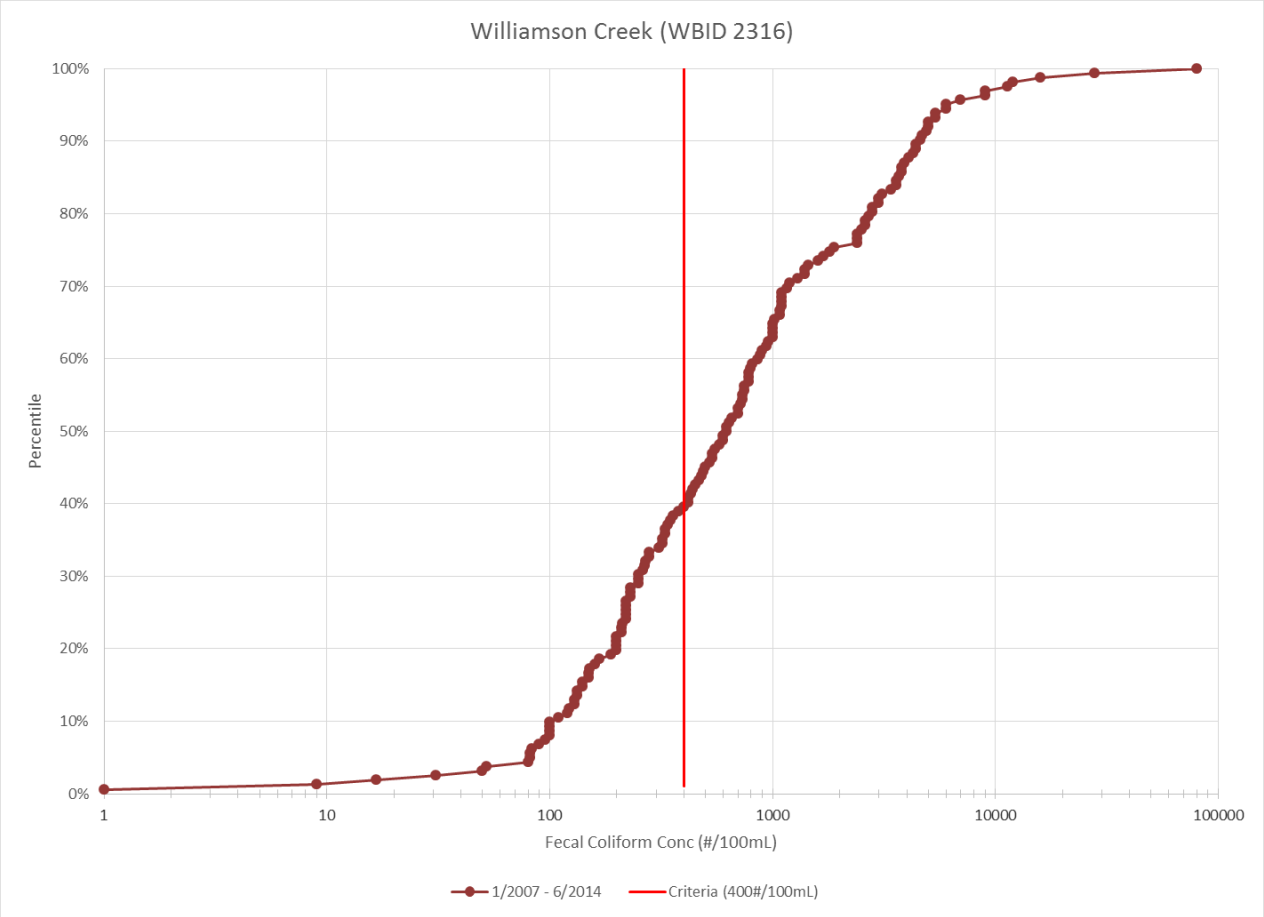

FIGURE 7: CUMULATIVE FREQUENCY OF FECAL COLIFORM RESULTS IN WILLIAMSON CREEK COMPARED WITH THE WATER QUALITY STANDARD

1.5.4 FISHING CREEK

Fecal coliform results over the period of 2010 to 2014 in Fishing Creek have increased slightly (see **Figure 8**). However, the median values are all below 500 CFU/100mL during this period (see **Table 8**). The highest median of 1,081 CFU/100mL was at Station 21FLJXWQOR8, which is located at Fishing Creek and West 118th Street.

TABLE 8: SUMMARY OF FISHING CREEK FECAL COLIFORM DATA BY YEAR, 2010–14

YEAR	NUMBER	MINIMUM (#/100ML)	MAXIMUM (#/100ML)	MEDIAN (#/100ML)	MEAN (#/100ML)	NUMBER OF EXCEEDANCES	% EXCEEDANCES
2010	16	27	12,000	400	2,465	8	50%
2011	61	0	9,500	480	979	36	59%
2012	55	0	41,000	300	2,192	39	71%
2013	58	1	8,919	496	1,175	34	59%
2014	63	1	30,000	450	1,968	33	52%

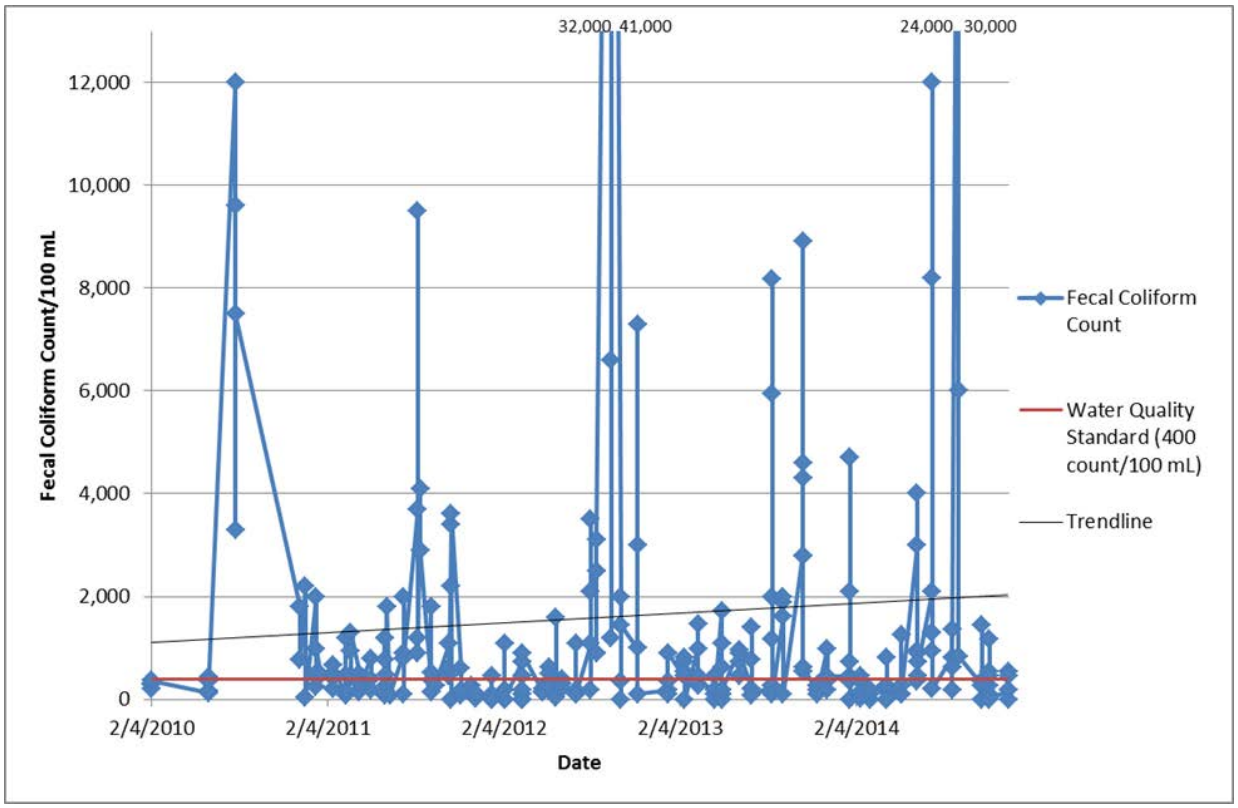

FIGURE 8: FECAL COLIFORM TRENDS IN FISHING CREEK, 2010–14

In reference to water quality standards, the waterbodies are assessed based on the number of exceedances over 400 CFU/100mL. Based on the number of samples taken in a given data period, a limited number of exceedances is allowed before the waterbody is considered impaired. While the charts showing the trends over time are helpful to see how the coliform levels are changing, from a compliance standpoint, the number of exceedances is the primary consideration. The chart below in **Figure 9** shows the cumulative percentage of the fecal coliform results in Fishing Creek and how they compare with the standard of 400 results/100mL. When the water quality standard is being met, all or most of the results will be to the left of the 400 count line, meaning that most of the samples were at or below the water quality standard.

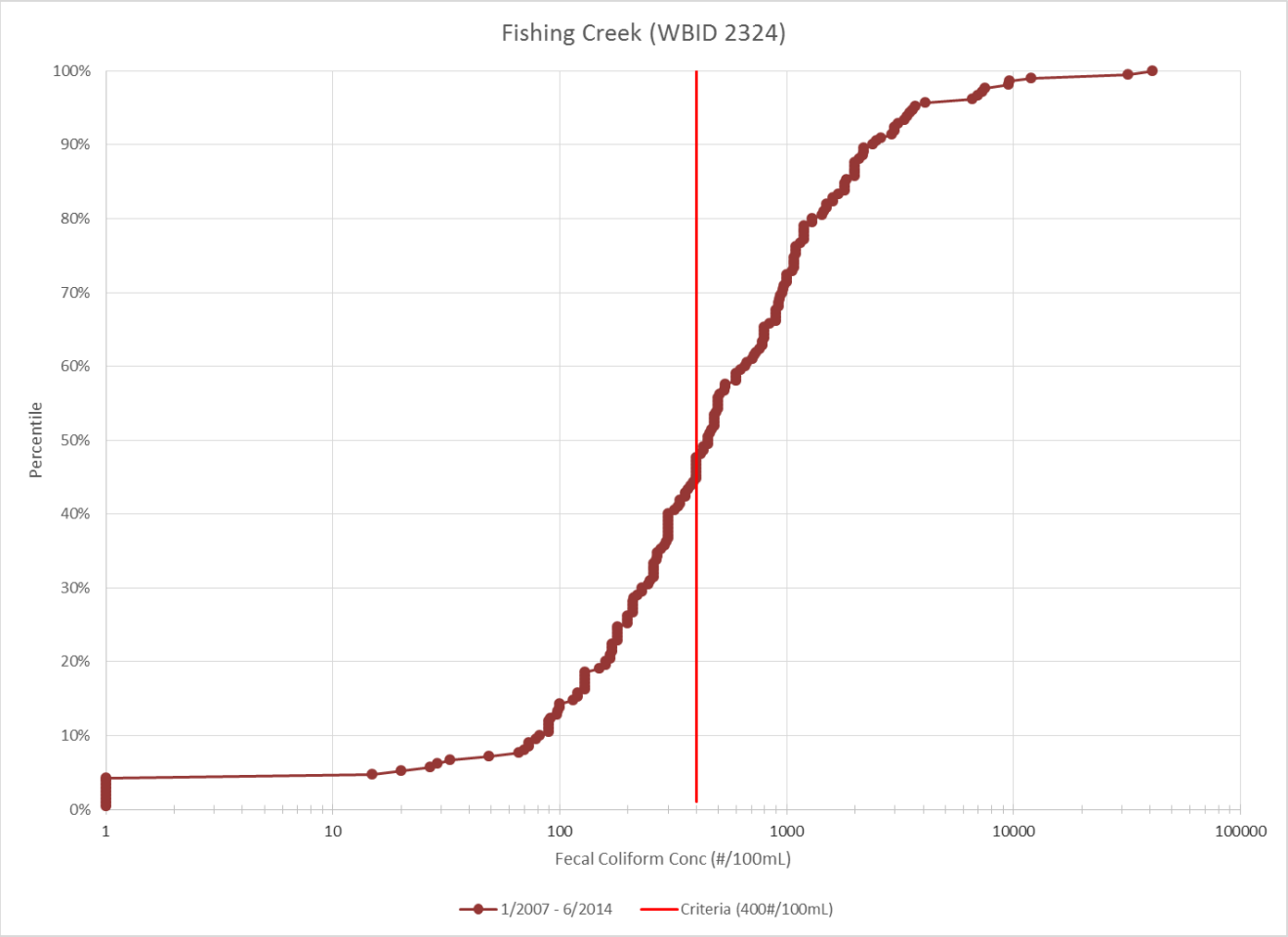

FIGURE 9: CUMULATIVE FREQUENCY OF FECAL COLIFORM RESULTS IN FISHING CREEK COMPARED WITH THE WATER QUALITY STANDARD

1.5.5 DEEP BOTTOM CREEK

Fecal coliform concentrations in Deep Bottom Creek have increased over the period of 2010 to 2014 (see **Figure 10**). There was a decrease in the median value and percent exceedances from 2013 to 2014 (see **Table 9**). Station 21FLJXWQDBHARTW had the highest median count of 2,200 CFU/100mL.

TABLE 9: SUMMARY OF DEEP BOTTOM CREEK FECAL COLIFORM DATA BY YEAR, 2010–14

YEAR	NUMBER	MINIMUM (#/100ML)	MAXIMUM (#/100ML)	MEDIAN (#/100ML)	MEAN (#/100ML)	NUMBER OF EXCEEDANCES	% EXCEEDANCES
2010	4	220	1,100	695	678	3	75%
2011	30	20	3,800	1,351	1,376	27	90%
2012	22	17	21,000	800	2,066	16	73%
2013	36	1	27,000	1,757	2,798	28	78%
2014	36	90	11,622	885	1,909	26	72%

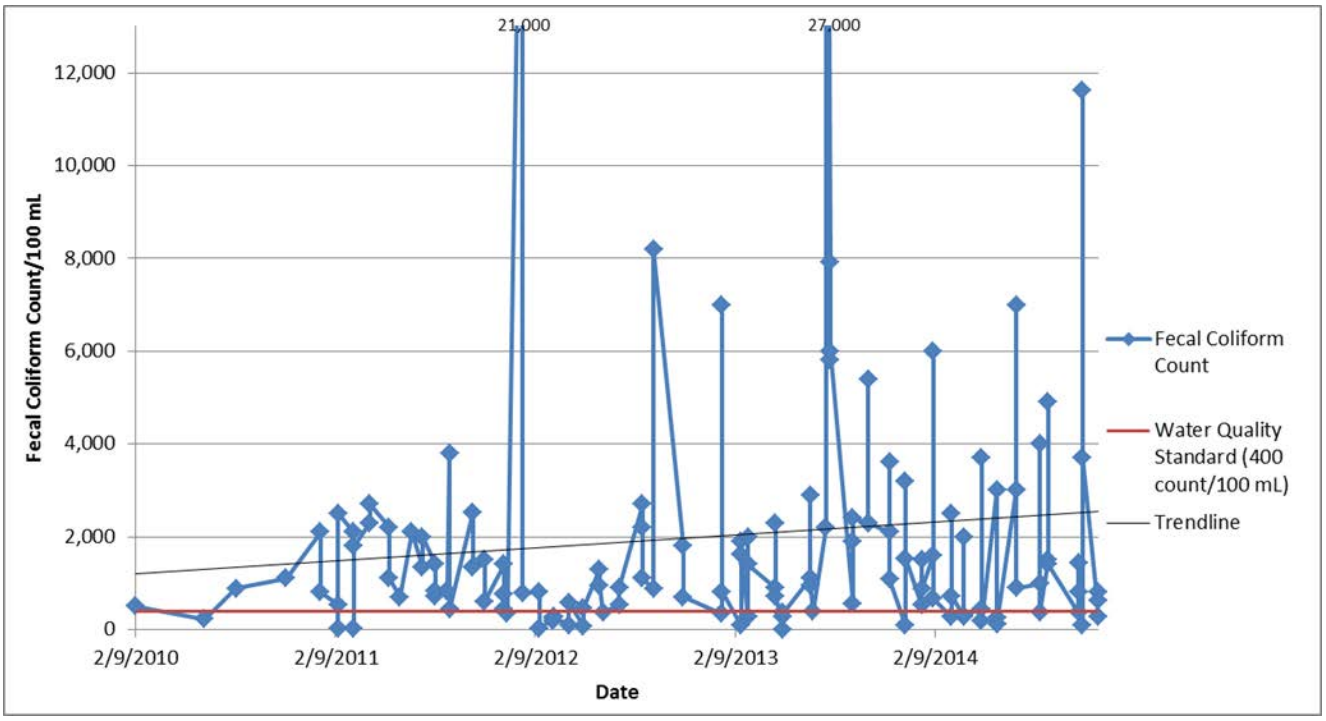

FIGURE 10: FECAL COLIFORM TRENDS IN DEEP BOTTOM CREEK, 2010–14

In reference to water quality standards, the waterbodies are assessed based on the number of exceedances over 400 CFU/100mL. Based on the number of samples taken in a given data period, a limited number of exceedances is allowed before the waterbody is considered impaired. While the charts showing the trends over time are helpful to see how the coliform levels are changing, from a compliance standpoint, the number of exceedances is the primary consideration. The chart below in **Figure 11** shows the cumulative percentage of the fecal coliform results in Deep Bottom Creek and how they compare with the standard of 400 CFU/100mL. When the water quality standard is being met, all or most of the results will be to the left of the 400 count line, meaning that most of the samples were at or below the water quality standard.

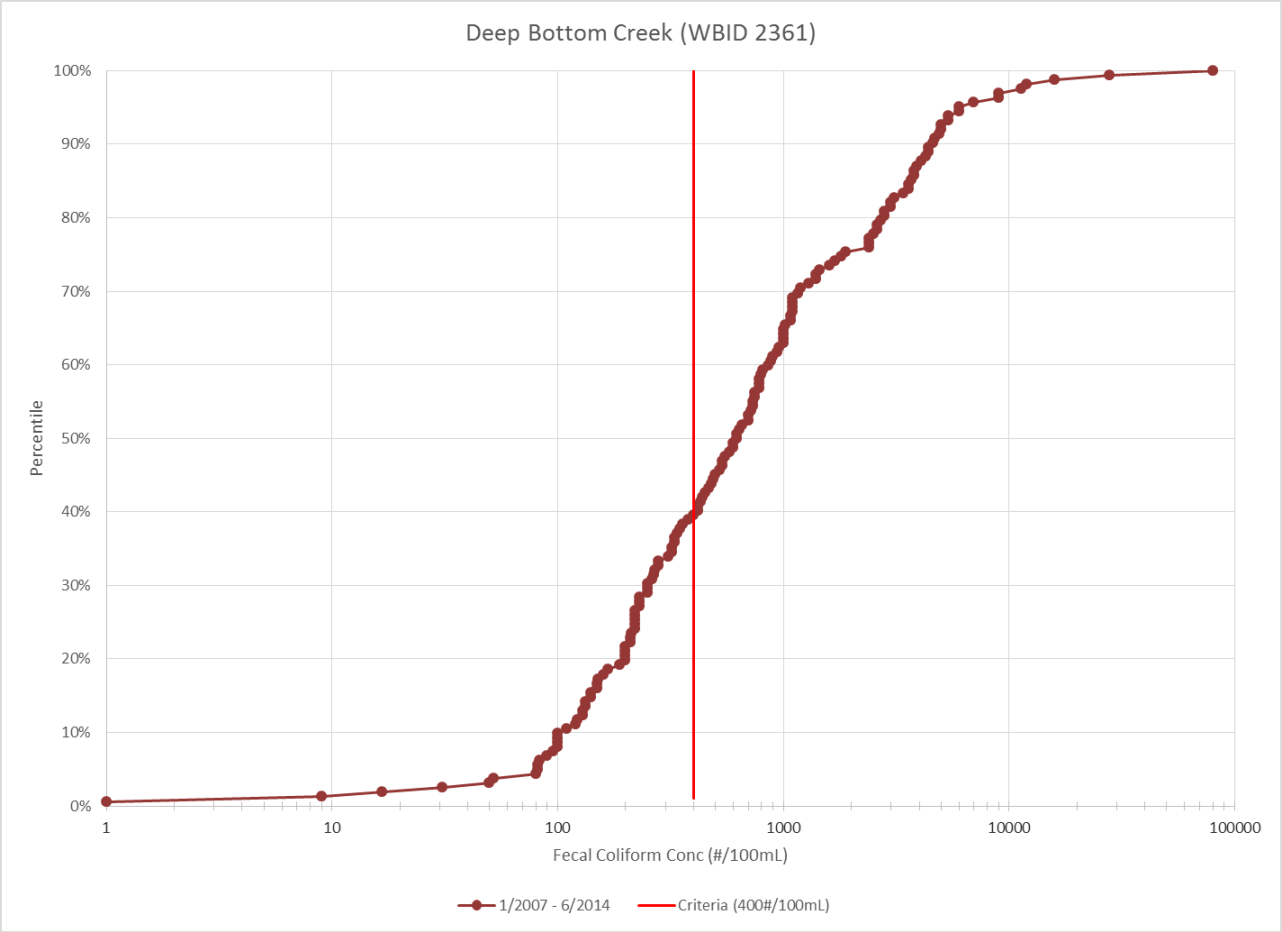

FIGURE 11: CUMULATIVE FREQUENCY OF FECAL COLIFORM RESULTS IN DEEP BOTTOM CREEK COMPARED WITH THE WATER QUALITY STANDARD

1.5.6 MONCRIEF CREEK

As Moncrief Creek is newly divided into freshwater (WBID 2228B) and marine (WBID 2228A) sections, the trends and assessment data are considered separately for each WBID. Overall, the fecal coliform concentrations in the freshwater WBID 2228B have increased slightly, while in the marine WBID 2228A, they show a decreasing trend. Both the freshwater and marine section data and trends are shown in **Figure 12**. The median results for the freshwater section are shown in **Table 10**. When more data are available, the number of exceedances will be charted separately for the marine and freshwater sections of Moncrief Creek.

TABLE 10: SUMMARY OF MONCRIEF CREEK FRESHWATER SECTION FECAL COLIFORM DATA BY YEAR, 2010–14

YEAR	NUMBER	MINIMUM (#/100ML)	MAXIMUM (#/100ML)	MEDIAN (#/100ML)	MEAN (#/100ML)	NUMBER OF EXCEEDANCES	% EXCEEDANCES
2010	8	16	21,000	145	2,738	1	13%
2011	59	0	20,000	580	1,419	35	59%
2012	33	0	9,000	710	1,477	22	67%
2013	6	1	3,400	207	756	2	33%
2014	41	1	20,000	810	2,122	31	76%

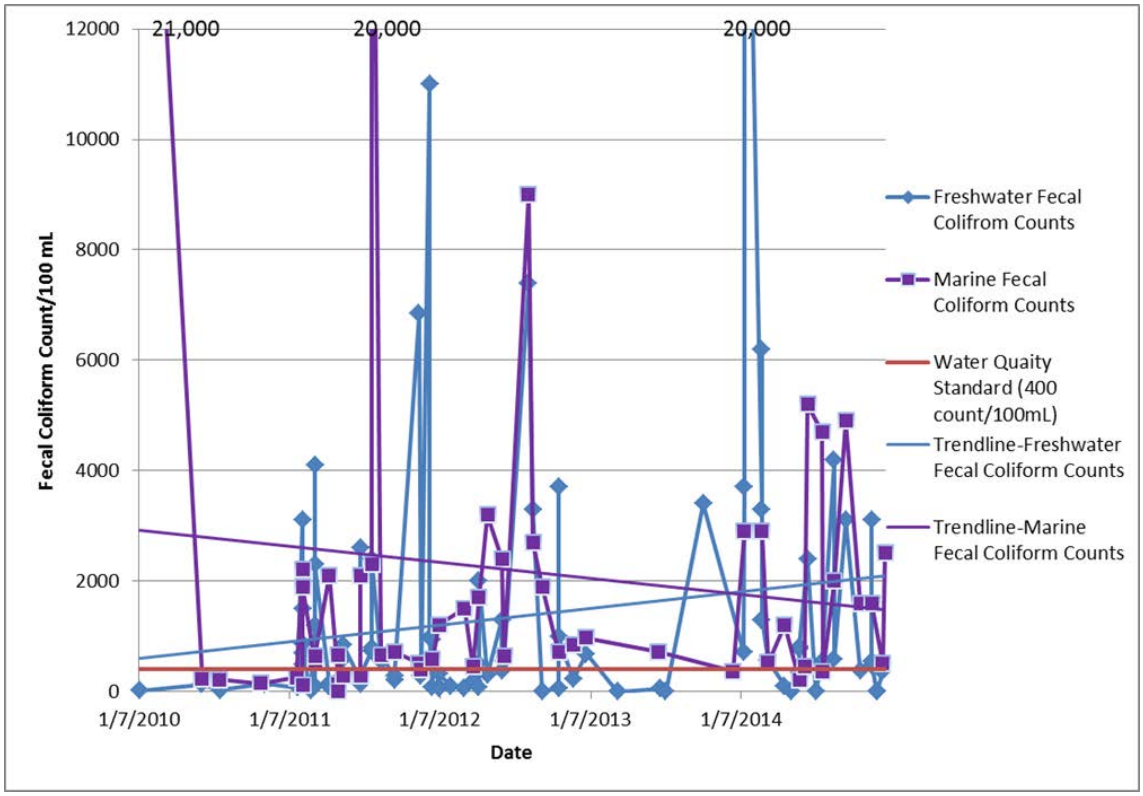

FIGURE 12: FECAL COLIFORM TRENDS IN MONCRIEF CREEK, 2010–14

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In reference to water quality standards, the waterbodies are assessed based on the number of exceedances over 400 CFU/100mL. Based on the number of samples taken in a given data period, a limited number of exceedances is allowed before the waterbody is considered impaired. While the charts showing the trends over time are helpful to see how the coliform levels are changing, from a compliance standpoint, the number of exceedances is the primary consideration). The chart below in **Figure 13** shows the cumulative percentage of the fecal coliform results in freshwater section of Moncrief Creek and how they compare with the standard of 400 CFU/100mL. When the water quality standard is being met, all or most of the results will be to the left of the 400 count line, meaning that most of the samples were at or below the water quality standard.

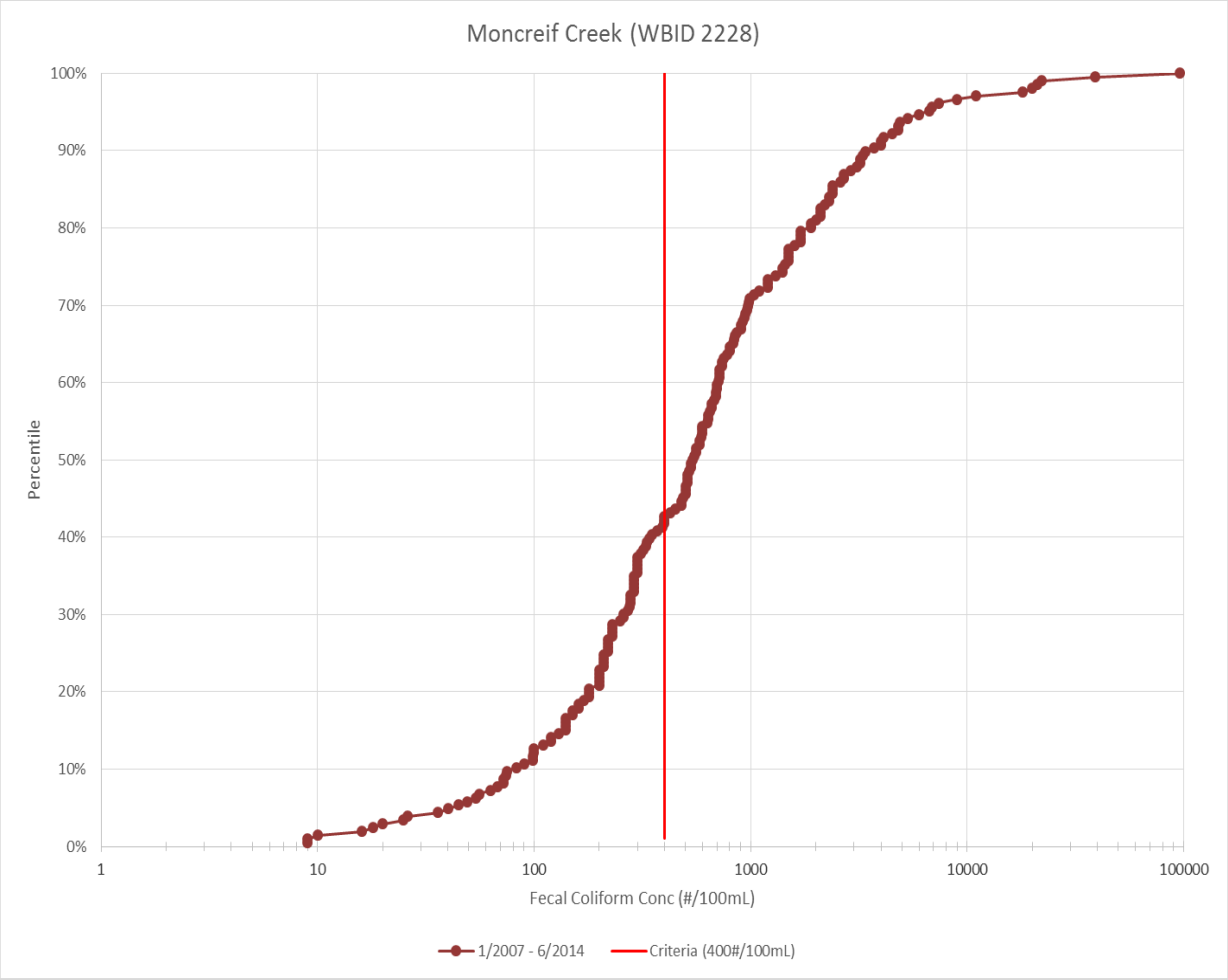

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FIGURE 13: CUMULATIVE FREQUENCY OF FECAL COLIFORM RESULTS IN MONCRIEF CREEK COMPARED WITH THE WATER QUALITY STANDARD

1.5.7 BLOCKHOUSE CREEK

Fecal coliform concentrations in Blockhouse Creek from 2010 to 2014 do not show a significant trend (see **Figure 14**). However, there was an increase in the median values from 2013 to 2014 (see **Table 11**.). All of the data for this watershed are from Station 21FLJXWQTR37, and this station had a median count of 906 CFU/100mL.

TABLE 11: SUMMARY OF BLOCKHOUSE CREEK FECAL COLIFORM DATA BY YEAR, 2010–14

YEAR	NUMBER	MINIMUM (#/100mL)	MAXIMUM (#/100mL)	MEDIAN (#/100mL)	MEAN (#/100mL)	NUMBER OF EXCEEDANCES	% EXCEEDANCES
2010	4	300	2,100	1,540	1,370	3	75%
2011	4	270	1,081	655	665	2	50%
2012	3	631	13,000	4,600	6,077	3	100%
2013	3	90	631	541	421	2	67%
2014	4	721	1,622	1,126	1,149	4	100%

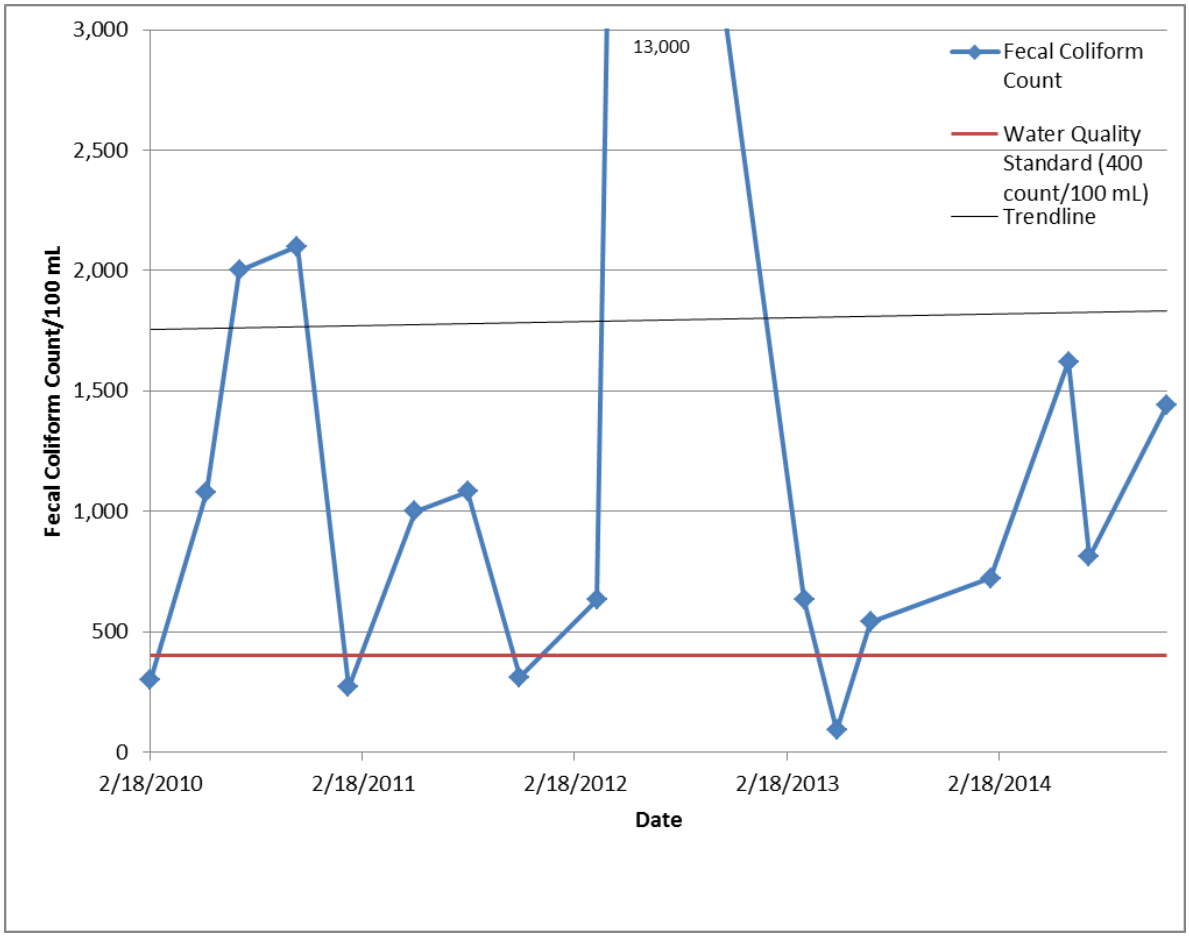

FIGURE 14: FECAL COLIFORM TRENDS IN BLOCKHOUSE CREEK, 2010–14

In reference to water quality standards, the waterbodies are assessed based on the number of exceedances over 400 CFU/100mL. Based on the number of samples taken in a given data period, a limited number of exceedances is allowed before the waterbody is considered impaired. While the charts showing the trends over time are helpful to see how the coliform levels are changing, from a compliance standpoint, the number of exceedances is the primary consideration. **Figure 15** shows the cumulative percentage of the fecal coliform results in Blockhouse Creek and how they compare with the standard of 400 CFU/100mL. When the water quality standard is being met, all or most of the results will be to the left of the 400 count line, meaning that most of the samples were at or below the water quality standard.

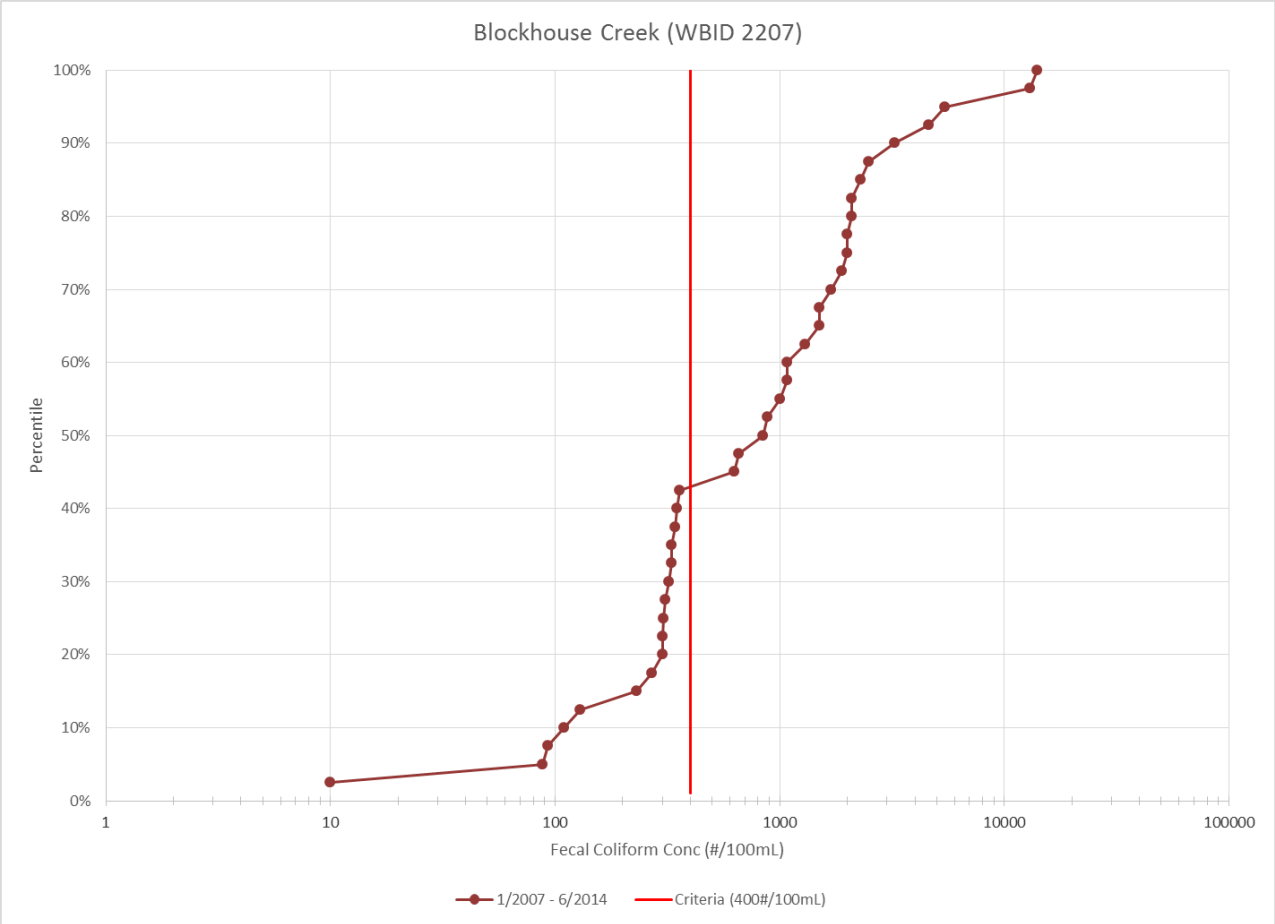

FIGURE 15: CUMULATIVE FREQUENCY OF FECAL COLIFORM RESULTS IN BLOCKHOUSE CREEK COMPARED WITH THE WATER QUALITY STANDARD

1.5.8 HOPKINS CREEK

There has been an increase in fecal coliform concentrations in the Hopkins Creek watershed from 2010 to 2014 (see **Figure 16**). However, the median results decreased from 2012 to 2014 (see **Table 12**). Station 21FLCOJB SW-BT03 had the highest median count of 1,500 CFU/100mL. This station is located at the southeastern branch at 20th Avenue North.

TABLE 12: SUMMARY OF HOPKINS CREEK FECAL COLIFORM DATA BY YEAR, 2010–14

YEAR	NUMBER	MINIMUM (#/100ML)	MAXIMUM (#/100ML)	MEDIAN (#/100ML)	MEAN (#/100ML)	NUMBER OF EXCEEDANCES	% EXCEEDANCES
2010	11	0	2,600	640	772	7	64%
2011	56	0	5,500	640	1,200	36	64%
2012	37	0	5,500	1,400	1,756	24	65%
2013	60	1	50,000	976	2,927	47	78%
2014	60	1	66,000	856	2,145	38	63%

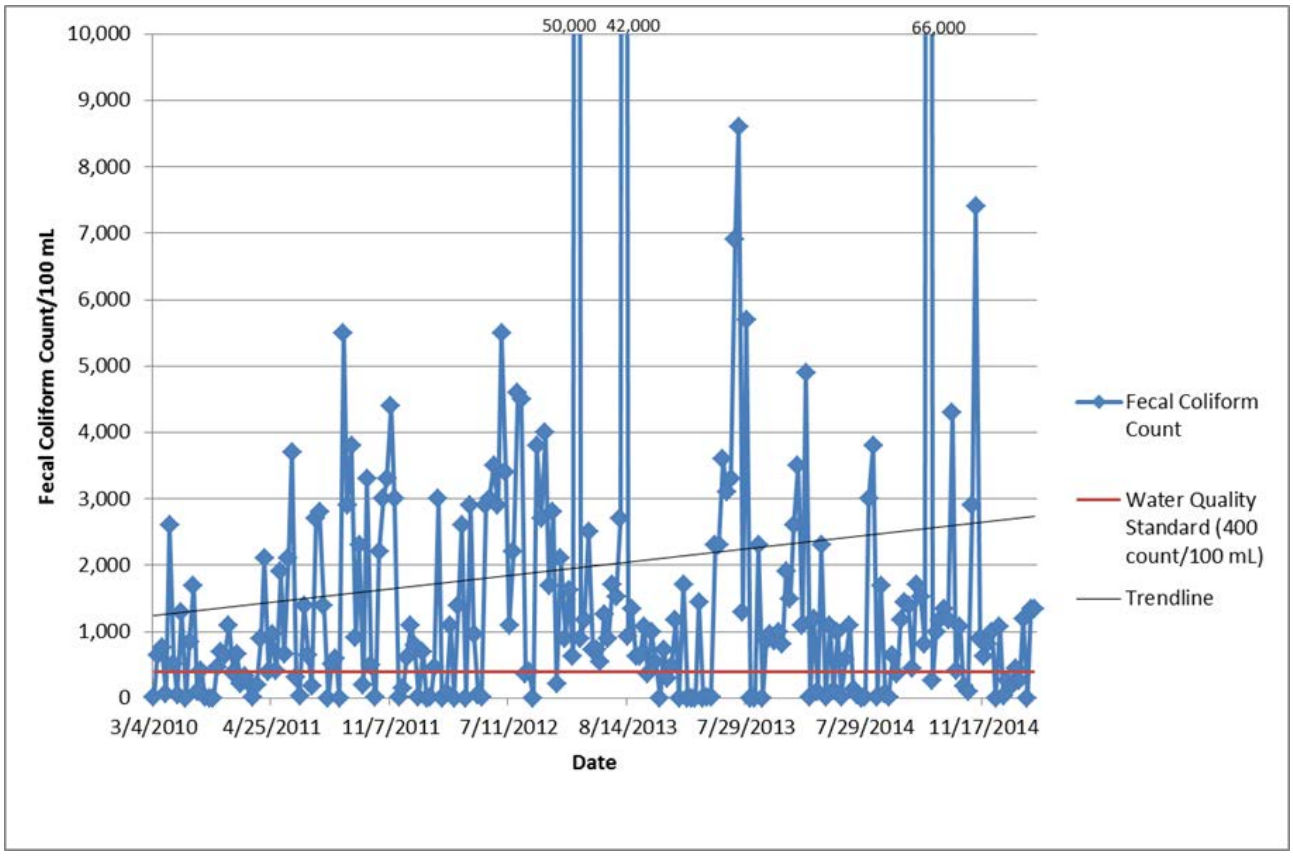

FIGURE 16: FECAL COLIFORM TRENDS IN HOPKINS CREEK, 2010–14

In reference to water quality standards, the waterbodies are assessed based on the number of exceedances over 400 CFU/100mL. Based on the number of samples taken in a given data period, a limited number of exceedances is allowed before the waterbody is considered impaired. While the charts showing the trends over time are helpful to see how the coliform levels are changing, from a compliance standpoint, the number of exceedances is the primary consideration. The chart below in **Figure 17** shows the cumulative percentage of the fecal coliform results in Hopkins Creek and how they compare with the standard of 400 CFU/100mL. When the water quality standard is being met, all or most of the results will be to the left of the 400 count line, meaning that most of the samples were at or below the water quality standard.

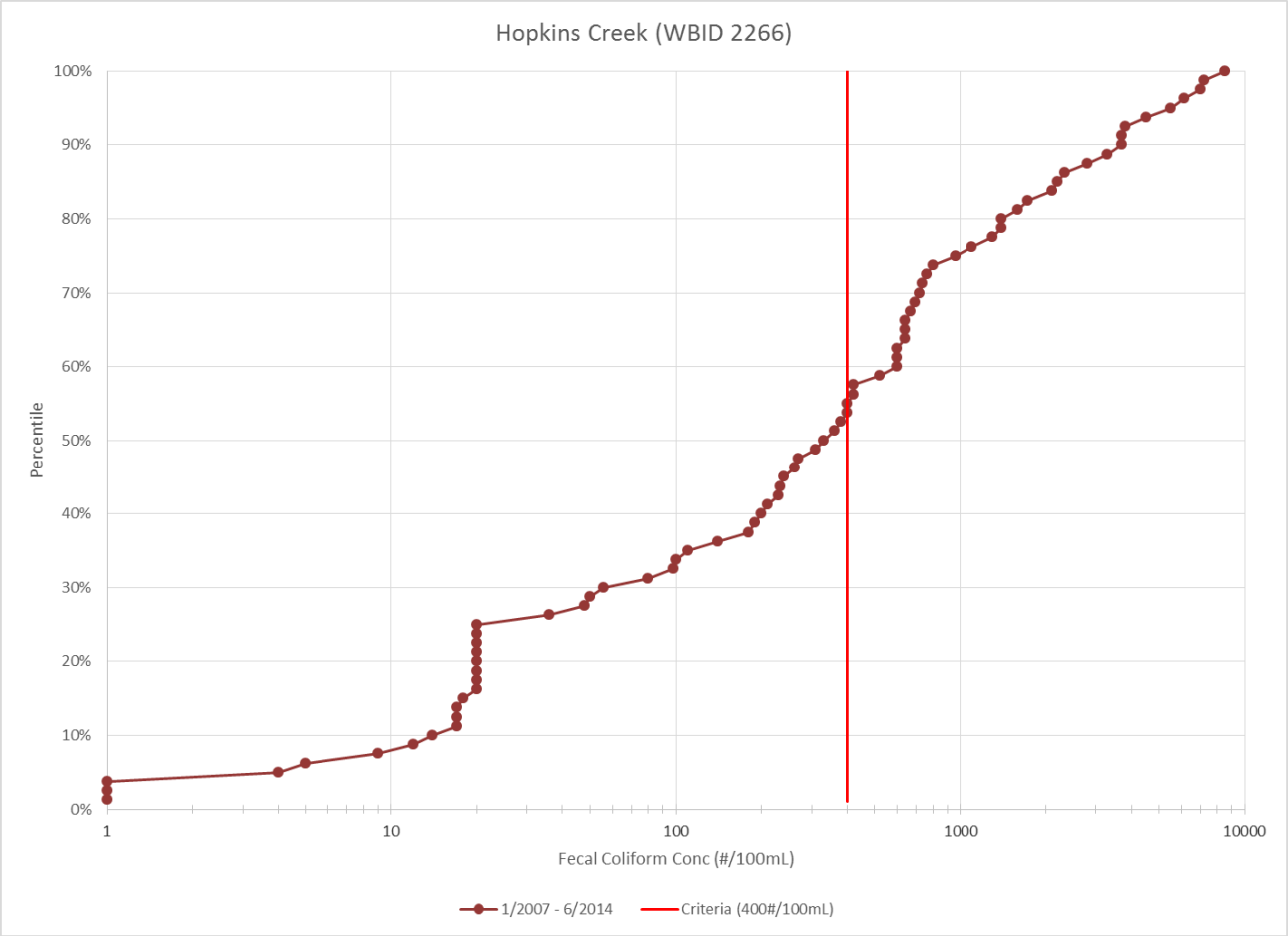

FIGURE 17: CUMULATIVE FREQUENCY OF FECAL COLIFORM RESULTS IN HOPKINS CREEK COMPARED WITH THE WATER QUALITY STANDARD

1.5.9 CORMORANT BRANCH

There was an increase in the fecal coliform results in the Cormorant Branch watershed from 2010 to 2014 (see **Figure 18**). The highest median count of 1,850 CFU/100mL occurred in 2010, with the rest of the years having median values below 600 CFU (see **Table 13**). All of the stations in this watershed had low medians, below 650 CFU/100mL.

TABLE 13: SUMMARY OF CORMORANT BRANCH FECAL COLIFORM DATA BY YEAR, 2010–14

YEAR	NUMBER	MINIMUM (#/100ML)	MAXIMUM (#/100ML)	MEDIAN (#/100ML)	MEAN (#/100ML)	NUMBER OF EXCEEDANCES	% EXCEEDANCES
2010	4	330	2,100	1,850	1,533	3	75%
2011	15	56	1,622	380	491	7	47%
2012	31	0	2,400	270	471	9	29%
2013	32	1	2,800	571	707	22	69%
2014	36	1	8,468	375	963	18	50%

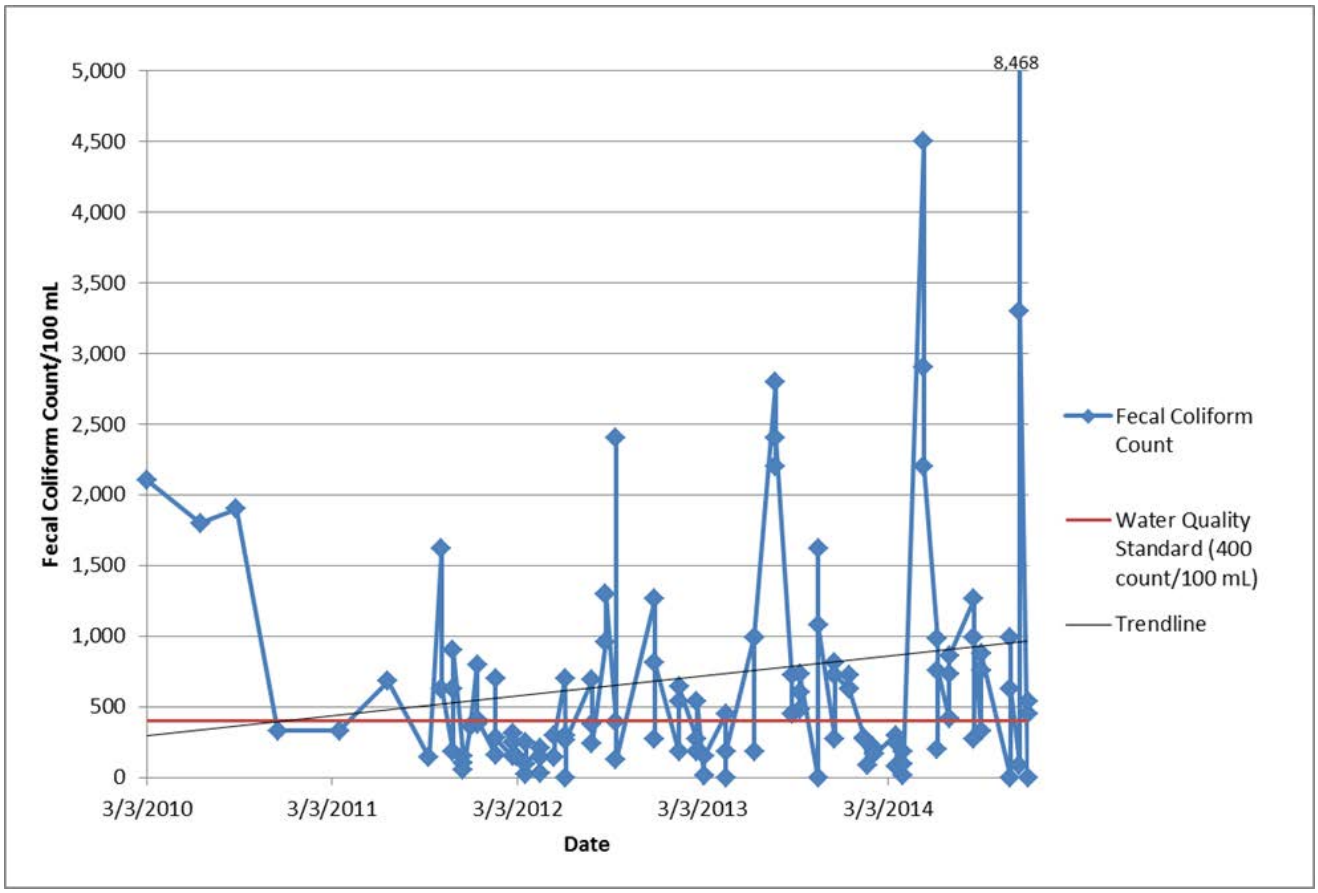

FIGURE 18: FECAL COLIFORM TRENDS IN CORMORANT BRANCH, 2010–14

In reference to water quality standards, the waterbodies are assessed based on the number of exceedances over 400 CFU/100mL. Based on the number of samples taken in a given data period, a limited number of exceedances is allowed before the waterbody is considered impaired. While the charts showing the trends over time are helpful to see how the coliform levels are changing, from a compliance standpoint, the number of exceedances is the primary consideration. The chart below in **Figure 19** shows the cumulative percentage of the fecal coliform results in Cormorant Creek and how they compare with the standard of 400 CFU/100mL. When the water quality standard is being met, all or most of the results will be to the left of the 400 count line, meaning that most of the samples were at or below the water quality standard.

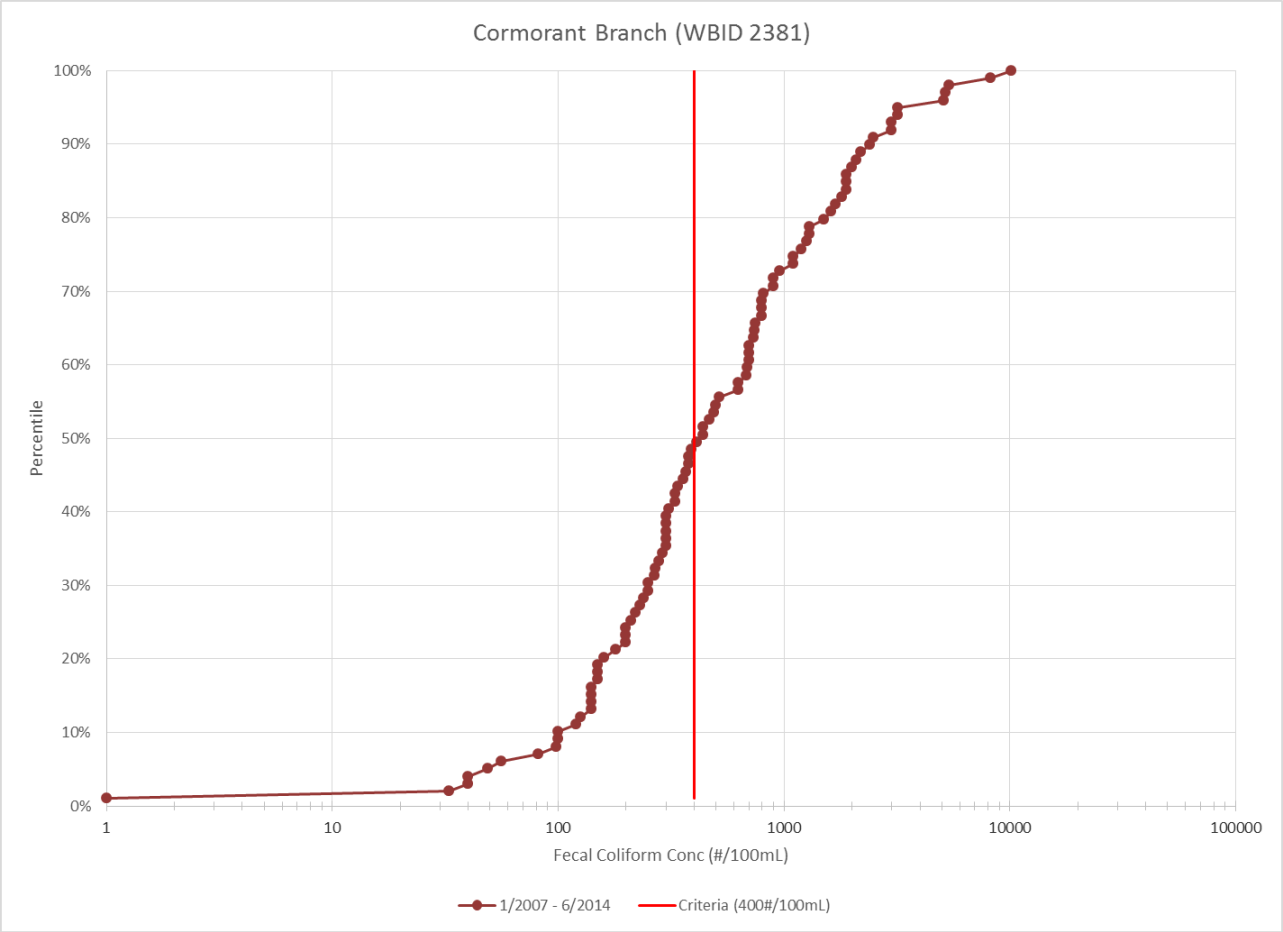

FIGURE 19: CUMULATIVE FREQUENCY OF FECAL COLIFORM RESULTS IN CORMORANT BRANCH COMPARED WITH THE WATER QUALITY STANDARD

1.5.10 WILLS BRANCH

For the period from 2010 to 2014, the fecal coliform concentrations have increased in the Wills Branch watershed (see **Figure 20**). The median values were all below 1,000 CFU/100mL (see **Table 14**). The medians at the stations in the watershed were all below 575 CFU/100mL.

TABLE 14: SUMMARY OF WILLS BRANCH FECAL COLIFORM DATA BY YEAR, 2010–14

YEAR	NUMBER	MINIMUM (#/100ML)	MAXIMUM (#/100ML)	MEDIAN (#/100ML)	MEAN (#/100ML)	NUMBER OF EXCEEDANCES	% EXCEEDANCES
2010	8	58	1,000	485	494	5	63%
2011	6	300	10,000	1,300	2,745	4	67%
2012	5	88	541	200	256	1	20%
2013	6	130	1,171	360	495	2	33%
2014	8	180	5,900	946	1,632	7	88%

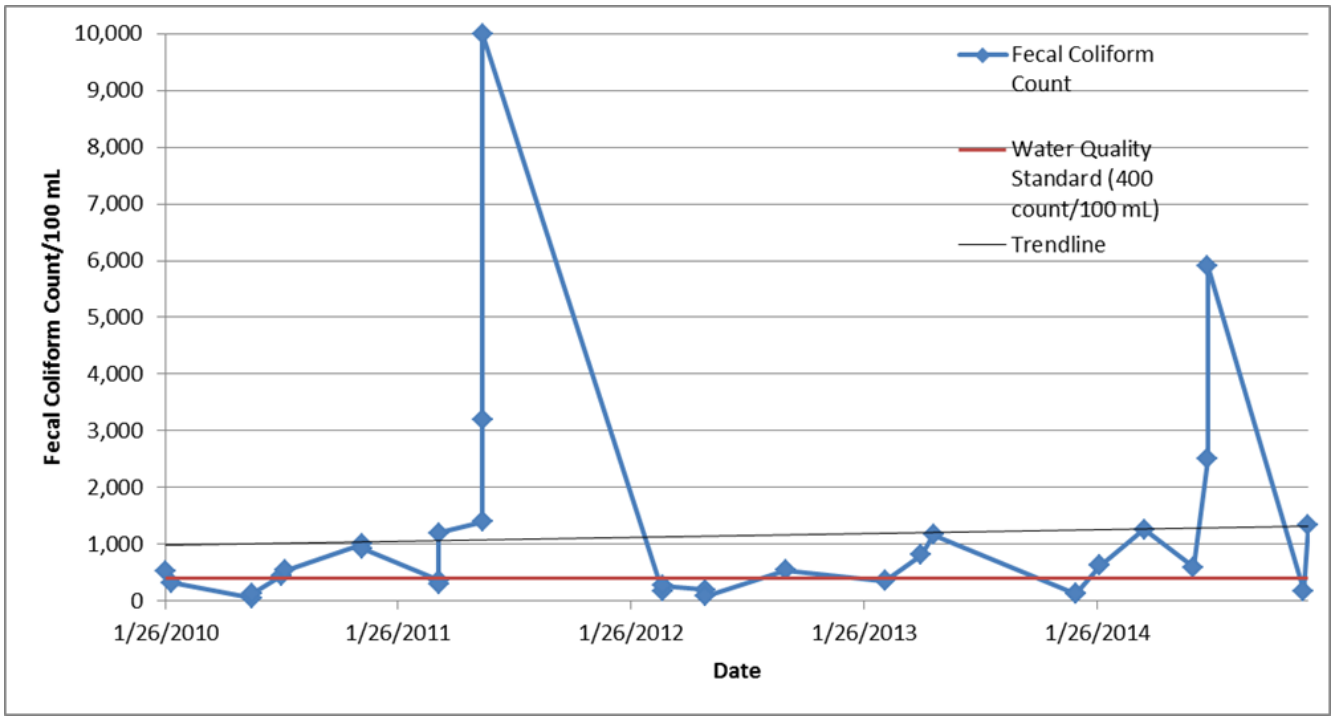

FIGURE 20: FECAL COLIFORM TRENDS IN WILLS BRANCH, 2010–14

In reference to water quality standards, the waterbodies are assessed based on the number of exceedances over 400 CFU/100mL. Based on the number of samples taken in a given data period, a limited number of exceedances is allowed before the waterbody is considered impaired. While the charts showing the trends over time are helpful to see how the coliform levels are changing, from a compliance standpoint, the number of exceedances is the primary consideration. The chart below in **Figure 21** shows the cumulative percentage of the fecal coliform results in Wills Branch and how they compare with the standard of 400 CFU/100mL. When the water quality standard is being met, all or most of the results will be to the left of the 400 count line, meaning that most of the samples were at or below the water quality standard.

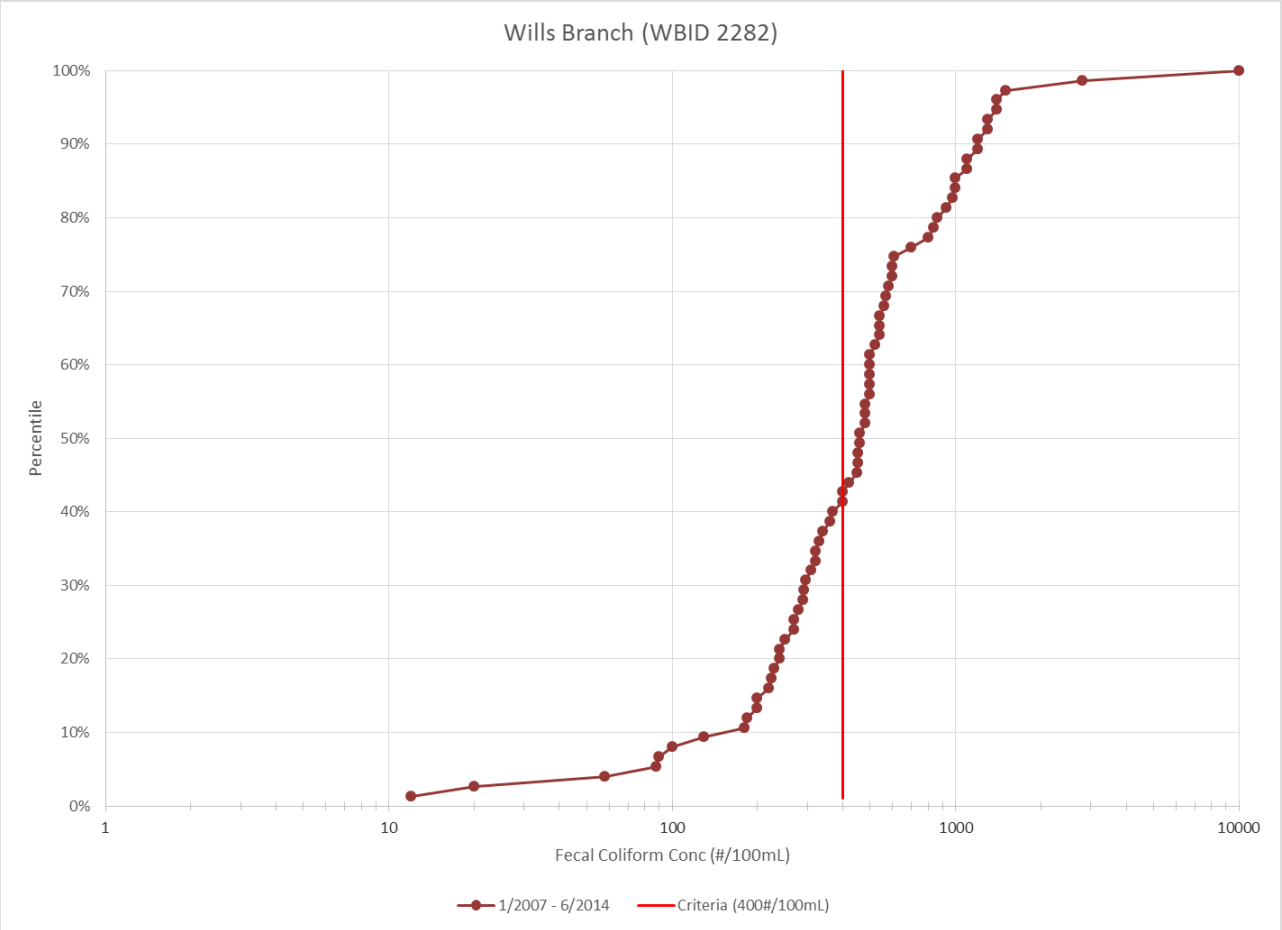

FIGURE 21: CUMULATIVE FREQUENCY OF FECAL COLIFORM RESULTS IN WILLS BRANCH COMPARED WITH THE WATER QUALITY STANDARD

1.5.11 SHERMAN CREEK

There was a slight increase in the fecal coliform results in the Sherman Creek watershed from 2010 to 2014 (see **Figure 22**). The median values have been consistently low (360 CFU/100mL or lower) for the entire period (see **Table 15)**. The highest median count of 2,100 CFU/100mL was at Station 21FLCOAB COAB3. This station is located at the intersection of Assisi Lane and Puckett Creek.

TABLE 15: SUMMARY OF SHERMAN CREEK FECAL COLIFORM DATA BY YEAR, 2010–14

YEAR	NUMBER	MINIMUM (#/100ML)	MAXIMUM (#/100ML)	MEDIAN (#/100ML)	MEAN (#/100ML)	NUMBER OF EXCEEDANCES	% EXCEEDANCES
2010	12	0	4,300	220	886	4	33%
2011	55	0	4,300	180	745	24	44%
2012	32	0	3,200	95	528	10	31%
2013	74	0	30,000	360	1,406	36	49%
2014	76	1	8,200	270	1,000	34	45%

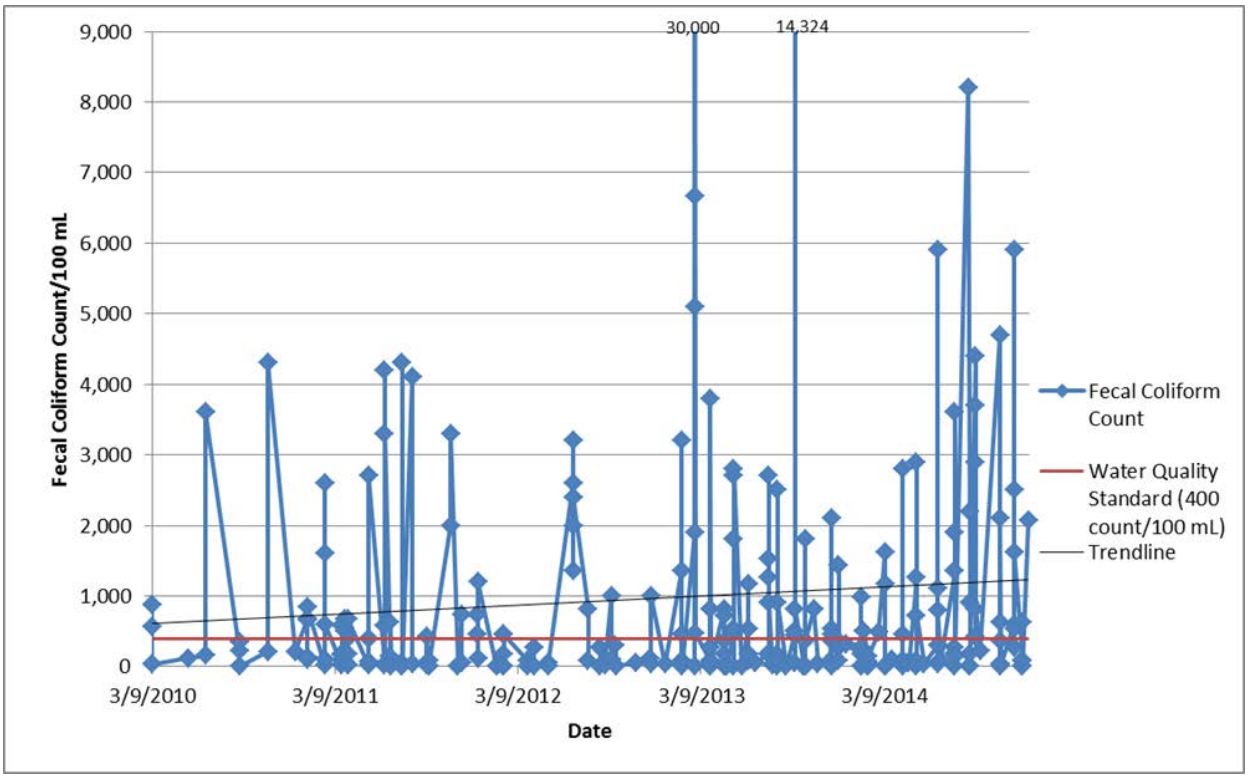

FIGURE 22: FECAL COLIFORM TRENDS IN SHERMAN CREEK, 2010–14

In reference to water quality standards, the waterbodies are assessed based on the number of exceedances over 400 CFU/100mL. Based on the number of samples taken in a given data period, a limited number of exceedances is allowed before the waterbody is considered impaired. While the charts showing the trends over time are helpful to see how the coliform levels are changing, from a compliance standpoint, the number of exceedances is the primary consideration. The chart below in **Figure 23** shows the cumulative percentage of the fecal coliform results in Sherman Branch and how they compare with the standard of 400 CFU/100mL. When the water quality standard is being met, all or most of the results will be to the left of the 400 count line, meaning that most of the samples were at or below the water quality standard.

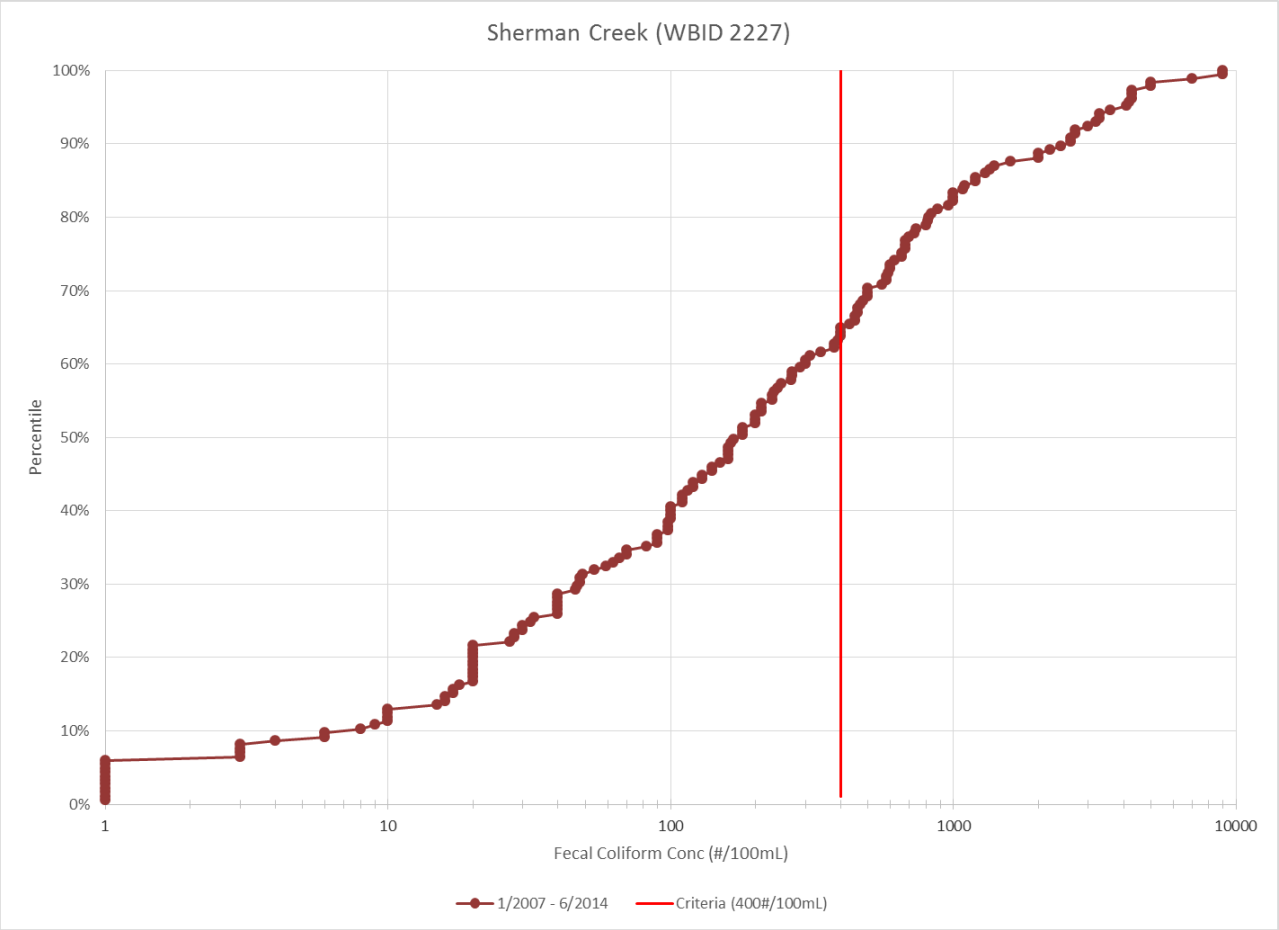

FIGURE 23: CUMULATIVE FREQUENCY OF FECAL COLIFORM RESULTS IN SHERMAN CREEK COMPARED WITH THE WATER QUALITY STANDARD

1.5.12 GREENFIELD CREEK

As Greenfield Creek is newly divided into freshwater (WBID 2240B) and marine (WBID 2240A) sections, the trends and assessment data are considered separately for each WBID. Both the freshwater and marine section data and trends are shown in **Figure 24**. There are only two data points for the marine section in this analysis, so until there are more data collected, the trendlines are not reliable. The median results for the freshwater section are shown in **Table 16**. When more data are available, the number of exceedances will be charted separately for the marine and freshwater sections.

TABLE 16: SUMMARY OF GREENFIELD CREEK FECAL COLIFORM DATA BY YEAR, 2010–14

N/A = Not applicable

YEAR	NUMBER	MINIMUM (#/100ML)	MAXIMUM (#/100ML)	MEDIAN (#/100ML)	MEAN (#/100ML)	NUMBER OF EXCEEDANCES	% EXCEEDANCES
2010	4	0	480	285	263	1	25%
2011	4	45	3,000	130	826	1	25%
2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2013	3	90	270	180	180	0	0%
2014	4	1	1,532	631	699	3	75%

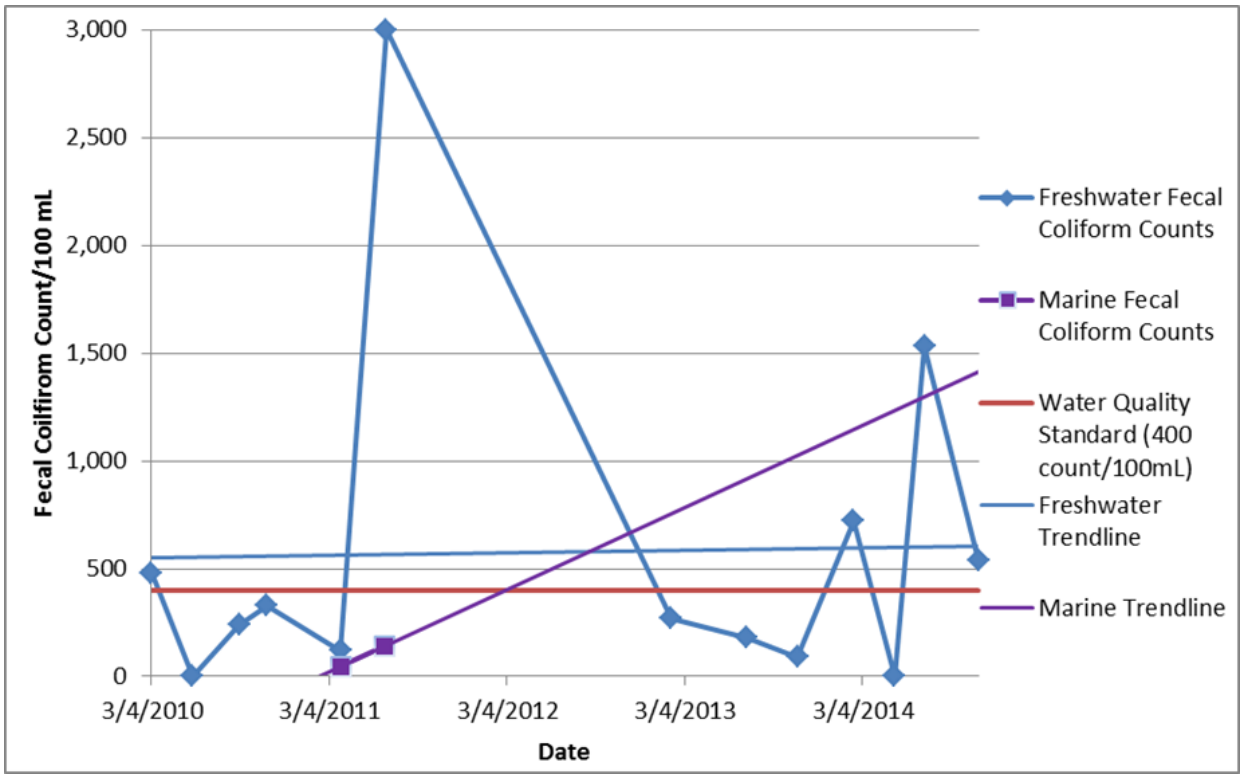

FIGURE 24: FECAL COLIFORM TRENDS IN FRESHWATER GREENFIELD CREEK, 2010–14

In reference to water quality standards, the waterbodies are assessed based on the number of exceedances over 400 CFU/100mL. Based on the number of samples taken in a given data period, a limited number of exceedances is allowed before the waterbody is considered impaired. While the charts showing the trends over time are helpful to see how the coliform levels are changing, from a compliance standpoint, the number of exceedances is the primary consideration. The chart below in **Figure *25*** shows the cumulative percentage of the fecal coliform results in freshwater section of Greenfield Creek and how they compare with the standard of 400 CFU/100mL. When the water quality standard is being met, all or most of the results will be to the left of the 400 count line, meaning that most of the samples were at or below the water quality standard.

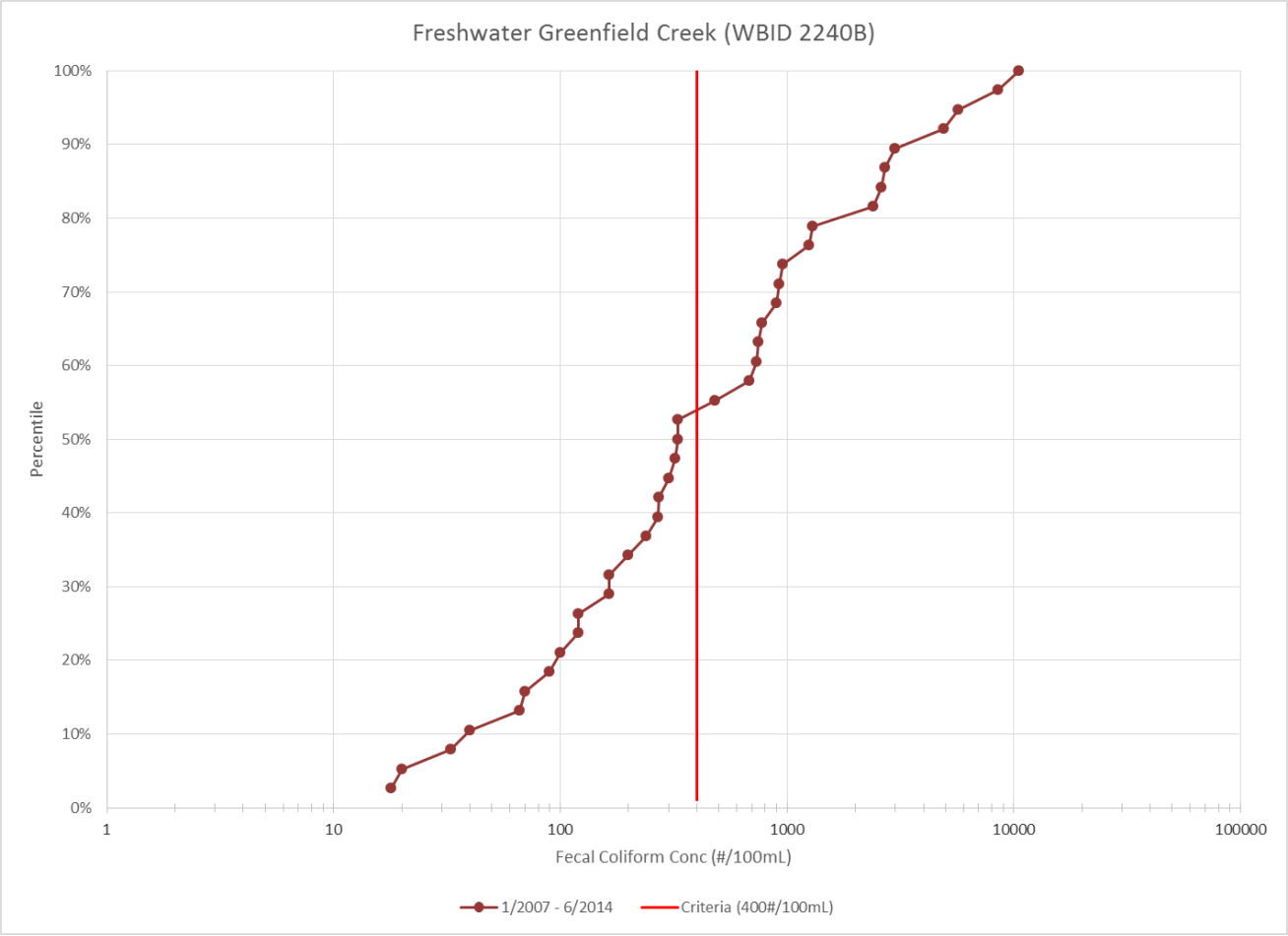

FIGURE 25: CUMULATIVE FREQUENCY OF FECAL COLIFORM RESULTS IN FRESHWATER GREENFIELD CREEK COMPARED WITH THE WATER QUALITY STANDARD

1.5.13 POTTSBURG CREEK

As Pottsburg Creek is newly divided into freshwater (WBID 2265C) and marine (WBID 2265D) sections, the trends and assessment data are considered separately for each WBID. Overall, the fecal coliform concentrations in the freshwater WBID 2265C have increased, while the concentrations in the marine WBID 2265D show a slight increasing trend. Both the freshwater and marine section data and trends are shown in **Figure 26**. The median results for the freshwater section are shown in **Table 17.** When more data are available, the number of exceedances will be charted separately for the marine and freshwater sections of Moncrief Creek.

TABLE 17: SUMMARY OF POTTSBURG CREEK FRESHWATER SECTION FECAL COLIFORM DATA BY YEAR, 2010–14

YEAR	NUMBER	MINIMUM (#/100ML)	MAXIMUM (#/100ML)	MEDIAN (#/100ML)	MEAN (#/100ML)	NUMBER OF EXCEEDANCES	% EXCEEDANCES
2010	9	220	2,800	300	712	4	44%
2011	8	72	380	125	184	0	0%
2012	4	110	490	255	278	1	25%
2013	7	180	2,100	991	985	4	57%
2014	8	3	2,500	426	893	4	50%

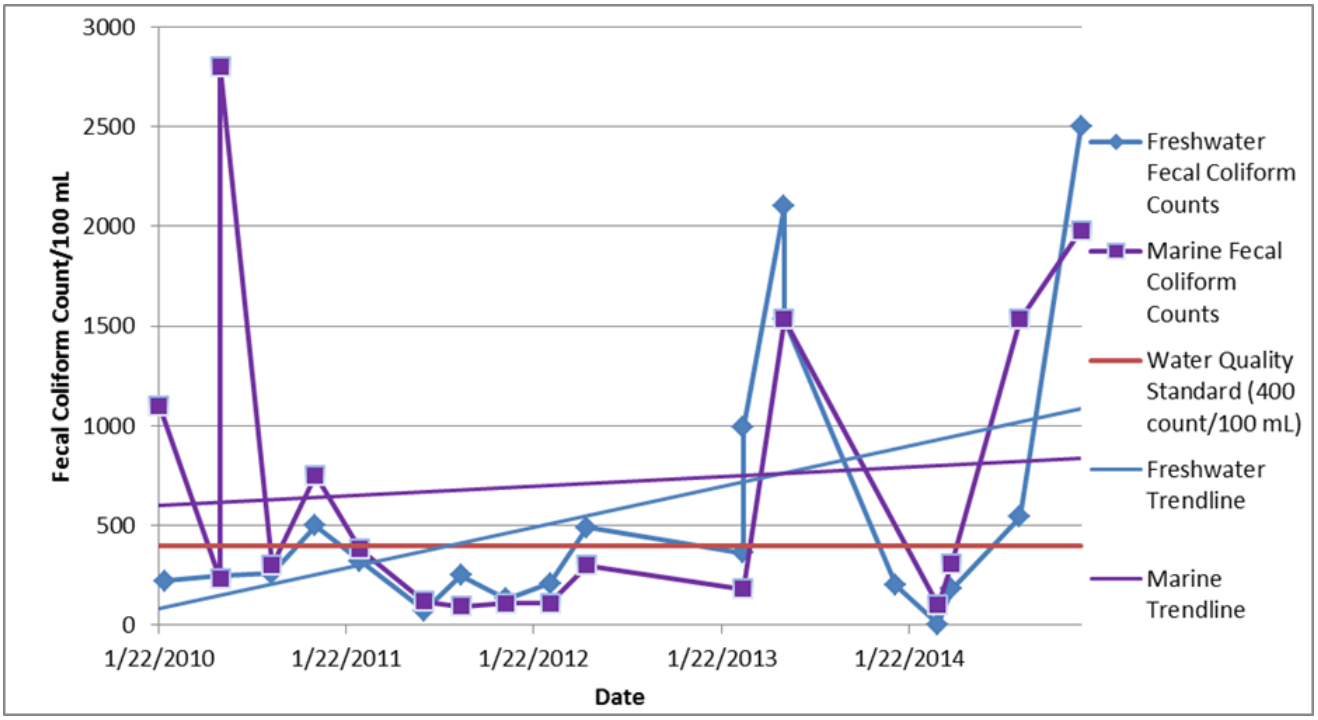

FIGURE 26: FECAL COLIFORM TRENDS IN POTTSBURG CREEK, 2010–14

In reference to water quality standards, the waterbodies are assessed based on the number of exceedances over 400 CFU/100mL. Based on the number of samples taken in a given data period, a limited number of exceedances is allowed before the waterbody is considered impaired. While the charts showing the trends over time are helpful to see how the coliform levels are changing, from a compliance standpoint, the number of exceedances is the primary consideration. The chart below in **Figure 27** shows the cumulative percentage of the fecal coliform results in the freshwater section of Pottsburgs Creek and how they compare with the standard of 400 CFU/100mL. When the water quality standard is being met, all or most of the results will be to the left of the 400 count line, meaning that most of the samples were at or below the water quality standard.

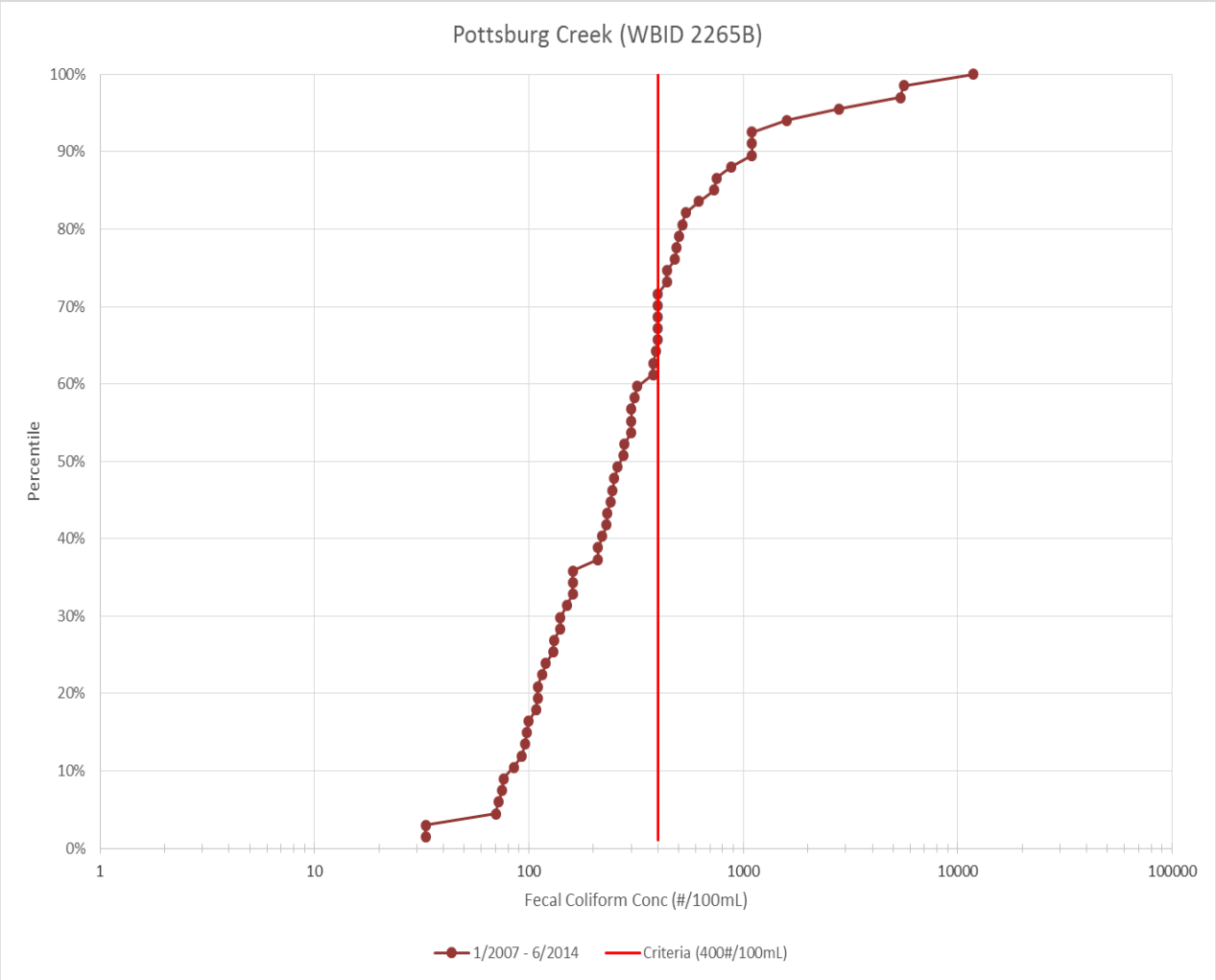

FIGURE 27: CUMULATIVE FREQUENCY OF FECAL COLIFORM RESULTS IN POTTSBURG CREEK COMPARED WITH THE WATER QUALITY STANDARD

1.5.14 MIDDLE TROUT RIVER

Fecal coliform results in the Middle Trout River increased from 2010 to 2014 (see **Figure 28**). However, the median results have remained consistently low in the watershed (see **Table 18**). All of the monitoring stations in the watershed had median values at or below 430 CFU/100mL.

TABLE 18: SUMMARY OF MIDDLE TROUT RIVER FECAL COLIFORM DATA BY YEAR, 2010–14

YEAR	NUMBER	MINIMUM (#/100ML)	MAXIMUM (#/100ML)	MEDIAN (#/100ML)	MEAN (#/100ML)	NUMBER OF EXCEEDANCES	% EXCEEDANCES
2010	8	58	500	120	193	1	13%
2011	15	0	991	280	371	6	40%
2012	31	62	3,600	350	500	14	45%
2013	38	1	5,700	360	666	16	42%
2014	31	1	4,700	470	1,067	17	55%

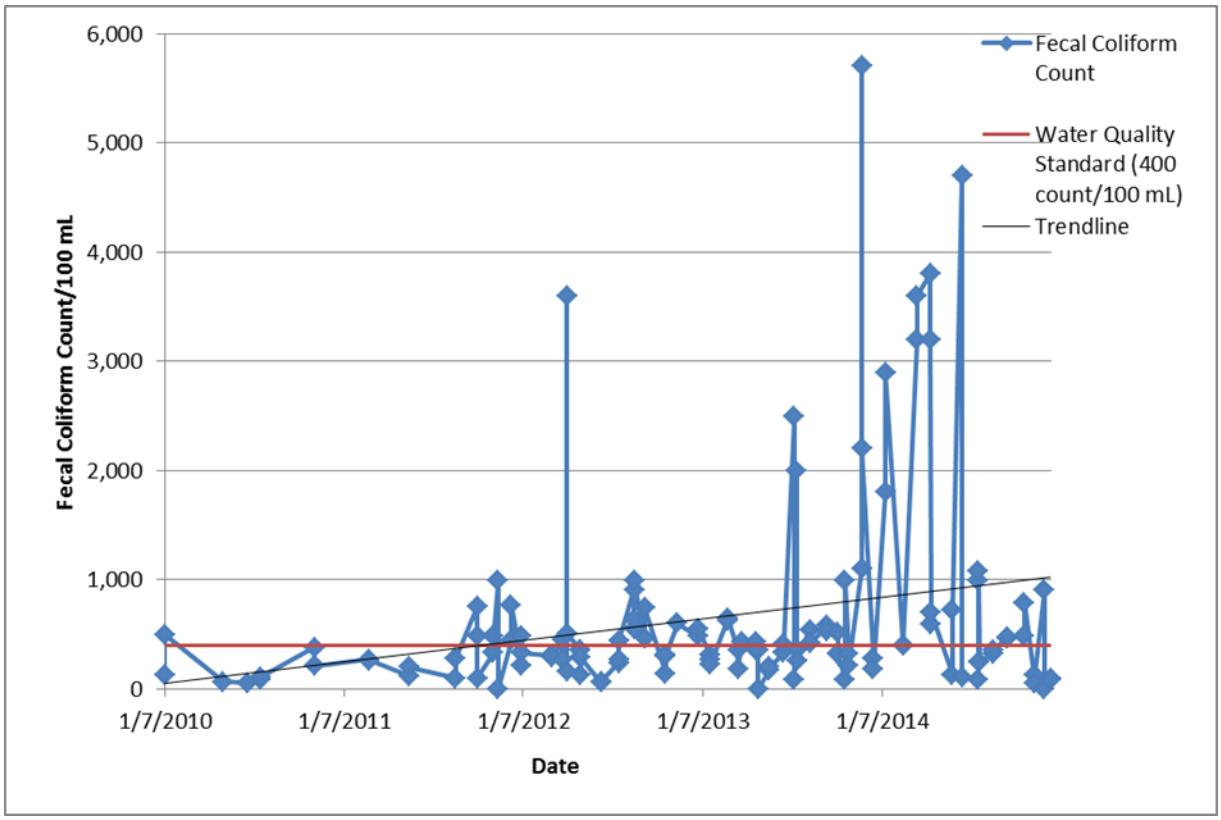

FIGURE 28: FECAL COLIFORM TRENDS IN MIDDLE TROUT RIVER, 2010–14

In reference to water quality standards, the waterbodies are assessed based on the number of exceedances over 400 CFU/100mL. Based on the number of samples taken in a given data period, a limited number of exceedances is allowed before the waterbody is considered impaired. While the charts showing the trends over time are helpful to see how the coliform levels are changing, from a compliance standpoint, the number of exceedances is the primary consideration. The chart below in **Figure 29** shows the cumulative percentage of the fecal coliform results in Middle Trout River and how they compare with the standard of 400 CFU/100mL. When the water quality standard is being met, all or most of the results will be to the left of the 400 count line, meaning that most of the samples were at or below the water quality standard.

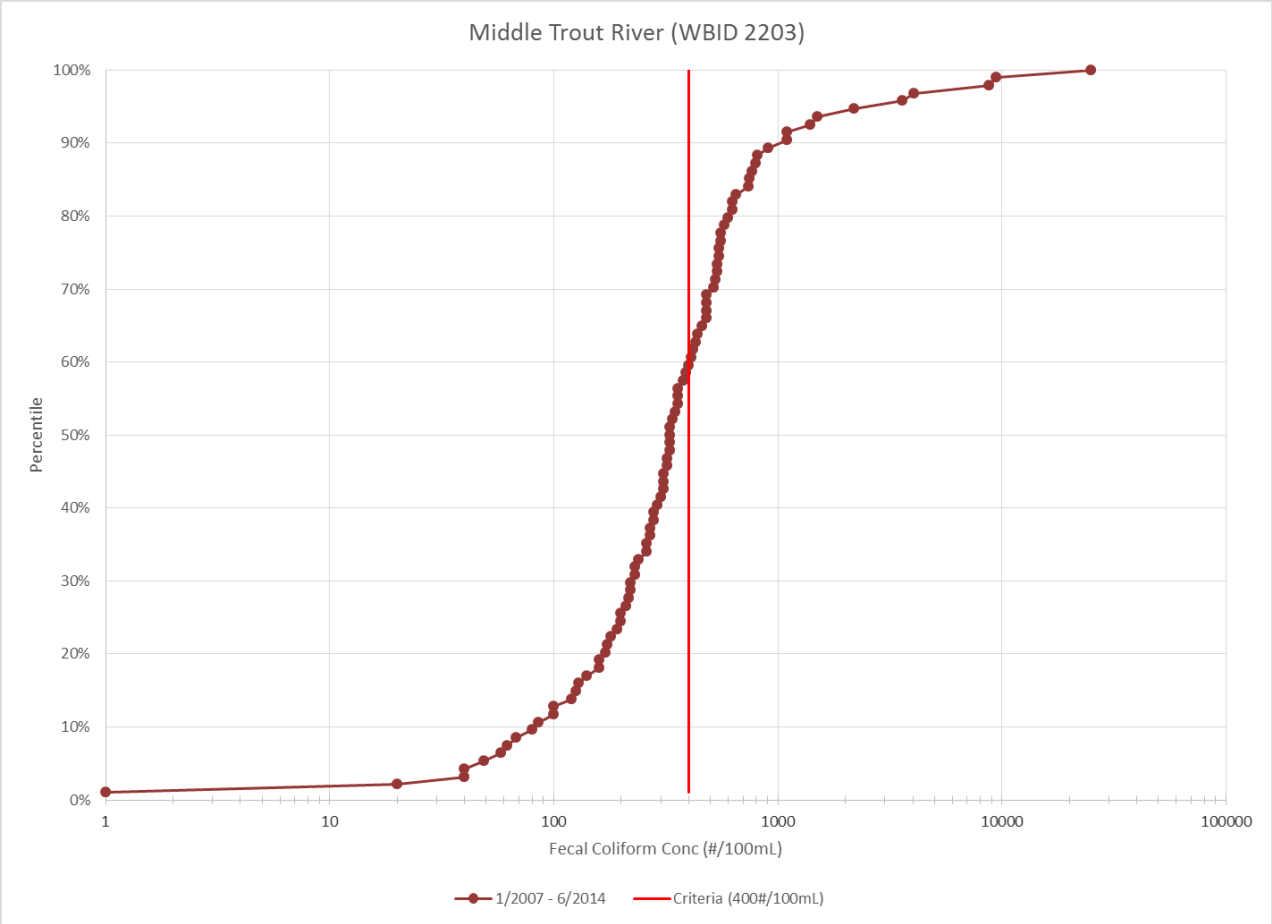

FIGURE 29: CUMULATIVE FREQUENCY OF FECAL COLIFORM RESULTS IN MIDDLE TROUT RIVER COMPARED WITH THE WATER QUALITY STANDARD

1.5.15 LOWER TROUT RIVER

Fecal coliform results in the Lower Trout River slightly increased from 2010 to 2014 (see **Figure 30**). However, the median results have remained consistently low; all below 260 CFU/100mL (see **Table 19**). All of the monitoring stations in the watershed had median values below 360 CFU/100mL.

TABLE 19: SUMMARY OF LOWER TROUT RIVER FECAL COLIFORM DATA BY YEAR, 2010–14

YEAR	NUMBER	MINIMUM (#/100ML)	MAXIMUM (#/100ML)	MEDIAN (#/100ML)	MEAN (#/100ML)	NUMBER OF EXCEEDANCES	% EXCEEDANCES
2010	8	10	890	96	256	2	25%
2011	8	0	360	19	65	0	0%
2012	7	0	3,900	360	1,036	3	43%
2013	6	90	721	180	270	1	17%
2014	8	1	721	225	259	3	38%

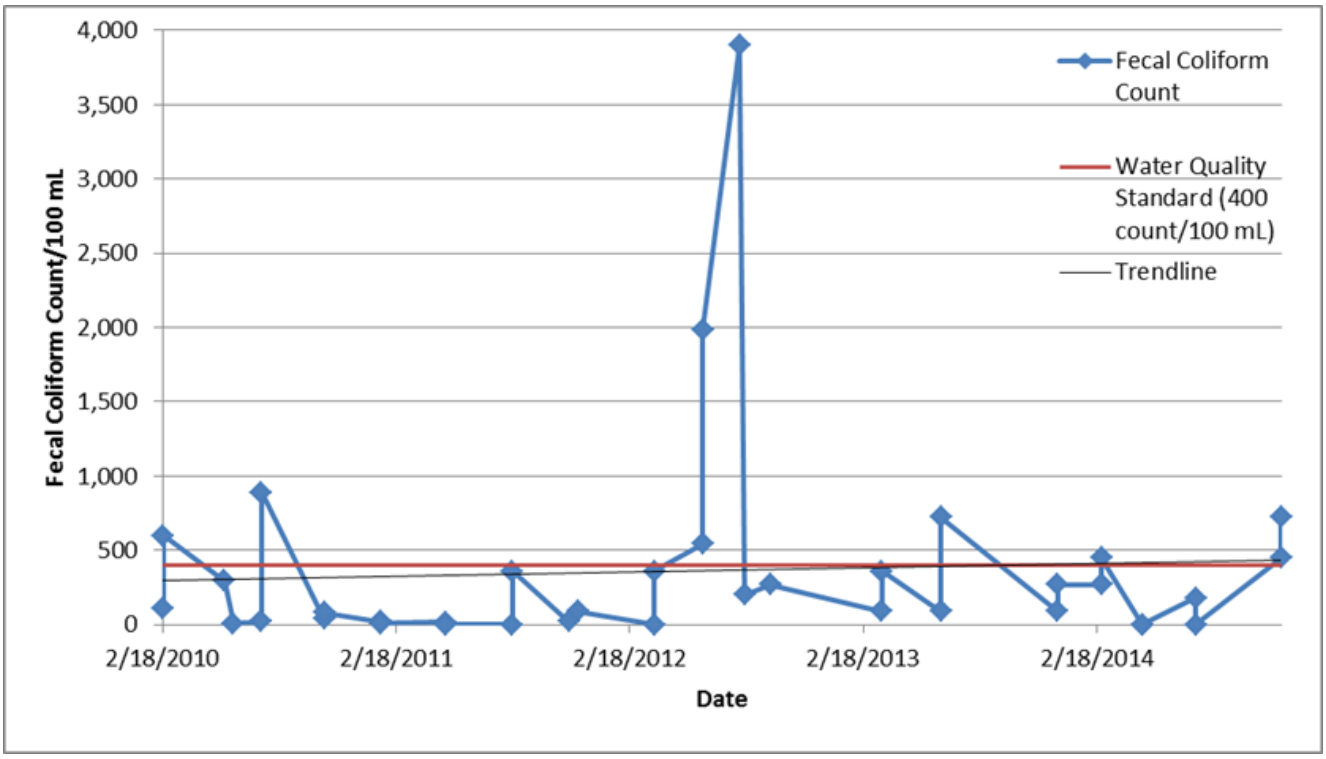

FIGURE 30: FECAL COLIFORM TRENDS IN LOWER TROUT RIVER, 2010–14

In reference to water quality standards, the waterbodies are assessed based on the number of exceedances over 400 CFU/100mL. Based on the number of samples taken in a given data period, a limited number of exceedances is allowed before the waterbody is considered impaired. While the charts showing the trends over time are helpful to see how the coliform levels and changing, from a compliance standpoint, the number of exceedances is the primary consideration. The chart below in **Figure 31** shows the cumulative percentage of the fecal coliform results in Lower Trout River and how they compare with the standard of 400 CFU/100mL. When the water quality standard is being met, all or most of the results will be to the left of the 400 count line, meaning that most of the samples were at or below the water quality standard.

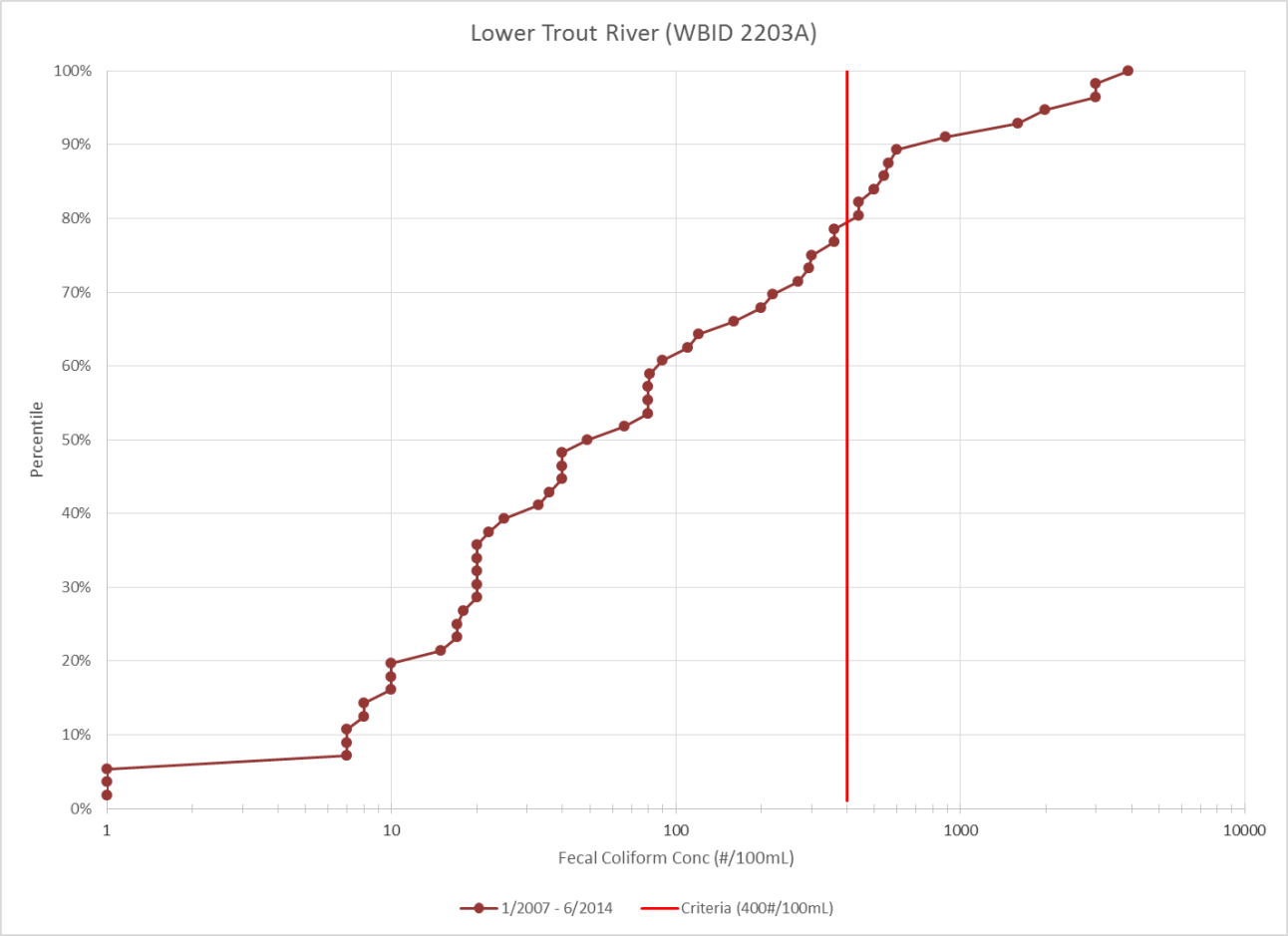

FIGURE 31: CUMULATIVE FREQUENCY OF FECAL COLIFORM RESULTS IN LOWER TROUT RIVER COMPARED WITH THE WATER QUALITY STANDARD

SECTION 2: WATER QUALITY MONITORING AND SOURCE ASSESSMENT

2.1 WATER QUALITY MONITORING PLAN

The water quality monitoring network was revised during the first and second phase of BMAP implementation. The current stations in the monitoring network and responsible entity for sampling are described below for each WBID. Additional sampling will occur, as needed, to follow up on fecal coliform results that are greater than 5,000 CFU/100mL, which indicates a human source. Sampling will only occur if the monitoring site has at least 10 centimeters of water, and the water is flowing normally for that stream.

COJ, the department, JEA, city of Jacksonville Beach, and NS Mayport are responsible for collecting the samples. The cities of Atlantic Beach and Neptune Beach provide funding to collect some samples. In addition, through the MS4 agreement, FDOT provides funding to COJ, a portion of which is used for the BMAP monitoring and follow up sampling. Through the adaptive management process, monitoring stations may be moved to different locations, but the same level of effort will be conducted by the various participants so that the various impairments in the basin can be identified and addressed.

To support monitoring efforts and follow up on high results, the Tributaries Assessment Team (TAT) meets regularly. That TAT consists of the sampling entities listed above and it is important that the TAT continues to actively tack potential sources. The following entities are committed to continuing their regular participation in the TAT to coordinate and modify monitoring efforts as appropriate:

- Department.
- COJ.
- JEA.
- FDOT.
- City of Jacksonville Beach.
- City of Atlantic Beach.
- City of Neptune Beach.
- NS Mayport.

2.1.1 CITY OF JACKSONVILLE BEACH MONITORING EFFORTS

The city of Jacksonville Beach will continue its participation in the TAT coordination calls and other TAT efforts. The city will assist the department in following up on source identification results that indicate a human source in areas with city sanitary sewer and MS4 infrastructure. The city of Jacksonville Beach will also continue its BMAP monitoring, with adjustments made as needed, and follow up on high results per the TAT protocol.

The city of Jacksonville Beach's monitoring actions are summarized in **Table 20**.

TABLE 20: CITY OF JACKSONVILLE BEACH MONITORING ACTIONS

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
JB-68	Participate in TAT Calls and Efforts	Continue participation in the TAT coordination calls and other TAT efforts.	Ongoing	Unknown	Jacksonville Beach	Ongoing
JB-69	Sample Analysis	Continue BMAP monitoring, with adjustments made as needed, and follow up on high results per the TAT protocol.	Ongoing	Unknown	Jacksonville Beach	Ongoing

2.1.2 CITY OF NEPTUNE BEACH MONITORING EFFORTS

The city of Neptune Beach will continue its participation in the TAT coordination calls and other TAT efforts. The city's monitoring follow-up actions are summarized in **Table 21**.

TABLE 21: CITY OF NEPTUNE BEACH MONITORING ACTIONS

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
NB-61	Participate in TAT Calls and Efforts	Continue participation in the TAT coordination calls and other TAT efforts.	Ongoing	Unknown	Neptune Beach	Ongoing
NB-62	Source Identification Follow Up	Assist the department in following up on source identification results that indicate a human source.	Ongoing	Unknown	Neptune Beach	Ongoing

2.1.3 CITY OF ATLANTIC BEACH MONITORING EFFORTS

The city of Atlantic Beach will continue its participation in the TAT coordination calls and other TAT efforts. The city's monitoring follow-up actions are summarized in **Table 22**.

TABLE 22: CITY OF ATLANTIC BEACH MONITORING ACTIONS

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
AB-167	Participate in TAT Calls and Efforts	Continue participation in the TAT coordination calls and other TAT efforts.	Ongoing	Unknown	Neptune Beach	Ongoing
AB-168	Source Identification Follow Up	Assist the department in following up on source identification results that indicate a human source.	Ongoing	Unknown	Neptune Beach	Ongoing

2.1.4 NS MAYPORT MONITORING EFFORTS

NS Mayport will continue its participation in the TAT coordination calls and other TAT source identification efforts as needed. NS Mayport will also continue its BMAP monitoring, with adjustments made as needed, follow up on high results per the TAT protocol, and add E. coli in fresh water stations and *Enterococcus* at saltwater segmentto its sample analyses. Sampling for these additional parameters helps eliminate false positives in fecal coliform and will help provide data to make future assessment calls under a possible future change in criteria.

TABLE 23: NS MAYPORT MONITORING ACTIONS

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
NSM-20	Participate in TAT Calls and Efforts	Continue participation in the TAT coordination calls and other TAT efforts.	Ongoing	Unknown	NS Mayport	Ongoing
NSM-21	Sample Analysis	Continue BMAP monitoring, with adjustments made as needed, and follow up on high results per the TAT protocol. Add E. coli and Enterococcus, as appropriate.	Ongoing	Unknown	NS Mayport	Ongoing

2.1.5 CRAIG CREEK MONITORING NETWORK

The department is responsible for monitoring in Craig Creek, and **Table 24** lists the stations that are sampled.

TABLE 24: MONITORING STATION IN CRAIG CREEK

MONITORING STATION	STATION TYPE	FREQUENCY	LOCATION	RESPONSIBLE ENTITY
21FLJXWQSS63	Trend	Quarterly	Craig Creek in Park at Hendricks Avenue	Department
21FLA 20030957	Source assessment	Monthly	Craig Creek at Lorimer	Department
21FLA 20030800	Source assessment	Monthly	Craig Creek at Hendricks	Department

2.1.6 McCoy Creek Monitoring Network

JEA is responsible for monitoring in McCoy Creek, and **Table 25** lists the stations that are sampled.

TABLE 25: MONITORING STATIONS IN MCCOY CREEK

MONITORING STATION	STATION TYPE	FREQUENCY	LOCATION	RESPONSIBLE ENTITY
21FLJEAMCT1	Trend	Quarterly	Myrtle Avenue	JEA
21FLJEAMCT2	Trend	Quarterly	Leland Street	JEA
21FLJEAMCS1	Source assessment	Monthly	South of Broadway Avenue	JEA
21FLJEAMCS2	Source assessment	Monthly	Shearer Street between Dellwood Avenue and Myra Street	JEA

2.1.7 Williamson Creek Monitoring Network

JEA is responsible for monitoring in Williamson Creek, and **Table 26** lists the stations that are sampled. Note that the previous station 21FLJEAWCS2 near Wilson Boulevard and Lane Avenue was a side ditch that was often too shallow to sample. As this station was not representative of the creek conditions, the station was discontinued. Also, the station at Jammes Road (21FLJEAWCT1) was replaced with the station WCT3 on Hugh Edwards because traffic made the Jammes Road station dangerous. The Hugh Edwards site is just upstream of the former site and is much safer. The station WCT3 on Hugh Edwards will be sampled monthly to replace the frequency of the discontinued monthly station at Wilson and Lane.

TABLE 26: MONITORING STATIONS IN WILLIAMSON CREEK

MONITORING STATION	STATION TYPE	FREQUENCY	LOCATION	RESPONSIBLE ENTITY
WCT3	Trend	Monthly	Upstream Side of Hugh Edwards	JEA
21FLJEAWCT	Trend	Quarterly	Hyde Park Road	JEA
21FLJEAWCS1	Source assessment	Monthly	Williamson Creek at Wilson Boulevard	JEA

2.1.8 Fishing Creek Monitoring Network

COJ is responsible for monitoring in Fishing Creek, and **Table 27** lists the stations that are sampled.

TABLE 27: MONITORING STATIONS IN FISHING CREEK

MONITORING STATION	STATION TYPE	FREQUENCY	LOCATION	RESPONSIBLE ENTITY
21FLJXWQOR4	Trend	Quarterly	Timuquana Road and Fishing Creek	COJ
21FLJXWQOR94	Source assessment	Monthly	Fishing Creek at Ortega River Confluence	COJ
OR118	Source assessment	Monthly	Fishing Creek south branch at 118th St. east of Jammes Rd.	COJ
OR8W	Source assessment	Monthly	Fishing Creek north branch at Jammes Rd.	COJ

2.1.9 DEEP BOTTOM CREEK MONITORING NETWORK

COJ is responsible for monitoring in Deep Bottom Creek, and **Table 28** lists the stations that are sampled.

TABLE 28: MONITORING STATIONS IN DEEP BOTTOM CREEK

MONITORING STATION	STATION TYPE	FREQUENCY	LOCATION	RESPONSIBLE ENTITY
21FLJXWQSS18	Trend	Quarterly	Scott Mill Road	COJ
21FLJXWQDBHARTW	Source assessment	Monthly	Northern branch at Hartley Road, west of Cypresswood Drive	COJ
21FLJXWQDBHARTE	Source assessment	Monthly	Hood Road	COJ

2.1.10 MONCRIEF CREEK MONITORING NETWORK

The department is responsible for monitoring the freshwater and marine sections in Moncrief Creek, and **Table 29** lists the stations that are sampled.

TABLE 29: MONITORING STATIONS IN MONCRIEF CREEK

MONITORING STATION	STATION TYPE	FREQUENCY	LOCATION	RESPONSIBLE ENTITY
21FLA20030316	Trend	Quarterly	Tributary to Moncrief at Kenmore	Department
21FLA20030726	Trend	Quarterly	Moncrief Creek at Moncrief Road	Department
21FLA20030896	Source assessment	Monthly	Moncrief Creek at Kings	Department
21FLA20030959	Source assessment	Monthly	Northeastern branch at West 63rd Street	Department

2.1.11 HOPKINS CREEK MONITORING NETWORK

COJ, Atlantic Beach, Jacksonville Beach, and Neptune Beach are responsible for monitoring in Hopkins Creek, and **Table 30** lists the stations that are sampled.

TABLE 30: MONITORING STATIONS IN HOPKINS CREEK

MONITORING STATION	STATION TYPE	FREQUENCY	LOCATION	RESPONSIBLE ENTITY
IWWH	Trend	Monthly	Kings Road	COJ
COAB1	Source assessment	Monthly	Hopkins Creek at Atlantic Boulevard	Atlantic Beach
SW-BT03	Source assessment	Monthly	Southeastern branch at 20th Avenue North	Jacksonville Beach
SW-BT06	Source assessment	Monthly	Southwestern branch at Tallwood Road	Jacksonville Beach

2.1.12 Sherman Creek Monitoring Network

COJ, NS Mayport, and Atlantic Beach are responsible for monitoring in Sherman Creek, and **Table 31** lists the stations that are sampled.

TABLE 31: MONITORING STATIONS IN SHERMAN CREEK

Monitoring Station	Station Type	Frequency	Location	Responsible Entity
SC1	Trend	Quarterly	Puckett Creek at Wonderwood Dr	COJ
COAB3	Source assessment	Monthly	Assisi Lane and Puckett Creek intersection	Atlantic Beach
COAB2	Source assessment	Monthly	Sherman Creek at Fleet Landing Blvd	Atlantic Beach
COAB4-LS	Source assessment	Monthly	Lift station on north side of neighborhood	Atlantic Beach
SHERCRK2	Source assessment	Monthly	Everglades Street upstream of weir	NS Mayport
IWW2	Trend	Quarterly	Sherman Creek at A1A (Mayport Rd.)	COJ

2.1.13 Cormorant Branch Monitoring Network

COJ is responsible for monitoring in Cormorant Branch, and **Table 32** lists the stations that are sampled.

TABLE 32: MONITORING STATIONS IN CORMORANT BRANCH

Monitoring Station	Station Type	Frequency	Location	Responsible Entity
21FLJXWQJC15	Trend	Quarterly	Cormorant Branch at Julington Creek Road	COJ
21FLJXWQJC437	Source Assessment	Monthly	Cormorant Branch at Marbon Road	COJ
21FLJXWQJC2A	Source Assessment	Monthly	Cormorant Branch at Heather Grove Lane	COJ

2.1.14 Greenfield Creek Monitoring Network

COJ is responsible for monitoring in Greenfield Creek, and **Table 33** lists the stations that are sampled.

TABLE 33: MONITORING STATIONS IN GREENFIELD CREEK

Monitoring Station	Station Type	Frequency	Location	Responsible Entity
BP64	Trend	Quarterly	Big Pottsburg Creek at Belfort Road South End	COJ
BP65	Trend	Quarterly	Bennett Branch at Salisbury Road	COJ
BP67	Trend	Quarterly	Big Pottsburg Creek at Hogan Road	COJ
BP71	Trend	Quarterly	Big Pottsburg Creek at Parental Home Road	COJ

2.1.15 Pottsburg Creek Monitoring Network

COJ is responsible for monitoring in Pottsburg Creek, and **Table 34** lists the stations that are sampled.

TABLE 34: MONITORING STATIONS IN POTTSBURG CREEK

Monitoring Station	Station Type	Frequency	Location	Responsible Entity
LP3	Trend	Quarterly	Greenfield Creek at Atlantic Blvd.	COJ
LP4	Trend	Quarterly	Greenfield Creek Dock at 1585 Girvin Road	COJ

2.1.16 MIDDLE TROUT RIVER MONITORING NETWORK

The department is responsible for monitoring in Middle Trout River, and **Table 35** lists the stations that are sampled.

TABLE 35: MONITORING STATIONS IN MIDDLE TROUT RIVER

MONITORING STATION	STATION TYPE	FREQUENCY	LOCATION	RESPONSIBLE ENTITY
21FLA 20030123	Trend	Quarterly	Trout River at Dinsmore Boat Ramp Boat Dock NR US 1	Department
21FLA 20030047	Source Assessment	Monthly	Trout River at Colorado Springs Road	Department
21FLA 20030753	Source Assessment	Monthly	Trout River at Old Kings Road	Department

2.2 WALK THE WBID AND SOURCE IDENTIFICATION SAMPLING

During this BMAP period, the department and LSJR Tributaries BMAP II stakeholders will conduct an intensive effort to evaluate two impaired tributaries: Williamson Creek and Craig Creek. Representatives from the stakeholders in these tributaries will participate in the two main components of this effort: (1) Maps on the Table, and (2) Walk the WBID.

For the Maps on the Table exercise, representatives from each entity who had local knowledge of the watersheds will gather to review maps of each watershed to identify locations of potential sources and areas that needed further investigations. The information from the Maps on the Table exercise will be used to assist entity representatives in the field effort, Walk the WBID. The department will lead a walk with entity representatives in each of the two watersheds to investigate areas of concern and to identify potential fecal coliform sources. While in the field, the stakeholders will look for the following potential sources:

- Sanitary sewer lift stations and locations of repeat sanitary sewer overflows (SSOs).
- Neighborhoods with older sanitary sewer lines.
- Failing septic system areas, soggy drainfields.
- Tail pipes into ditches.
- Homeless areas and homeless camps.
- Dog walk areas or dog parks.
- Animal kennels and dumped cat litter.

- Bird rookeries.
- Concentrations of geese and Muscovy ducks, and areas where ducks are fed.
- Farm animals, hobby farms, and horses.
- Wild hogs, raccoons, and other wild animals.
- Rotting biological material around dumpsters, open or rusty dumpsters.
- Trash, garbage dumping, food waste, and used diapers.
- Grease behind restaurants.
- Stormwater blockages such as trash and debris.
- Stormwater conveyances in need of maintenance.
- Overgrown stormwater treatment ponds.
- Areas prone to flooding.
- Ideal conditions for bacteria growth created by low flows, sediment, and shady conditions.

The source identification sampling is only the first step in a larger assessment project for these tributaries. The department will collect additional data to represent different hydrological conditions and to follow up on the initial findings. Based on the results of the source identification sampling, as well as the routine BMAP monitoring, the stakeholders will take actions to address the sources identified. These additional follow up activities and projects will be documented during phase two of the BMAP.

In early 2015, all 15 tributaries were toured in-person by a group of local government and agency representatives to look for potential issues and sources; this in-field investigation is called a reconnaissance effort to look for sources. Based on the reconnaissance effort, no obvious fecal coliform sources were found but program activities will continue. As previously discussed, both Craig Creek and Williamson Creek will be further investigated through a Walk the WBID effort during this BMAP

iteration. Particularly in the tributaries in the city of Jacksonville, specific monitoring efforts will be conducted to identify sources by following up when high results are found.

2.3 WBID BOUNDARY MODIFICATIONS

During the watershed assessments that occurred during 2015, the department and stakeholders determined that the boundaries for five of the BMAP WBIDs needed to be modified to reflect the hydrological conditions on the field. The department has officially modified the boundaries for the following WBIDs:

- Craig Creek.
- Fishing Creek.
- Hopkins Creek.
- Sherman Creek.
- Trout River.

In addition, since the TMDLs were adopted, the department determined that several of the BMAP WBIDs should be split into two; one for the freshwater segment and one for the marine segment. This change affected Moncrief Creek (WBID 2228B is the freshwater segment and WBID 2228A is the marine segment), Pottsburg Creek (WBID 2265C is the freshwater segment and WBID 2265D is the marine segment), and Greenfield Creek (WBID 2240B is the freshwater segment and WBID 2240A is the marine segment). **Table 36** summarizes these changes in WBID numbering.

TABLE 36: WBID NUMBERING CHANGES

WATERBODY NAME	ORIGINAL WBID NUMBER	NEW FRESHWATER SEGMENT WBID NUMBER	NEW MARINE SEGMENT WBID NUMBER
Moncrief Creek	2228	2228B	2228A
Pottsburg Creek	2265B	2265C	2265D
Greenfield Creek	2240	2240B	2240A

The maps showing the new boundaries and WBID splits are included in **Appendix A**. It is important to note that since the boundaries for these WBIDs are different from the boundaries in the 2010 BMAP, a direct comparison in the stakeholders' level of effort for different strategies between the first iteration and second iteration BMAPs cannot be made.

SECTION 3: COUNTYWIDE PROGRAMS IN THE LSJR BASIN

There are several programs and projects that the entities conduct on a countywide level and in the city of Jacksonville. These activities are summarized below and waterbody-specific efforts associated with these programs are described in the original BMAP, as well as its annual progress reports. The new management strategies that are being added to this BMAP are included in each WBID section (see **Section 4** through **Section 18**).

3.1 JEA

3.1.1 COUNTYWIDE PROGRAMS

JEA implements a number of countywide programs to address the sanitary sewer system as a source of fecal coliform contamination: (1) Fats, Oil, and Grease Reduction Program; (2) Sanitary Sewer Overflow (SSO) Root Cause Program; (3) Pop-Top Program; (4) Non-Destructive Testing and Air Release Valve Programs; (5) Supervisory Control and Data Acquisition; (6) Third Party Education and Enforcement Program; (7) Manhole Monitoring; (8) Force Main Discharge Manholes; and (9) Capacity, Management, Operations, and Maintenance Program.

3.1.2 MONITORING FOLLOW UP

JEA will continue its participation in the Tributaries Assessment Team (TAT) coordination calls and other TAT efforts. JEA will assist the department in following up on source identification results in areas with JEA sanitary sewer infrastructure. JEA will also continue to give priority to improving/repairing infrastructure in close proximity to surface waterbodies and stormwater conveyances. A significant increase of inspections, retrofits, and repairs of the sanitary sewer system already occur in the BMAP I and BMAP II watersheds. In addition, JEA will address any action items identified as a result of the BMAP Phase 2Walk the WBID that relate to its jurisdiction.

In BMAP watersheds, JEA will work with COJ and FDOH to develop an inspection program for dumpster areas and behind restaurants, convenience stores, and grocery stores. If food and grease are found on the ground, in stormwater conveyances, and/or running into creeks, JEA will report this issue to the Department of Business and Professional Regulation (DBPR), Florida Department of Agriculture and Consumer Services (FDACS), or COJ code enforcement. JEA's Industrial Pre-Treatment Inspection Program will help to report these issues, and the inspector will be trained by the DBPR to identify issues. JEA's inspector is able to visit between five and ten restaurants a day throughout Jacksonville.

JEA will also continue its BMAP monitoring, with adjustments made as needed, and will follow up on high results per the TAT protocol. JEA will also add Escherichia coli (E. coli) and Enterococcus, as appropriate, to its sample analyses.

Table 37 summarizes JEA's Walk the WBID follow-up actions.

TABLE 37: JEA WALK THE WBID FOLLOW UP ACTIONS

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
JEA-232	Participate in TAT Calls and Efforts	Continue participation in the TAT coordination calls and other TAT efforts.	Ongoing	Unknown	JEA	Ongoing
JEA-233	Source Identification Follow Up	Assist the department in following up on source identification results that indicate a human source.	Ongoing	Unknown	JEA	Ongoing
JEA-234	Prioritize Infrastructure Improvements	Give priority to improving/repairing infrastructure in close proximity to surface waterbodies and stormwater conveyances	Ongoing	Unknown	JEA	Ongoing
JEA-235	Walk the WBID Follow Up	Address any action items identified as a result of Phase 2 Walk the WBID.	Ongoing	Unknown	JEA	Ongoing
JEA-236	Dumpster Inspection Program	Develop an inspection program for dumpster areas and behind restaurants, convenience stores, and grocery stores.	Ongoing	Unknown	JEA	Ongoing
JEA-237	Sample Analysis	Continue BMAP monitoring, with adjustments made as needed, and follow up on high results per the TAT protocol. Add E. coli and Enterococcus, as appropriate.	Ongoing	Unknown	JEA	Ongoing

3.1.3 JEA PROJECT EXPANSION TO ADDITIONAL WBIDS

In the original BMAP adopted in 2010, JEA had certain wastewater infrastructure improvement projects listed in specific tributaries. During the first five years of implementation, some of these efforts were conducted in additional tributaries and were added to the tributary project tables where they had occurred and with new project numbers.

In this second iteration BMAP, the projects listed in **Table 38** represent JEA projects that may occur in many or all of the 13 tributaries in this BMAP where JEA has operations (JEA does not have infrastructure in Sherman and Hopkins Creeks), as appropriate, based on JEA's protocols for identifying problems and addressing them proactively. So while these efforts are not new in the JEA service area, they may be new in an individual tributary, and they are listed here as JEA anbticipates reporting annually on these activities when they have been conducted in the tributary areas addressed in this BMAP.

TABLE 38: JEA ACTIVITIES IN ALL LSJR TRIBUTARIES BMAP II WATERSHEDS EXCEPT SHERMAN CREEK AND HOPKINS CREEK

PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
Pipe Bursting–Increase Carrying Capacity	Replace failing/leaking infrastructure	Variable	Variable	JEA	Ongoing
Cured In Place Pipe (CIPP)–Install New Inner Lining	Rehabilitate failing/leaking infrastructure	Variable	Variable	JEA	Ongoing
Open Cut–Removal and Replacement	Replace failing/leaking infrastructure	Variable	Variable	JEA	Ongoing
Manhole Linings Rehabilitated	Repair deteriorating manhole linings	Variable	Variable	JEA	Ongoing
ARV Inspection and Rehab	ARV inspection and rehab	Variable	Variable	JEA	Ongoing
Pump Station Class I/II Rebuilding	Repair or replace components of existing pump stations	Variable	Variable	JEA	Ongoing
Pipe TV Inspection	Inspect existing infrastructure through use of CCTV system	Variable	Variable	JEA	Ongoing
Pipe Cleaning–JEA	Clean existing pipes to avoid blockages	Variable	Variable	JEA	Ongoing
FOG Reduction Program	FOG Reduction Program	Variable	Variable	JEA	Ongoing
Implement CMOM Program	CMOM Program	Variable	Variable	JEA	Ongoing
SSO Root Cause Program	SSO Root Cause Program	Variable	Variable	JEA	Ongoing
Pop-Top Program	Pop-Top Program	Variable	Variable	JEA	Ongoing
Non-Destructive Testing Program/Pipe Integrity Testing	Non-Destructive Testing Program/Pipe Integrity Testing	Variable	Variable	JEA	Ongoing

3.2 FDOH IN DUVAL COUNTY

3.2.1 COUNTYWIDE PROGRAMS

FDOH in Duval County implements a variety of countywide specific improvement programs and restoration activities to address OSTDS as sources of fecal coliform contamination. These include the OSTDS Program to address OSTDS as potential sources; annual training programs for OSTDS contractors, certified plumbers, maintenance entities, and environmental health professionals; application, plan review, and site evaluations for OSTDS new construction, repair, or modification; designation of OSTDS failure and nuisance areas for transfer to central sewer; and site investigations for complaints received with enforcement action when sanitary nuisance violations are observed.

3.2.2 MONITORING FOLLOW UP

FDOH in Duval County will continue its participation in the TAT coordination calls and other TAT efforts. FDOH will assist the department in following up on source identification results that indicate a

human source in areas with septic systems. This support will include providing information on where septic systems are located and contacting owners to request access to inspect the systems, if needed. In addition, FDOH will address any action items identified as a result of the BMAP Phase 2 Walk the WBID that relate to its jurisdiction.

In the BMAP watersheds, FDOH will work with COJ and JEA to develop an inspection program for dumpster areas and behind restaurants, convenience stores, and grocery stores. FDOT will assist in this effort to the extent that potential discharges impact its right-of-way. If food and grease are found on the ground, in stormwater conveyances, and/or running into creeks, FDOH will report this issue to the DBPR, FDACS, or COJ code enforcement. The field staff or supervisors will be trained by the DBPR to identify issues.

FDOH–Duval County's Walk the WBID follow-up actions are summarized in **Table 39**.

TABLE 39: FDOH–DUVAL COUNTY WALK THE WBID FOLLOW-UP ACTIONS

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
FDOH-116	Participate in TAT Calls and Efforts	Continue participation in the TAT coordination calls and other TAT efforts.	Ongoing	Unknown	FDOH	Ongoing
FDOH-117	Source Identification Follow Up	Assist the department in following up on source identification results that indicate a human source.	Ongoing	Unknown	FDOH	Ongoing
FDOH-118	Walk the WBID Follow Up	Address any action items identified as a result of the Phase 2 Walk the WBID.	Ongoing	Unknown	FDOH	Ongoing
FDOH-119	Dumpster Inspection Program	Develop an inspection program for dumpster areas and behind restaurants, convenience stores, and grocery stores.	Ongoing	Unknown	FDOH	Ongoing

3.3 FDOT

3.3.1 COUNTYWIDE PROGRAMS

Under Subsection 334.044(15), Florida Statutes, and Chapter 14-86, F.A.C., FDOT implements a Drainage Connection Program. The program does not issue water quality permits but requires the connecting entity to certify that the discharge is of acceptable water quality. Connecting entities are required to maintain the discharge of acceptable water quality for the duration of the FDOT Drainage Connection Program permit. If connecting entities fail to meet this requirement after sufficient warning by FDOT, they will be reported to the department, the SJRWMD, and, if applicable, to the local municipality; these entities regulate stormwater quality through state rules, ordinances, and codes.

In conjunction with its mission, FDOT constructs new drainage ponds and infrastructure to treat run-off from the roadways; in addition, it performs many routine preventative maintenance inspections and activities to its drainage facilities that intercept debris and pollution prior to discharging into state waters. FDOT also works with COJ on several efforts related to the MS4 permit. FDOT participates in the Potential Illicit Connection (PIC) Program in conjunction with COJ. FDOT has developed and implemented a training module for employees and contractors to become aware of the telltale signs of and potential environmental impacts of illicit connections to the Florida's waterways. FDOT has instructed staff and contract partners to be alert for illicit connections during routine maintenance activities, and initiates investigations of observances found in the rights-of-way. Those found to be true illicit connections and those located outside the rights-of-way are reported to the applicable municipality for further investigation and enforcement action. FDOT maintains a toll-free number to be used for reporting illicit connections.

3.3.2 WALK THE WBID FOLLOW UP

FDOT will continue its participation in the TAT coordination calls and other TAT efforts. In addition, FDOT will assist the department in following up on source identification results that indicate a human source in areas in FDOT rights-of-way. Furthermore, FDOT will look into any action items identified as a result of the 2015 Walk the WBID that relate to its jurisdiction.

In BMAP watersheds, FDOT will assist stakeholders existing and/or future inspection program for areas adjacent to existing FDOT outfall ditches and drainage infrastructure that potential discharges impact its right-of-way. If signs of illicit discharges are noted are found on the ground, in stormwater conveyances, and/or running into creeks, FDOT will report this issue to the DBPR, FDACS, COJ, or COJ Code Enforcement. The field staff, supervisors, and contract partners will be trained to identify, document, and elevate to the appropriate agency illicit connection/discharge issues.

FDOT's monitoring follow up actions are summarized in **Table 40**.

TABLE 40: FDOT WALK THE WBID FOLLOW-UP ACTIONS

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
FDOT- 139	Participate in TAT Calls and Efforts	Continue participation in the TAT coordination calls and other TAT efforts.	Ongoing	Unknown	FDOT	Ongoing
FDOT-140	Source Identification Follow Up	Assist the Department in following up on source identification results that indicate a human source.	Ongoing	Unknown	FDOT	Ongoing
FDOT-141	Walk the WBID Follow Up	Address any action items identified as a result of the Phase 2 Walk the WBID.	Ongoing	Unknown	FDOT	Ongoing
FDOT-142	Dumpster Inspection Program	Develop an inspection program for dumpster areas and behind restaurants, convenience stores, and grocery stores.	Ongoing	Unknown	FDOT	Ongoing

3.4 COJ

3.4.1 COUNTYWIDE PROGRAMS

COJ has established a monitoring plan to evaluate the effectiveness of the Stormwater Management Program and the associated pollutant reduction from MS4 systems to waters of the state. The monitoring plan is a requirement of Part V.B. of the COJ/FDOT National Pollutant Discharge Elimination System MS4 permit and supported by Title 40 of the Code of Federal Regulations, Part 122.26(d)(2)(iii). In addition to the routine monitoring, COJ Environmental Quality Division (EQD) is part of the TAT and conducts sampling to help identify potential sources of fecal coliform contamination.

COJ Public Works Department's Streets and Drainage Division is responsible for maintaining its stormwater conveyance systems in Jacksonville. In addition to routine maintenance activities, work orders for maintenance are generated from the Citizen Action Response Effort (CARE) database. COJ also implements the PIC Program. COJ EQD keeps a record of reported PICs in a database and a determination is made to identify where site visits are necessary. COJ inspectors conduct the site visits and talk to both the people who live on the site, as well as their neighbors, to verify the nature of the issue. If there is a known discharge, the inspector investigates in order to direct the resolution of the discharge to the appropriate entity (COJ, FDOH in Duval County, or the department). If necessary, a sample is collected to determine the nature of the discharge. COJ may assist the individual in remedying the situation and return to ensure that the connection has been removed.

Educational outreach is a vital part of the PIC Program. COJ EQD primarily provides this outreach by distributing materials to the public such as educational pamphlets and informational door hangers, and through a storm drain–stenciling program. COJ also has several continuing public service announcements to address pet waste management and OSTDS maintenance.

3.4.2 WALK THE WBID FOLLOW UP

COJ will continue its participation in the TAT coordination calls and other TAT efforts. COJ will assist the department in following up on source identification results that indicate a human source in areas with COJ MS4 infrastructure or otherwise under COJ's jurisdiction. COJ will also continue its BMAP monitoring, with adjustments made as needed, and will follow up on high results per the TAT protocol. In addition, COJ will investigate adding *E. coli* and *Enterococcus*, as appropriate, to its sample analyses. These new analyses will be phased in as funding allows.

In BMAP watersheds, COJ will work with JEA and FDOT to incorporate within existing programs the inspections for dumpster areas and behind restaurants, convenience stores, and grocery stores. If food and grease are found on the ground, in stormwater conveyances, and/or running into creeks, COJ will report this issue to the DBPR, FDACS, or COJ code enforcement. The COJ field crews will be trained by the DBPRto identify issues.

COJ will promote community awareness of the waterbodies' health through existing programs such as Keep Jacksonville Beautiful, and other environmental organizations. COJ will also organize community clean ups for the creeks. As part of these clean ups, COJ will inspect the banks of the waterbodies to look for illicit connections. The goal of the cleanups and inspections is to complete a total of 10 WBIDs by the end of the second five-year BMAP iteration. These 10 WBIDs will include waterbodies in BMAP I and BMAP II. COJ and the department will determine the priority for the BMAP I and BMAP II WBIDs. COJ will also explore the option of creating an artistic campaign to raise awareness of the trash thrown into the creeks, and will look for opportunities to phase out septic tanks in close proximity to the impaired waterbodies.

Stormwater flushing is important to the biology of the creek beds because poor flushing allows bacteria to regrow in the stream sediments at higher rates. COJ agrees to investigate stormwater projects in each BMAP WBID that may have diverted stormwater away from the tributaries. One example is the regional pond on Deer Creek where routine overflow is now directed to LSJR main stem and only discharges to Deer Creek in extreme storm events. COJ commits to looking for similar projects in the other BMAP WBIDs. COJ will also make efforts in future designs to keep creeks flowing, wherever possible, without causing flooding.

In addition, COJ will address any action items identified as a result of monitoring that relate to its jurisdiction.

COJ's Walk the WBID follow up actions are summarized in **Table 41**.

TABLE 41: COJ WALK THE WBID FOLLOW-UP ACTIONS

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
COJ-	Participate in TAT Calls and Efforts	Continue participation in the TAT coordination calls and other TAT efforts.	Ongoing	Unknown	COJ	Ongoing
COJ-	Source Identification Follow Up	Assist the department in following up on source identification results that indicate a human source.	Ongoing	Unknown	COJ	Ongoing
COJ-	Sample Analysis	Continue BMAP monitoring, with adjustments made as needed, and follow up on high results per the TAT protocol. Add E. coli and Enterococcus, as appropriate.	Ongoing	Unknown	COJ	Ongoing
COJ-	Dumpster Inspection Program	Develop an inspection program for dumpster areas and behind restaurants, convenience stores, and grocery stores.	Ongoing	Unknown	COJ	Ongoing
COJ-	Tributary Clean Up and Search for Illicit Connections	Promote community awareness of the waterbodies' health, organize annual community clean ups, and inspect for illicit connections. This will occur in two WBIDs per year.	Ongoing	Unknown	COJ	Ongoing
COJ-	Re-Route Stormwater	Investigate stormwater projects in each BMAP WBID that may have diverted stormwater away from the tributaries	Ongoing	Unknown	COJ	Ongoing
COJ-	Walk the WBID Follow Up	Address any action items identified as a result of the Phase 2 Walk the WBID.	Ongoing	Unknown	COJ	Ongoing

3.5 FDACS

3.5.1 AGRICULTURAL BMP IMPLEMENTATION

All agricultural nonpoint sources in the LSJR Tributaries II BMAP area are statutorily required either to implement FDACS-adopted BMPs or to conduct water quality monitoring prescribed by the department or St. Johns River Water Management District (SJRWMD) that demonstrates compliance with water quality standards (Paragraph 403.067[7][b], F.S.). If these pollutant sources do not either implement BMPs or conduct monitoring that demonstrates compliance with water quality standards, they may be subject to enforcement by the department or SJRWMD. Under Paragraph 403.067(7)(c), F.S., the filing of notice of intent to implement FDACS-adopted, department-verified BMPs in accordance with FDACS rule provides a presumption of compliance with state water quality standards.

A summary of agricultural land categories in the LSJR Tributaries II Basin, according to 2009 SJRWMD land use data, is provided in Table 42. Prominent agriculture land uses are pastures and row crops.

TABLE 42: AGRICULTURAL LAND USES IN THE LSJR TRIBUTARIES II BASIN

N/A = Not applicable

LAND USE CODE	CODE DESCRIPTION	TOTAL ACRES
2110	Improved Pasture	453.0
2120	Unimproved Pasture	209.6
2130	Woodland Pasture	52.1
2140	Row Crops	1.3
2150	Field Crops	244.8
2320	Poultry Feeding Operations	4.7
2410	Tree Nurseries	7.6
2430	Ornamentals	7.3
2510	Horse Farms	41.1
2520	Dairies	60.6
3300	Mixed Upland Nonforested	131.0
N/A	**TOTAL ACRES**	**1,213.1**

3.5.2 AGRICULTURAL BMPS

BMPs are individual or combined practices determined through research, field testing, and expert review to be the most effective and practicable means for improving water quality, taking into account economic and technological considerations. Primary regulatory authority for establishing agricultural BMPs is divided between FDACS' Florida Forest Service (silviculture BMP program), Division of Aquaculture (Aquaculture Certification Program), and the Office of Agricultural Water Policy (OAWP) (all other agricultural BMP programs).

FDACS' OAWP BMPs fall into two categories: structural and management. Structural BMPs involve the installation of structures or changes to the land, usually are more costly, and often require cost-share for them to be economically feasible. They include water control structures, fencing, and tailwater recovery systems, among other things. Management BMPs, such as nutrient and irrigation management, comprise the majority of the practices and often are not readily observable. Nutrient management addresses fertilizer type, amount, placement, and application timing and includes practices such as soil and tissue testing to determine crop nutrient needs, application methods, and setbacks from water resources. Irrigation management is the maintenance, scheduling, and overall efficiency rating of irrigation systems.

OAWP BMP materials and staff contact information are available online. Printed BMP manuals can be obtained in the local extension office at county agricultural extension centers or by contacting OAWP field staff.

3.5.2.1 BMP Enrollment

The land use data figures for agriculture in the BMAP area, the acreage associated with commodity types addressed by OAWP BMP manuals, and the acres enrolled in OAWP BMP programs are summarized in **Table 43**. All agricultural non-point sources in the BMAP area are statutorily required either to implement FDACS-adopted BMPs or to conduct water quality monitoring that demonstrates compliance with state water quality standards. Current enrollment in OAWP BMPs as of June 30, 2015, is approximately 5.5 acres (see Figure 32). This operation is enrolled in the specialty fruit and nut BMP manual. According to the 2009 SJRWMD land use data, 1,213.1 acres of agricultural lands are located in the LSJR Tributaries II Basin. Some of these lands may be eligible for enrollment in the cow/calf manual, vegetable/agronomic crops manual, conservation plan rule, nurseries manual, or equine manual. The dairy acreage may be eligible for enrollment once the FDACS dairy manual is adopted in late 2015. However, in 2013 OAWP worked with the department to ensure that agricultural landowners know of their statutory responsibility to implement BMPs in the LSJR Main Stem BMAP area. As part of this effort, OAWP and the department worked extensively to review aerials to determine whether the land use was correct as well as to enroll all applicable agricultural producers in the basin under the OAWP BMP programs. Many of the properties were determined to be noncommercial agriculture or out of production; therefore, the OAWP believes few, if any, additional enrollments will be made in this area. For example, upon inspection of the land use classified as poultry feeding operations, OAWP determined that the area houses old sheds and no signs of a former or current poultry feeding operation. Over the next five years, OAWP will work to identify whether these additional lands should be enrolled in the related FDACS' BMP programs.

In addition, not all of the acreage listed as agriculture in **Table 43** will be included in enrollment figures, because the Notices of Intent (NOIs) only document the estimated total number of acres on which applicable BMPs are implemented, not the entire land use acreage mapped as agriculture. Land use data can contain nonproduction acres (such as buildings, parking lots, and fallow acres) that will not be counted on the NOIs submitted to OAWP. There also may be acreage that is not appropriate for enrollment in OAWP BMPs, such as lands not in commercial production (defined as operations conducted as a business).

TABLE 43: AGRICULTURAL ACREAGE AND BMP ENROLLMENT FOR THE LSJR TRIBUTARIES II BASIN

N/A = Not applicable
[1] Includes land use codes 2110, 2120, 2130, and 3300.
[2] Includes 2140 and 2150.
[3] Includes 2410 and 2430.
[4] The dairy BMP manual is expected to be adopted by the end of 2015.

2009 SJRWMD Land Use	2009 Acres	Related FDACS BMP Programs	Acreage Enrolled	Related NOIs
Pasture/Rangeland[1]	845.7	Cow/Calf	0	0
Row/Field/Mixed Crops[2]	246.1	Vegetable/Agronomic Crops	0	0
Poultry Feeding Operations	4.7	Conservation Plan Rule	0	0
Nurseries[3]	14.9	Nurseries; Specialty Fruit and Nut	5.5	1
Horse Farms	41.1	Equine	0	0
Dairies	60.6	Conservation Plan Rule[4]	0	0
Total	**1,213.1**	**N/A**	**5.5**	**1**

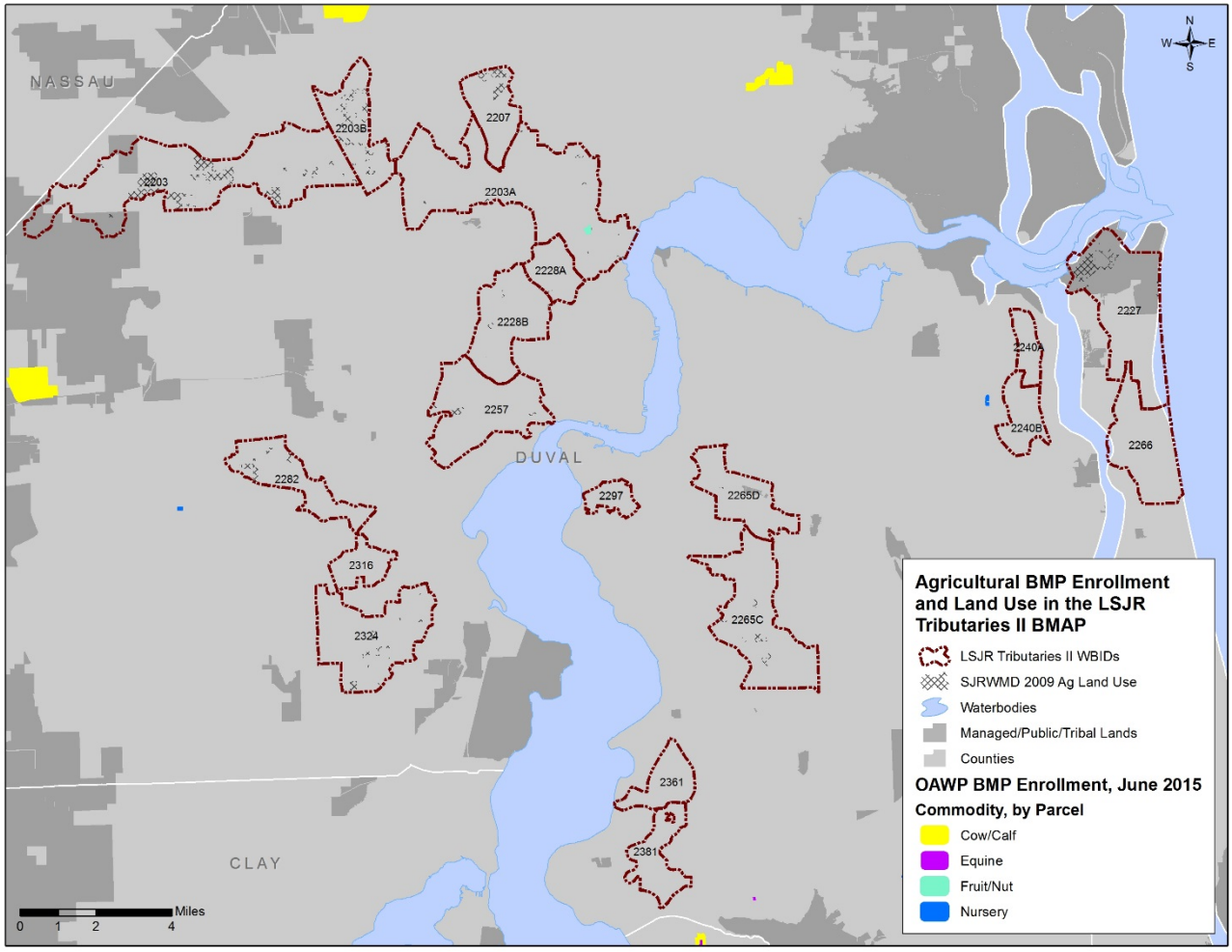

FIGURE 32: OAWP BMP ENROLLMENT IN THE LSJR TRIBUTARIES AS OF JUNE 30, 2015

3.5.2.2 FDACS OAWP Role in BMP Implementation and Follow-Up

OAWP works with producers to submit NOIs to implement the BMPs appropriate for their operations. OAWP staff and contractors will continue to identify existing growers, to the greatest extent possible, through grower associations, information on county agricultural exemptions, field staff knowledge, and other means. OAWP will attempt to ensure that all producers are aware of their statutory obligation to implement BMPs, through letters, e-mail, workshops, brochures, and/or other means. Staff/contractors will assist producers in selecting the appropriate BMPs, with emphasis on nutrient management, irrigation management, sediment/erosion control, stormwater management, and record keeping. BMPs that address these topics often also address reducing the potential for fecal coliform loading to streams.

3.5.3 OAWP IMPLEMENTATION ASSURANCE PROGRAM

The OAWP formally established its Implementation Assurance (IA) Program in 2005 in the Suwannee River Basin as part of the multi-agency/local stakeholder Suwannee River Partnership. In 2007, OAWP initiated the IA Program in the Lake Okeechobee Watershed and launched a standardized follow-up program for the remaining areas of the state in 2013, beginning with the Ridge Citrus and Indian River Citrus BMPs. Because of program-specific needs, the follow up process for each of these three components was different. In early 2014, the OAWP began to streamline the IA Program to ensure consistency statewide and across commodities and BMP manuals. This effort resulted in a single IA site-visit form, which is currently used by OAWP staff.

The current IA Program consists of two key components—mail-out surveys and site visits. Mail-out surveys are developed by OAWP staff, in conjunction with commodity experts. This component of the IA Program was borne out of the recognition that OAWP staff resources are limited; therefore, visits to each of the enrolled producers across the state were not possible in a short/contemporary time frame. All enrolled producers are mailed these surveys and are asked to fill out the surveys and return them to OAWP staff.

Site visits, the second component, are conducted by OAWP field staff and technicians as workload allows. For the visits, field staff and technicians use a standard form (non-commodity or BMP-manual specific) that was developed in 2014. This site-visit form focuses on nutrient-management, irrigation-management, and water-resource protection BMPs that are common to all of the adopted BMP manuals. The paper forms are submitted to OAWP staff and compiled into a spreadsheet, and the data are reported annually in reports such as this one. From 2007–2014, OAWP conducted over 1,200 site visits. However, it is difficult to compare data collected prior to implementation of the single IA site-visit form

developed in 2014 because of regional differences (e.g., different forms and information asked) in administration of the IA Program.

In late 2014, the OAWP commenced efforts to revise and restructure its current IA Program, and these efforts are ongoing. The OAWP expects to increase its site visits in the future.

3.5.3.1 Beyond BMPs

Under the Florida Watershed Restoration Act, when the department adopts a BMAP that includes agriculture, it is the agricultural producers' responsibility to implement the FDACS-adopted BMPs applicable to them. If additional measures, such as regional treatment projects, are needed, FDACS will work with the department, SJRWMD, and other appropriate entities to identify appropriate and feasible options.

SECTION 4: CRAIG CREEK (WBID 2297)

4.1 JEA ACTIVITIES IN THE CRAIG CREEK WATERSHED

JEA's activities in the Craig Creek watershed are shown in **Table 44**.

TABLE 44: JEA ACTIVITIES IN THE CRAIG CREEK WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
JEA-198	Open Cut–Removal and Replacement	Replace failing/leaking infrastructure	Ongoing	Not applicable	JEA	Ongoing
JEA-214	Air Release Valve (ARV) Inspection and Rehab	ARV inspection and rehab	Ongoing	Not applicable	JEA	Ongoing

4.2 FDOH–DUVAL COUNTY ACTIVITIES IN THE CRAIG CREEK WATERSHED

The programs and activities FDOH conducts in the Craig Creek watershed are shown in **Table 45**.

TABLE 45: FDOH–DUVAL COUNTY ACTIVITIES IN THE CRAIG CREEK WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
FDOH-107	Intensive Inspection Program	Carry out intensive geospecific inspections in selected WBIDs based on repair permit applications, water quality information, and site conditions	3 re-inspections performed in WBID	$300	FDOH/ department/ Environmental Protection Agency (EPA) Section 319 Nonpoint Source Management Program Implementation Grant	Completed

4.3 COJ ACTIVITIES IN THE CRAIG CREEK WATERSHED

COJ's efforts in the Craig Creek watershed are shown in **Table 46**.

TABLE 46: COJ ACTIVITIES IN THE CRAIG CREEK WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	TOTAL COST	FUNDING SOURCE	PROJECT STATUS
COJ-308	Harbor Cove/Inwood Terrace	Drainage improvements	Unknown	$1,342	COJ	Completed
COJ-309	Kingswood/Berwick Road	Road drainage design	Unknown	$1,102	COJ	Completed
COJ-310	Kingswood/Berwick Road	Road drainage construction	Unknown	$23,060	COJ	Completed
COJ-311	Berwick Road	Drainage improvements	Unknown	$25,149	COJ	Completed
COJ-312	Phillips Highway Pond	Wet detention pond	Unknown	$1,100,000	COJ	Planned
COJ-313	Pine Forest	Wet detention pond	Unknown	$5,882,478	COJ	Construction
COJ-314	Inwood Terrace	Drainage improvements	Unknown	$650,000	COJ	Completed
COJ-346	1633 Berwick	Road drainage design	Unknown	$48,222	COJ	Completed
COJ-347	Ditch Hazardous Contaminated	All maintenance activities presented were completed in response to CARE requests.	Ongoing	Unknown	COJ	Ongoing
COJ-374	1025 Oriental Gardens	Construction	Unknown	$11,457	COJ	Construction

Project Number	Project Name	Project Description	Level of Effort	Total Cost	Funding Source	Project Status
COJ-405	Stormwater Action Team Proactive Maintenance Program	Roadside and outfall ditch regrades, vegetation removal, illegal dumping clean up, and illicit discharge source removal	Ongoing	Unknown	COJ	Ongoing
COJ-406	Outfall Ditch Vegetation Management	Herbicide spraying and litter removal	Ongoing	Unknown	COJ	Ongoing

4.4 FDOT Activities in the Craig Creek Watershed

Table 47 lists FDOT's activities in the Craig Creek watershed.

Table 47: FDOT Activities in the Craig Creek Watershed

Project Number	Project Name	Project Description	Level of Effort	Estimated Cost	Funding Source	Project Status
FDOT-105	Source Identification Sampling	Re-sampling effort conducted when high levels of fecal coliform bacteria are noted to attempt to identify sources	0 re-samplings were performed	Included in FDOT-3	FDOT/ COJ	Ongoing

SECTION 5: MCCOY CREEK (WBID 2257)

5.1 JEA ACTIVITIES IN THE MCCOY CREEK WATERSHED

JEA's activities in the McCoy Creek watershed are shown in **Table 48**.

TABLE 48: JEA ACTIVITIES IN THE MCCOY CREEK WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS

Insert table contents!!

5.2 FDOH–DUVAL COUNTY ACTIVITIES IN THE MCCOY CREEK WATERSHED

FDOH programs and activities conducted in the McCoy Creek watershed are shown in **Table 49**.

TABLE 49: FDOH–DUVAL COUNTY ACTIVITIES IN THE MCCOY CREEK WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
FDOH-108	Intensive Inspection Program	Carry out intensive geospecific inspections in selected WBIDs based on repair permit applications, water quality information, and site conditions	No inspections have been performed in this WBID	Not applicable	FDOH/ department/ EPA Section 319 Nonpoint Source Management Program Implementation Grant	Completed

5.3 COJ ACTIVITIES IN THE MCCOY CREEK WATERSHED

COJ's efforts in the McCoy Creek watershed are shown in **Table 50**.

TABLE 50: COJ ACTIVITIES IN THE MCCOY CREEK WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	TOTAL COST	FUNDING SOURCE	PROJECT STATUS
COJ-316	McCoy Creek Blvd	Channel Improvements	Unknown	$2,800,000	COJ	Planned
COJ-317	Newtown Drainage Improvements	Wet Detention Pond	Unknown	$5,791,000	COJ	Planned
COJ-318	Superior and Carter	Drainage Improvements	Unknown	$40,583	COJ	Completed
COJ-348	Orchard Street	Outfall improvement	Unknown	$9,436	COJ	Completed
COJ-349	2980 Ernest Street	Drainage improvements	Unknown	$20,662	COJ	Completed
COJ-375	Cecelia St	Design	Unknown	$31,209	COJ	Design
COJ-376	Nolan St @ Shearer Av	Design	Unknown	$29,622	COJ	Design
COJ-377	Stockton St @ Edison Av	Storm sewer	Storm sewer	$13,713	COJ	Completed
COJ-378	Baldwin St	Storm sewer	Storm sewer	$7,055	COJ	Completed
COJ-379	McCoys Creek @ Stockton St	Storm sewer	Storm sewer	$7,123	COJ	Completed
COJ-380	Edison Av @ Lime Av	Storm sewer	Storm sewer	$27,772	COJ	Completed
COJ-407	Stormwater Action Team Proactive Maintenance Program	Roadside and outfall ditch regrades, vegetation removal, illegal dumping clean up, and illicit discharge source removal	Ongoing	Unknown	COJ	Ongoing
COJ-408	Outfall Ditch Vegetation Management	Herbicide spraying and litter removal	Ongoing	Unknown	COJ	Ongoing

SECTION 6: WILLIAMSON CREEK (WBID 2316)

6.1 JEA ACTIVITIES IN THE WILLIAMSON CREEK WATERSHED

JEA's activities in the Williamson Creek watershed are shown in **Table 51**.

TABLE 51: JEA ACTIVITIES IN THE WILLIAMSON CREEK WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
JEA-215	Open Cut–Removal and Replacement	Replace failing/leaking infrastructure	Ongoing	Not applicable	JEA	Ongoing

6.2 FDOH–DUVAL COUNTY ACTIVITIES IN THE WILLIAMSON CREEK WATERSHED

The programs and activities FDOH conducts in the Williamson Creek watershed are shown in **Table 52**.

TABLE 52: FDOH–DUVAL COUNTY ACTIVITIES IN THE WILLIAMSON CREEK WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
FDOH-106	Intensive Inspection Program	Carry out intensive geospecific inspections in selected WBIDs based on repair permit applications, water quality information, and site conditions	Approximately 113 inspections performed in WBID	$10,700	FDOH/ department/ EPA Section 319 Nonpoint Source Management Program Implementation grant	Completed

6.3 COJ ACTIVITIES IN THE WILLIAMSON CREEK WATERSHED

COJ's efforts in the Williamson Creek watershed are shown in **Table 53.**

TABLE 53: COJ ACTIVITIES IN THE WILLIAMSON CREEK WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	TOTAL COST	FUNDING SOURCE	PROJECT STATUS
COJ-320	Hugh Edwards Drainage	Wet Detention pond	Unknown	Unknown	COJ	Completed
COJ-321	6700 Jack Horner Lane	Drainage improvement	Unknown	$48,853	COJ	Completed
COJ-350	Wilson Boulevard	Culvert replacement	Unknown	$5,521	COJ	Completed
COJ-351	6700 Jack Horner Lane	Drainage improvement	Unknown	$48,853	COJ	Completed
COJ-352	Source Identification Sampling	Conduct source identification sampling when high levels of fecal coliform bacteria are noted	0	$0	COJ	Ongoing
COJ-381	Ledbury Drive South at Anvers Boulevard	Storm sewer	Storm sewer	$4,328	COJ	Completed
COJ-409	Stormwater Action Team Proactive Maintenance Program	Roadside and outfall ditch regrades, vegetation removal, illegal dumping clean up, and illicit discharge source removal	12,970 feet	$27,886	COJ	Ongoing
COJ-410	Outfall Ditch Vegetation Management	Herbicide spraying and litter removal	4,960 feet	$2,936	COJ	Ongoing

6.4 FDOT ACTIVITIES IN THE WILLIAMSON CREEK WATERSHED

Table 54 lists FDOT's activities in the Williamson Creek watershed.

TABLE 54: FDOT ACTIVITIES IN THE WILLIAMSON CREEK WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
FDOT-106	Source Identification Sampling	Resampling conducted when high levels of fecal coliform bacteria are noted to attempt to identify sources	Ongoing	Included in FDOT-18	FDOT/ COJ	Ongoing
FDOT-107	Stormwater Management Systems	Construct wet detention pond at Lane Avenue and at Wilson Avenue	85 acres, wet pond	Unknown	FDOT	Completed
FDOT-121	PIC Program	Identify and remove illicit connections if found to be truly illicit	Ongoing	Included in FDOT-16	FDOT/ COJ	Ongoing
FDOT-134	State Road (SR) 208 (Wilson Blvd) Interchange Improvement	Construct stormwater management systems to treat areas of improvement	Construction Ongoing	Total Project Cost $3,340,000	FDOT	Construction ongoing. To be completed June 2015

SECTION 7: FISHING CREEK (WBID 2324)

7.1 JEA ACTIVITIES IN THE FISHING CREEK WATERSHED

JEA's activities in the Fishing Creek watershed are shown in **Table 55**.

TABLE 55: JEA ACTIVITIES IN THE FISHING CREEK WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
JEA-209	High Density Polyethylene (HDPE) Pipe Cleaning– Contractor	Clean existing HDPE pipes to avoid blockages	639 feet of HDPE cleaned in 2014	Not applicable	JEA	Ongoing

7.2 COJ ACTIVITIES IN THE FISHING CREEK WATERSHED

COJ's efforts in the Fishing Creek watershed are shown in **Table 56**.

TABLE 56: COJ ACTIVITIES IN THE FISHING CREEK WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	TOTAL COST	FUNDING SOURCE	PROJECT STATUS
COJ-323	Regional Stormwater Facility – Master Stormwater Management Plan (MSMP)	Regional stormwater facility w/ managed aquatic plant systems + channel lining	Unknown	$1,812,527	COJ	Planned
COJ-324	4922 Ricker Road	Drainage improvement	Unknown	$77,660	COJ	Completed
COJ-325	7560 Melvin Road	Drainage improvement	Unknown	$51,991	COJ	Completed
COJ-326	Antoinette Lane	Outfall repair	Unknown	$149,071	COJ	Completed
COJ-327	BMAP Monitoring	COJ EQD is responsible for 4 sites (2 sampled monthly and 2 sampled quarterly), began 12/2010	Ongoing	Unknown	COJ	Ongoing
COJ-353	Timawatha Avenue	Drainage improvement	Unknown	$27,837	COJ	Completed
COJ-354	Tampico Road	Drainage improvement	Unknown	$25,662	COJ	Completed
COJ-382	6985 Wheat Road	Cave in	Cave in	$5,306	COJ	Construction
COJ-383	6211 Firestone Road	Storm sewer	Storm sewer	$42,318	COJ	Construction
COJ-384	4631 Benlocke Road	Storm sewer	Storm sewer	$25,635	COJ	Construction
COJ-385	6562 Albicore Road	Storm sewer	Storm sewer	$1,973	COJ	Completed
COJ-386	5134 Ricker	Storm sewer	Storm sewer	$7,158	COJ	Completed
COJ-411	Stormwater Action Team Proactive Maintenance Program	Roadside and outfall ditch regrades, vegetation removal, illegal dumping clean up, and illicit discharge source removal	Ongoing	Unknown	COJ	Ongoing
COJ-412	Outfall Ditch Vegetation Management	Herbicide spraying and litter removal	Ongoing	Unknown	COJ	Ongoing

7.3 FDOT ACTIVITIES IN THE FISHING CREEK WATERSHED

Table 57 lists FDOT's activities in the Fishing Creek watershed.

TABLE 57: FDOT ACTIVITIES IN THE FISHING CREEK WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
FDOT-108	BMAP Sampling	Routine BMAP II monitoring began December 2010	Ongoing	Included in FDOT-28	FDOT/ COJ	Ongoing

SECTION 8: DEEP BOTTOM CREEK (WBID 2361)

8.1 JEA ACTIVITIES IN THE DEEP BOTTOM CREEK WATERSHED

JEA's activities in the Deep Bottom Creek watershed are shown in **Table 58**.

TABLE 58: JEA ACTIVITIES IN THE DEEP BOTTOM CREEK WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
JEA-199	Open Cut–Removal and Replacement	Replace failing/leaking infrastructure	Ongoing	Not applicable	JEA	Ongoing
JEA-200	Pump Station Class I/II Rebuilding	Repair or replace components of existing pump stations	Ongoing	Not applicable	JEA	Ongoing
JEA-201	Pipe Cleaning	Clean existing pipes to avoid blockages	Ongoing	Not applicable	JEA	Ongoing
JEA-202	Pipe Television (TV) Inspection	Inspect existing infrastructure through use of closed-circuit television (CCTV) system	Ongoing	Not applicable	JEA	Ongoing

8.2 FDOH–DUVAL COUNTY ACTIVITIES IN THE DEEP BOTTOM CREEK WATERSHED

The programs and activities FDOH conducts in the Deep Bottom Creek watershed are shown in **Table 59**.

TABLE 59: FDOH–DUVAL COUNTY ACTIVITIES IN THE DEEP BOTTOM CREEK WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
FDOH-109	Intensive Inspection Program	Carry out intensive geospecific inspections in selected WBIDs based on repair permit applications, water quality information, and site conditions	Approximately 466 inspections and 63 re-inspections performed in WBID	$79,350	FDOH/ department/ EPA Section 319 Nonpoint Source Management Program Implementation Grant	Completed

8.3 COJ Activities in the Deep Bottom Creek Watershed

COJ's efforts in the Deep Bottom Creek watershed are shown in **Table 60**.

Table 60: COJ Activities in the Deep Bottom Creek Watershed

Project Number	Project Name	Project Description	Level of Effort	Total Cost	Funding Source	Project Status
COJ-328	Pond Near Senior Center – MSMP	Wet Detention Pond	Unknown	$2,100,000	COJ	Planned
COJ-329	BMAP Monitoring	COJ EQD is responsible for 3 sites (2 sampled monthly, 1 sampled quarterly); began 12/2010	Ongoing	Unknown	COJ	Ongoing

8.4 FDOT Activities in the Deep Bottom Creek Watershed

Table 61 lists FDOT's activities in the Deep Bottom Creek watershed.

Table 61: FDOT Activities in the Deep Bottom Creek Watershed

Project Number	Project Name	Project Description	Level of Effort	Estimated Cost	Funding Source	Project Status
FDOT-109	BMAP Sampling	Routine BMAP II monitoring began December 2010	Ongoing	Included FDOT-35	FDOT/ COJ	Ongoing
FDOT-110	Stormwater Management Systems	Construct wet detention pond at San Jose Boulevard	145 acres, wet pond	Unknown	FDOT	Completed
FDOT-122	PIC Program	Identify and remove illicit connections if found to be truly illicit	Ongoing	Included in FDOT-34	FDOT/ COJ	Ongoing
FDOT-135	I-295 Managed Lanes	Construct stormwater management systems to treat areas of improvement	Construction Ongoing	Total Project Cost $88,950,000	FDOT	Construction ongoing. To be completed December 2016

SECTION 9: MONCRIEF CREEK (WBIDS 2228A AND 2228B)

9.1 JEA ACTIVITIES IN THE MONCRIEF CREEK WATERSHED

JEA's activities in the Moncrief Creek watershed are shown in **Table 62**.

TABLE 62: JEA ACTIVITIES IN THE MONCRIEF CREEK WATERSHED

WBID TYPE	PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
Freshwater	JEA-223	Open Cut–Removal and Replacement	Replace failing/leaking infrastructure	Ongoing	Not applicable	JEA	Ongoing
Freshwater	JEA-224	Pump Station Class I/II Rebuilding	Repair or replace components of existing pump stations	Ongoing	Not applicable	JEA	Ongoing
Marine	JEA-225	Open Cut–Removal and Replacement	Replace failing/leaking infrastructure	Ongoing	Not applicable	JEA	Ongoing
Marine	JEA-226	Pump Station Class I/II Rebuilding	Repair or replace components of existing pump stations	Ongoing	Not applicable	JEA	Ongoing

9.2 COJ ACTIVITIES IN THE MONCRIEF CREEK WATERSHED

COJ's efforts in the Moncrief Creek watershed are shown in **Table 63**.

TABLE 63: COJ ACTIVITIES IN THE MONCRIEF CREEK WATERSHED

WBID TYPE	PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	TOTAL COST	FUNDING SOURCE	PROJECT STATUS
??	COJ-330	Regional Stormwater Facility – MSMP	Regional stormwater facility + bank	Unknown	$6,700,000	COJ	Planned
??	COJ-331	Chestnut Drive	Drainage improvements	Unknown	$23,350	COJ	Completed
??	COJ-373	Hazardous Contaminated Ditch	All maintenance activities presented were completed in response to CARE requests.	Ongoing	Unknown	COJ	Ongoing
??	COJ-387	Helena Street	Storm sewer	Storm sewer	$12,557	COJ	Completed
??	COJ-388	Chestnut Drive	Construction	Unknown	$121,439	COJ	Construction
??	COJ-389	University Street	Pond Cease/Desist	Unknown	$15,999	COJ	Completed
??	COJ-413	Stormwater Action Team Proactive Maintenance Program	Roadside and outfall ditch regrades, vegetation removal, illegal dumping clean up, and illicit discharge source removal	Ongoing	Unknown	COJ	Ongoing
??	COJ-414	Outfall Ditch Vegetation Management	Herbicide spraying and litter removal	Ongoing	Unknown	COJ	Ongoing

SECTION 10: BLOCKHOUSE CREEK (WBID 2207)

10.1 COJ ACTIVITIES IN THE BLOCKHOUSE CREEK WATERSHED

COJ's efforts in the Blockhouse Creek watershed are shown in **Table 64**.

TABLE 64: COJ ACTIVITIES IN THE BLOCKHOUSE CREEK WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	TOTAL COST	FUNDING SOURCE	PROJECT STATUS
COJ-415	Stormwater Action Team Proactive Maintenance Program	Roadside and outfall ditch regrades, vegetation removal, illegal dumping clean up, and illicit discharge source removal	Ongoing	Unknown	COJ	Ongoing
COJ-416	Outfall Ditch Vegetation Management	Herbicide spraying and litter removal	Ongoing	Unknown	COJ	Ongoing

10.2 FDOT ACTIVITIES IN THE BLOCKHOUSE CREEK WATERSHED

Table 65 lists FDOT's activities in the Blockhouse Creek watershed.

TABLE 65: FDOT ACTIVITIES IN THE BLOCKHOUSE CREEK WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
FDOT-111	Source Identification Sampling	Resampling effort conducted when high levels of fecal coliform bacteria are noted to attempt to identify sources	Ongoing	FDOT-52	FDOT/ COJ	Ongoing
FDOT-123	PIC Program	Identify and remove illicit connections if found to be truly illicit	Ongoing	Included in FDOT-50	FDOT/ COJ	Ongoing

SECTION 11: HOPKINS CREEK (WBID 2266)

11.1 COJ ACTIVITIES IN THE HOPKINS CREEK WATERSHED

Additional details about the COJ projects are included in **Appendix A**.

TABLE 66: COJ ACTIVITIES IN THE HOPKINS CREEK WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	TOTAL COST	FUNDING SOURCE	PROJECT STATUS
COJ-333	BMAP Monitoring	COJ EQD is responsible for 3 sites, one for Atlantic Beach and one for Neptune Beach (2 sampled monthly and 1 sampled quarterly), began 12/2010	Ongoing	Unknown	COJ, Atlantic Beach, Neptune Beach	Ongoing
COJ-334	Source Identification Sampling	Re-sampling effort conducted when high levels of fecal coliform bacteria are noted to attempt to identify sources.	Ongoing	Unknown	COJ	Ongoing

11.2 FDOT ACTIVITIES IN THE HOPKINS CREEK WATERSHED

Table 67 lists FDOT's activities in the Hopkins Creek watershed.

TABLE 67: FDOT ACTIVITIES IN THE HOPKINS CREEK WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
FDOT-112	BMAP Sampling	Routine BMAP II monitoring began December 2010	Ongoing	Included in FDOT-57	FDOT/ COJ	Ongoing
FDOT-113	Source Identification Sampling	Resampling effort conducted when high levels of fecal coliform bacteria are noted to attempt to identify sources	Ongoing	Included in FDOT-57	FDOT/ COJ	Ongoing

11.3 ATLANTIC BEACH ACTIVITIES IN THE HOPKINS CREEK WATERSHED

The city of Atlantic Beach's activities in the Hopkins Creek watershed are listed in **Table 68**.

TABLE 68: ATLANTIC BEACH ACTIVITIES IN THE HOPKINS CREEK WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
AB-134	Pump Station Inspections and Maintenance	Lift Station E Upgrades (799 Mayport Road); new emergency generator, new high efficiency motors	1 lift station	$49,482	Atlantic Beach	Completed
AB-142	Sewer Line Upgrades	Rehabilitate sanitary sewer mains in Donner subdivision (portions of Jackson Road, Stanley Road, Francis Avenue, and Jordan Road) using cured in place pipe CIPP	3,781 LF	$146,604	Community Development Block Grant – Disaster Mitigation	Completed
AB-143	Sewer Line Upgrades	Rehabilitate sanitary sewer mains on Plaza Road from manholes 76-77 using CIPP	206 LF	$7,800	Atlantic Beach	Completed
AB-144	Manhole Inspections and Rehabilitation	Rehabilitate manholes in Donner Subdivision (on Jackson Road, Stanley Road, Francis Avenue, and Jordan Road) using Spectrashield	17 manholes	$27,208	Community Development Block Grant – Disaster Mitigation	Completed

Project Number	Project Name	Project Description	Level of Effort	Estimated Cost	Funding Source	Project Status
AB-145	Manhole Inspections and Rehabilitation	Rehabilitate manholes 76 and 77 on Plaza Road using Spectrashield	2 Manholes	$1,560	Atlantic Beach	Completed
AB-146	SSO Investigations – Preventive	Clean and televise sanitary sewer mains near Donner Road lift station and manhole cleaning	300 LF and 3 manholes	$1,300	Atlantic Beach	Completed
AB-160	Effluent Gravity Outfall Inspection and Maintenance	Perform cleaning and TV inspection of 21" gravity outfall on Donner Rd. Perform needed repairs if identified and root-cutting.	Approx 5,500+/- LF (1,600+/- LF in watershed)	$50,000	Atlantic Beach	In Progress
AB-161	Vac Truck Cleaning of Stormwater Pipers and Sanitary Sewer Clogs	Purchase of Vac-Con truck for "in-house" cleaning of storm sewers and sanitary sewer facilities to more effectively prevent stormwater backups and SSOs.	Improved maintenance of total system	$330,000	Atlantic Beach	Planned

11.4 Jacksonville Beach Activities in the Hopkins Creek Watershed

The city of Jacksonville Beach's efforts in the Hopkins Creek watershed are listed in **Table 69**.

Table 69: Jacksonville Beach Activities in the Hopkins Creek Watershed

Project Number	Project Name	Project Description	Level of Effort	Estimated Cost	Funding Source	Project Status
JB-61	Ocean Forest Drainage Imps	Ocean Forest Area	2,927 LF of 15"-36" Storm Sewer Pipe, Inlets, Manholes, and Related Work	$1,000,000	Jacksonville Beach	Planned
JB-63	4th St. N. Sewer Imps.	4th St. N. from 13th to 18th Ave. N.	Replacement of 1,800 LF of 8"-12" Sewer Main, Manholes, Services and Related Work	$566,000	Jacksonville Beach	Planned
JB-64	Effluent Outfall Modifications	Repairs to Effluent Outfall at the St. Johns River	Repairs to Effluent Outfall at the St. Johns River (JB portion)	$170,000	Jacksonville Beach	Planned
JB-65	Lift Station No. 7 Imps.	3rd St. and 18th Ave. N.	Relocation and Construction of New LS No. 7	$945,000	Jacksonville Beach	Planned
JB-66	Lift Station No. 20 Abandonment	4th St. and 15th Ave. N.	Abandonment of LS No. 20. Gravity flow to LS No. 7	$500,000	Jacksonville Beach	Planned
JB-67	Lift Station No.8 Abandonment	8th St. and 18th Ave. N.	Abandonment of LS No. 8. Gravity flow to LS No. 7	550000	Jacksonville Beach	Planned

Project Number	Project Name	Project Description	Level of Effort	Estimated Cost	Funding Source	Project Status
JB-60	2nd Street North Sewer Main and Related Imps.	2nd St. N. from 14th Ave. N. to 20th Ave. N. and from 1st St. to 3rd St. N.	4,840 LF of New and Rehabilitated 8"-12"Sewer Main, Services, Manholes, and Related Work	$1,843,083	EPA Grant//Jacksonville Beach	Completed
JB-62	Sewer Manhole Rehabilitation	Hopkins Creek Watershed	Rehabilitation of approximately 45 Sewer Manholes	$140,000	Jacksonville Beach	Completed/Ongoing

11.5 Neptune Beach Activities in the Hopkins Creek Watershed

The city of Neptune Beach's activities in the Hopkins Creek watershed are listed in **Table 70**.

Table 70: Neptune Beach Activities in the Hopkins Creek Watershed

Project Number	Project Name	Project Description	Level of Effort	Estimated Cost	Funding Source	Project Status
NB-44	Gravity Sanitary Sewer Point Repair Behind Fletcher High School	Repair offset 8" gravity sanitary sewer line behind Fletcher High School to facilitate lining the main. The line was near an adjacent ditch.	15 LF of pipe replaced	$15,907	Neptune Beach	Completed
NB-45	Gravity Sanitary Sewer Line Rehabilitation Behind Fletcher High School	Lined the 8" gravity sewer main behind Fletcher High School adjacent to a ditch with CIPP.	407 LF	$14,320	Neptune Beach	Completed
NB-46	Gravity Sanitary Sewer Line Rehabilitation in Bal Harbour Subdivision	Lined a portion of the 8" gravity main in Bal Harbour subdivision.	890 LF	$24,920	Neptune Beach	Completed
NB-47	Storm Sewer Rehabilitation in Driftwood Subdivision	Lined a portion of storm sewer in the Driftwood that was found to have offset joints with CIPP.	41 LF of 36" & 305 LF of 24"	$36,916.20	Neptune Beach	Completed
NB-48	Storm Sewer Repair on 5th Street Across from Fletcher High School	Replace 30 linear feet of existing storm sewer that crossed 5th Street discharging into major conveyance ditch.	30 LF	$1,059	Neptune Beach	Completed
NB-49	Culvert Replacement on South Street	30 linear feet of culvert replacement on South Street.	30 LF	$702	Neptune Beach	Completed
NB-50	Sanitary Sewer Rehabilitation on Forest Avenue	Rebuild a sanitary sewer manhole adjacent to Hopkins Creek.	1 Manhole	$13,205	Neptune Beach	Completed

Project Number	Project Name	Project Description	Level of Effort	Estimated Cost	Funding Source	Project Status
NB-52	Gravity Sanitary Sewer Point Repair Behind Fletcher High School	Repair offset 8" gravity sanitary sewer line behind Fletcher High School to facilitate lining the main. The line was near an adjacent ditch.	15 LF of pipe replaced	$15,907	Neptune Beach	Completed
NB-53	Gravity Sanitary Sewer Line Rehabilitation Behind Fletcher High School	Lined the 8" gravity sewer main behind Fletcher High School adjacent to a ditch with CIPP.	407 LF	$14,320	Neptune Beach	Completed
NB-54	Gravity Sanitary Sewer Line Rehabilitation in Bal Harbour Subdivision	Lined a portion of the 8" gravity main in Bal Harbour subdivision.	890 LF	$24,920	Neptune Beach	Completed
NB-55	Storm Sewer Rehabilitation in Driftwood Subdivision	Lined a portion of storm sewer in the Driftwood that was found to have offset joints with CIPP.	41 LF of 36" & 305 LF of 24"	$36,916.20	Neptune Beach	Completed
NB-56	Storm Sewer Repair on 5th Street Across from Fletcher High School	Replace 30 linear feet of existing storm sewer that crossed 5th Street discharging into major conveyance ditch.	30 LF	$1,059	Neptune Beach	Completed
NB-57	Culvert Replacement on South Street	30 linear feet of culvert replacement on South Street.	30 LF	$702	Neptune Beach	Completed
NB-58	Sanitary Sewer Rehabilitation on Forest Avenue	Rebuild a sanitary sewer manhole adjacent to Hopkins Creek.	1 Manhole	$13,205	Neptune Beach	Completed
NB-51	Bal Harbour Sanitary Sewer Improvements	Approximately 5,000 linear feet of sewer rehabilitation and replacement in the Bal Harbour neighborhood.	5,000 LF	$1,000,000	Neptune Beach	Ongoing
NB-59	Bal Harbour Sanitary Sewer Improvements	Sewer rehabilitation and replacement in the Bal Harbour neighborhood.	Bal Harbour Estates neighborhood	$1,000,000	Neptune Beach	Ongoing
NB-60	400 and 500 Block Sanitary sewer Improvements	Sewer rehabilitation and replacement of approximately 50 percent of the 400 and 500 block area south of Florida Blvd.	Approximately 50 percent of the 400 and 500 block area south of Florida Blvd.	$1,500,000	Neptune Beach	Start mid-2015

SECTION 12: CORMORANT BRANCH (WBID 2381)

12.1 JEA ACTIVITIES IN THE CORMORANT BRANCH WATERSHED

JEA's activities in the Cormorant Branch watershed are shown in **Table 71**.

TABLE 71: JEA ACTIVITIES IN THE CORMORANT BRANCH WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
JEA-216	ARV Inspection and Rehabilitation	ARV Inspection and Rehabilitation	Ongoing	Not applicable	JEA	Ongoing
JEA-222	Pump Station Class I/II Rebuilding	Repair or replace components of existing pump stations	Ongoing	Not applicable	JEA	Ongoing

12.2 FDOH–DUVAL COUNTY ACTIVITIES IN THE CORMORANT BRANCH WATERSHED

FDOH programs and activities conducted in the Cormorant Branch watershed are shown in **Table 72**.

TABLE 72: FDOH–DUVAL COUNTY ACTIVITIES IN THE CORMORANT BRANCH WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
FDOH-110	Intensive Inspection Program	Carry out intensive geospecific inspections in selected WBIDs based on repair permit applications, water quality information, and site conditions	Approximately 473 inspections and 53 re-inspections performed in WBID	$78,900	FDOH/ department/ EPA Section 319 Nonpoint Source Management Program Implementation Grant	Completed

12.3 COJ ACTIVITIES IN THE CORMORANT BRANCH WATERSHED

COJ's efforts in the Cormorant Branch watershed are shown in **Table 73**.

TABLE 73: COJ ACTIVITIES IN THE CORMORANT BRANCH WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	TOTAL COST	FUNDING SOURCE	PROJECT STATUS
COJ-335	Regional Stormwater Facility – MSMP	2 acre facility + 2-5 foot corrugated metal pipe + bank	Unknown	$6,700,000	COJ	Planned
COJ-336	Source Identification Sampling	Re-sampling effort conducted when high levels of fecal coliform bacteria are noted, in attempt to identify sources.	Ongoing	Unknown	COJ	Ongoing
COJ-355	BMAP Monitoring	BMAP monitoring for this WBID was added at end of 2011 as other sites were dropped from BMAP I WBIDs, 3 sites monthly	Ongoing	Unknown	COJ	Ongoing
COJ-390	3078 Purdom Drive	Storm sewer	Storm sewer	$3,511	COJ	Completed
COJ-391	Sewer Drains into Yard/Ditch	CARE initiated inspection	Ongoing	Unknown	COJ	Ongoing
COJ-417	Stormwater Action Team Proactive Maintenance Program	Roadside and outfall ditch regrades, vegetation removal, illegal dumping clean up, and illicit discharge source removal	Ongoing	Unknown	COJ	Ongoing

12.4 FDOT ACTIVITIES IN THE CORMORANT BRANCH WATERSHED

Table 74 lists FDOT's activities in the Cormorant Branch watershed.

TABLE 74: FDOT ACTIVITIES IN THE CORMORANT BRANCH WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
FDOT-114	Source Identification Sampling	Resampling effort conducted when high levels of fecal coliform bacteria are noted to attempt to identify sources	Ongoing	Included in FDOT-63	FDOT/ COJ	Ongoing
FDOT-124	PIC Program	Identify and remove illicit connections if found to be truly illicit	Ongoing	Included in FDOT-62	FDOT/ COJ	Ongoing
FDOT-125	BMAP Sampling	Routine BMAP II monitoring began October 2011	Ongoing	Included in FDOT-63	FDOT/ COJ	Ongoing

SECTION 13: WILLS BRANCH (WBID 2282)

13.1 JEA ACTIVITIES IN THE WILLS BRANCH WATERSHED

JEA's activities in the Wills Branch watershed are shown in **Table 75**.

TABLE 75: JEA ACTIVITIES IN THE WILLS BRANCH WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
JEA-204	Open Cut–Removal and Replacement	Replace failing/leaking infrastructure	Ongoing	Not applicable	JEA	Ongoing
JEA-205	Pump Station Class I/II Rebuilding	Repair or replace components of existing pump stations	Ongoing	Not applicable	JEA	Ongoing
JEA-217	CIPP–Install New Inner Lining	Rehabilitate failing/leaking infrastructure	Ongoing	Not applicable	JEA	Ongoing

13.2 COJ ACTIVITIES IN THE WILLS BRANCH WATERSHED

COJ's efforts in the Wills Branch watershed are shown in **Table 76**.

TABLE 76: COJ ACTIVITIES IN THE WILLS BRANCH WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	TOTAL COST	FUNDING SOURCE	PROJECT STATUS
COJ-337	1591 Lane Ave South	Drainage improvement	Unknown	$67,924	COJ	Completed
COJ-338	Source Identification Sampling	Re-sampling effort conducted when high levels of fecal coliform bacteria are noted, in attempt to identify sources.	Ongoing	Unknown	COJ	Ongoing
COJ-356	1121 Cahoon Road	Drainage improvement	Unknown	$251,529	COJ	Completed
COJ-357	Cahoon North of Homestead Oaks	Drainage improvement	Unknown	$22,232	COJ	Completed
COJ-358	Cahoon and Burma	Drainage improvement	Unknown	$64,267	COJ	Completed
COJ-359	Cahoon (Burma North of Homestead Oaks Drive)	Culvert improvement	Unknown	$1,303	COJ	Completed
COJ-360	Golfview West	Drainage improvement	Unknown	$24,832	COJ	Completed
COJ-361	Golfview West	Drainage improvement	Unknown	$61,174	COJ	Completed
COJ-362	Hazardous Contaminated Ditch	All maintenance activities presented were completed in response to CARE requests.	Ongoing	Unknown	COJ	Ongoing
COJ-392	Hanson at Londonberry	Drain line	Drain line	$78,649	COJ	Construction
COJ-418	Stormwater Action Team Proactive Maintenance Program	Roadside and outfall ditch regrades, vegetation removal, illegal dumping clean up, and illicit discharge source removal	Ongoing	Unknown	COJ	Ongoing

13.3 FDOT ACTIVITIES IN THE WILLS BRANCH WATERSHED

Table 77 lists FDOT's activities in the Wills Branch watershed.

TABLE 77: FDOT ACTIVITIES IN THE WILLS BRANCH WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
FDOT-115	Source Identification Sampling	Resampling effort conducted when high levels of fecal coliform bacteria are noted to attempt to identify sources	Ongoing	Included in FDOT-69	FDOT/ COJ	Ongoing
FDOT-116	Stormwater Management Systems	Construct wet detention pond at intersection of Normandy Boulevard and I-295	9 acres, wet pond	Unknown	FDOT	Completed
FDOT-126	PIC Program	Identify and remove illicit connections if found to be truly illicit	Ongoing	Included in FDOT-68	FDOT/ COJ	Ongoing
FDOT-133	I-10 Marietta Interchange Improvement	Construct 3 wet detention ponds to treat area of improvement	Construction Ongoing	Total Project Cost $26,880,000	FDOT	Construction ongoing. To be completed May 2016

SECTION 14: SHERMAN CREEK (WBID 2227)

14.1 FDOH–DUVAL COUNTY ACTIVITIES IN THE SHERMAN CREEK WATERSHED

The programs and activities FDOH conducts in the Sherman Creek watershed are shown in **Table 78**.

TABLE 78: FDOH–DUVAL COUNTY ACTIVITIES IN THE SHERMAN CREEK WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
FDOH-111	Intensive Inspection Program	Carry out intensive geospecific inspections in selected WBIDs based on repair permit applications, water quality information, and site conditions	Approximately 105 inspections and 8 reinspections performed in WBID	$11,300	FDOH/ department/ EPA Section 319 Nonpoint Source Management Program Implementation Grant	Completed

14.2 COJ ACTIVITIES IN THE SHERMAN CREEK WATERSHED

COJ's efforts in the Sherman Creek watershed are shown in **Table 79**.

TABLE 79: COJ ACTIVITIES IN THE SHERMAN CREEK WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	TOTAL COST	FUNDING SOURCE	PROJECT STATUS
COJ-339	Regional Stormwater Facility – MSMP	5 acre facility + conveyance improvements	Unknown	$1,800,000	COJ	Planned
COJ-340	Renault Drive/Apollo Drive	Drainage improvements	Unknown	$62,972	COJ	Completed
COJ-341	BMAP Monitoring	COJ EQD is responsible for 5 sites, 3 for Atlantic Beach (3 sampled monthly and 2 sampled quarterly); began 12/2010	Ongoing	Unknown	COJ, Atlantic Beach	Ongoing
COJ-363	Renault Drive/Apollo Drive Part 2	Drainage improvements	Unknown	$13,789	COJ	Completed

14.3 FDOT ACTIVITIES IN THE SHERMAN CREEK WATERSHED

Table 80 lists FDOT's activities in the Sherman Creek watershed.

TABLE 80: FDOT ACTIVITIES IN THE SHERMAN CREEK WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
FDOT-117	BMAP Sampling	Routine BMAP II monitoring began December 2010	Ongoing	Included in FDOT-75	FDOT/ COJ	Ongoing
FDOT-118	Stormwater Management Systems	Construct wet detention pond at Wonderwood Drive	72 acres, wet pond	Unknown	FDOT	Completed
FDOT-127	PIC Program	Identify and remove illicit connections if found to be truly illicit	Ongoing	Included in FDOT-74	FDOT/ COJ	Ongoing

14.4 ATLANTIC BEACH ACTIVITIES IN THE SHERMAN CREEK WATERSHED

The city of Atlantic Beach's activities in the Sherman Creek watershed are listed in **Table 81**.

TABLE 81: ATLANTIC BEACH ACTIVITIES IN THE SHERMAN CREEK WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
AB-147	Sewer Line Upgrades	Rehabilitate deteriorated cast iron sanitary sewer mains in Johns Creek, Mimosa Cove, Cove Landing, Aspen Ridge, Selva Marina Drive, and Seminole Road using CIPP	1,505 LF	$61,700	Atlantic Beach	Completed
AB-148	Sewer Line Upgrades	Rehabilitate vitrified clay sewer mains on East Coast Drive from Plaza Road to 10th Street	406 LF	$14,530	Atlantic Beach	Completed
AB-149	Sewer Line Upgrades	Replace cast iron sewer main in easement south of Willow Cove Court East	150 LF	$86,829	Atlantic Beach	Completed
AB-150	Manhole Inspections and Rehabilitation	Rehabilitate manholes on East Coast Drive with Spectrashield	7 manholes	$3,300	Atlantic Beach	Completed
AB-151	SSO Investigations – Preventive	Clean and televise sewer mains on Dudley Road and Dutton Island Road	600 LF	$1,300	Atlantic Beach	Completed
AB-152	SSO Investigations – Preventive	Clean and televise sewer main near Mimosa Cove lift station	1200 LF	$2,500	Atlantic Beach	Completed
AB-153	Sewer Line Upgrades	Rehabilitate sanitary sewer mains on East Coast Drive, Ocean Boulevard, and Beach Avenue between 12th and 15th Streets using CIPP	Approximately 3,070 LF of 8" and 10" sewer main	$91,559	Atlantic Beach	Completed
AB-154	Manhole Inspections and Rehabilitation	Rehabilitate manholes on East Coast Drive, Ocean Boulevard, and Beach Avenue between 12th and 15th Streets using Spectrashield	7 manholes	$5,460	Atlantic Beach	Completed
AB-155	Sewer Line Upgrades	Rehabilitate sanitary sewer mains on Francis Avenue, Jordan Street, and Lewis Street using CIPP	Approximately 3,190 LF of 8" and 10" sewer main	$133,238	75% Hazard Mitigation Grant Program; 25% Atlantic Beach	Completed
AB-156	Manhole Inspections and Rehabilitation	Rehabilitate manholes on Francis Avenue, Jordan Street, and Lewis Street using Spectrashield	10 manholes	$7,000	75% Hazard Mitigation Grant Program; 25% Atlantic Beach	Completed
AB-157	Sewer Line Upgrades	Rehabilitate sanitary sewer mains on Saturiba Drive, 15th Street, and 16th Street using CIPP	Approximately 3,543 LF of 8" and 12" sewer main	$133,315	Atlantic Beach	Completed
AB-158	Manhole Inspections and Rehabilitation	Rehabilitate manholes on Saturiba Drive with fiberglass liners, and on Sea Oats with Spectrashield	17 manholes	$52,212	Atlantic Beach	Completed
AB-159	East Coast Drive Stormwater Improvements Project	Construction of stormwater piping with catch basins, manholes and curb inlets, sanitary sewer service line encasement.	467 LF of 18" reinforced concrete pipe and 171 LF of 12x18 elliptical reinforced concrete pipe; 7 inlets	$209,000	Atlantic Beach	Completed

Project Number	Project Name	Project Description	Level of Effort	Estimated Cost	Funding Source	Project Status
AB-162	Stormwater Management Systems	Wet detention ponds at Atlantic Beach Country Club.	Approx. 4 acres, wet ponds	Unknown	Private	Completed
AB-163	Sewer Line Upgrades	Rehabilitate Sanitary Sewer Mains on Sea Oats Dr., Park Ter. E, Park Ter. W, and 17th St. using CIPP.	~7,300 LF of 8" and 12" Sewer Main	$340,000	50%-State Water Project Funding 50% Atlantic Beach	Planned
AB-164	Manhole Inspections and Rehabilitation	Rehabilitate Manholes on Sea Oats Dr., Park Ter. E, Park Ter. W, and 17th St. using Spectrashield.	20 Manholes	$60,000	50%-State Water Project Funding 50% Atlantic Beach	Planned
AB-165	Vac Truck Cleaning of Stormwater Pipers and Sanitary Sewer Clogs	Purchase of Vac-Con truck for "in-house" cleaning of storm sewers and sanitary sewer facilities to more effectively prevent stormwater backups and SSOs.	Improved maintenance of total system	$330,000	Atlantic Beach	Planned
AB-166	Salt Air Neighborhood Stormwater Improvements	Restoration of roadside swales and drainage inftrastructre.	Approx. 5,000 LF of roadway swales	$380,000	Atlantic Beach	Construction

14.5 NS Mayport Activities in the Sherman Creek Watershed

Table 82 lists the NS Mayport activities in the Sherman Creek watershed.

Table 82: NS Mayport Activities in the Sherman Creek Watershed

Project Number	Project Name	Project Description	Level of Effort	Estimated Cost	Funding Source	Project Status
NSM-19	Storm Drain Markers	Install storm drain markers on street and parking lot stormwater inlets	Entire station	Unknown	Navy	Ongoing

SECTION 15: GREENFIELD CREEK (WBID 2240A & 2240B)

15.1 JEA ACTIVITIES IN THE GREENFIELD CREEK WATERSHED

JEA's activities in the Greenfield Creek watershed are shown in **Table 83**.

TABLE 83: JEA ACTIVITIES IN THE GREENFIELD CREEK WATERSHED

WBID TYPE	PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
Fresh	JEA-227	CIPP–Install New Inner Lining	Rehabilitate failing/leaking infrastructure	Ongoing	Not applicable	JEA	Ongoing
Marine	JEA-228	CIPP–Install New Inner Lining	Rehabilitate failing/leaking infrastructure	Ongoing	Not applicable	JEA	Ongoing

15.2 FDOT ACTIVITIES IN THE GREENFIELD CREEK WATERSHED

Table 84 lists FDOT's activities in the Greenfield Creek watershed.

TABLE 84: FDOT ACTIVITIES IN THE GREENFIELD CREEK WATERSHED

WBID TYPE	PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
Fresh	FDOT-131	PIC Program	Identify and remove illicit connections if found to be truly illicit	Ongoing	Included in FDOT-80	FDOT/ COJ	Ongoing
Marine	FDOT-132	PIC Program	Identify and remove illicit connections if found to be truly illicit	Ongoing	Included in FDOT-80	FDOT/ COJ	Ongoing

SECTION 16: POTTSBURG CREEK (WBIDS 2265C AND 2265D)

16.1 JEA ACTIVITIES IN THE POTTSBURG CREEK WATERSHED

JEA's activities in the Pottsburg Creek watershed are shown in **Table 85**.

TABLE 85: JEA ACTIVITIES IN THE POTTSBURG CREEK WATERSHED

WBID TYPE	PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
Freshwater	JEA-229	Open Cut–Removal and Replacement	Replace failing/leaking infrastructure	Ongoing	Not applicable	JEA	Ongoing
Freshwater	JEA-230	CIPP–Install New Inner Lining	Rehabilitate failing/leaking infrastructure	Ongoing	Not applicable	JEA	Ongoing
Freshwater	JEA-231	Pump Station Class I/II Rebuilding	Repair or replace components of existing pump stations	Ongoing	Not applicable	JEA	Ongoing
Marine	JEA-232	Open Cut–Removal and Replacement	Replace failing/leaking infrastructure	Ongoing	Not applicable	JEA	Ongoing
Marine	JEA-233	CIPP–Install New Inner Lining	Rehabilitate failing/leaking infrastructure	Ongoing	Not applicable	JEA	Ongoing
Marine	JEA-234	Pump Station Class I/II Rebuilding	Repair or replace components of existing pump stations	Ongoing	Not applicable	JEA	Ongoing

16.2 FDOH–DUVAL COUNTY ACTIVITIES IN THE POTTSBURG CREEK WATERSHED

The programs and activities FDOH conducts in the Pottsburg Creek watershed are shown in **Table 86**.

TABLE 86: FDOH–DUVAL COUNTY ACTIVITIES IN THE POTTSBURG CREEK WATERSHED

WBID TYPE	PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
Freshwater	FDOH-114	Intensive Inspection Program	Carry out intensive geospecific inspections in selected WBIDs based on repair permit applications, water quality information, and site conditions	Approximately 1,410 inspections and 169 re-inspections performed in WBID	$236,850	FDOH/ department/ EPA Section 319 Nonpoint Source Management Program Implementation Grant	Completed

16.3 COJ Activities in the Pottsburg Creek Watershed

COJ's efforts in the Pottsburg Creek watershed are shown in **Table 87**.

Table 87: COJ Activities in the Pottsburg Creek Watershed

WBID Type	Project Number	Project Name	Project Description	Level of Effort	Total Cost	Funding Source	Project Status
??	COJ-342	Regional Stormwater Facility - MSMP	8 acre facility + 7.5 acre facility + MAPS in existing ponds	Unknown	$11,112,000	COJ	Planned
??	COJ-343	Source Identification Sampling	Re-sampling effort conducted when high levels of fecal coliform bacteria are noted, in attempt to identify sources.	Ongoing	Unknown	COJ	Ongoing
??	COJ-363	3051 Herring Road	Drainage improvement	Unknown	$26,162	COJ	Completed
??	COJ-364	8602 Emerald Isle Circle South	Drainage improvement	Unknown	$64,762	COJ	Completed
??	COJ-365	Leafy Lanes	Drainage improvement	Unknown	$3,389	COJ	Completed
??	COJ-393	2444 Buttonwood Drive	Storm sewer	Storm sewer	$7,090	COJ	Construction
??	COJ-394	7518 Holiday Rd S	Storm sewer	Storm sewer	$5,974	COJ	Construction
??	COJ-395	8362 Hidden Lake	Storm sewer	Storm sewer	$5,369	COJ	Construction
??	COJ-396	548 Bay Ridge Rd	Storm sewer	Storm sewer	$2,616	COJ	Construction
??	COJ-419	Stormwater Action Team Proactive Maintenance Program	Roadside and outfall ditch regrades, vegetation removal, illegal dumping clean up, and illicit discharge source removal	Ongoing	Unknown	COJ	Ongoing

16.4 FDOT Activities in the Pottsburg Creek Watershed

Table 88 lists FDOT's activities in the Pottsburg Creek watershed.

Table 88: FDOT Activities in the Pottsburg Creek Watershed

WBID Type	Project Number	Project Name	Project Description	Level of Effort	Estimated Cost	Funding Source	Project Status
Freshwater	FDOT-136	Source Identification Sampling	Resampling effort conducted when high levels of fecal coliform bacteria are noted to attempt to identify sources	Ongoing	Included in FDOT-88	FDOT/ COJ	Ongoing
Marine	FDOT-137	Source Identification Sampling	Resampling effort conducted when high levels of fecal coliform bacteria are noted to attempt to identify sources	Ongoing	Included in FDOT-88	FDOT/ COJ	Ongoing
Freshwater	FDOT-138	I-95 Interchange Operational Improvements at SR 201 (JTB)	Construct stormwater management systems to treat areas of improvement	Construction Ongoing	Total Project Cost $66,720,000	FDOT	Construction ongoing. To be completed April 2017

SECTION 17: MIDDLE TROUT RIVER (WBID 2203)

17.1 JEA ACTIVITIES IN THE MIDDLE TROUT RIVER WATERSHED

JEA's activities in the Middle Trout River watershed are shown in **Table 89**.

TABLE 89: JEA ACTIVITIES IN THE MIDDLE TROUT RIVER WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
JEA-219	Open Cut–Removal and Replacement	Replace failing/leaking infrastructure	Ongoing	Not applicable	JEA	Ongoing

17.2 FDOH–DUVAL COUNTY ACTIVITIES IN THE MIDDLE TROUT RIVER WATERSHED

The programs and activities FDOH conducts in the Middle Trout River watershed are shown in **Table 90**.

TABLE 90: FDOH–DUVAL COUNTY ACTIVITIES IN THE MIDDLE TROUT RIVER WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
FDOH-113	Intensive Inspection Program	Carry out intensive geospecific inspections in selected WBIDs based on repair permit applications, water quality information, and site conditions	Not applicable	Not applicable	FDOH/ Department/ EPA Section 319 Nonpoint Source Management Program Implementation Grant	Completed

17.3 COJ ACTIVITIES IN THE MIDDLE TROUT RIVER WATERSHED

COJ's efforts in the Middle Trout River watershed are shown in **Table 91**.

TABLE 91: COJ ACTIVITIES IN THE MIDDLE TROUT RIVER WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	TOTAL COST	FUNDING SOURCE	PROJECT STATUS
COJ-366	10309 Iowa Avenue	Drainage improvement	Unknown	$86,748	COJ	Completed
COJ-367	8921 Messer Road	Drainage improvement	Unknown	$25,671	COJ	Completed
COJ-368	Sycamore Lane	Drainage improvement	Unknown	$51,186	COJ	Completed
COJ-397	Old Kings Road	Storm sewer rehab	Storm sewer	$7,348	COJ	Completed
COJ-398	Moncrief-Dinsmore	Storm sewer rehab	Storm sewer	$34,570	COJ	Completed
COJ-399	Iowa Avenue at Macklin Street	Drain line	Drain line	$115,699	COJ	Construction
COJ-420	Stormwater Action Team Proactive Maintenance Program	Roadside and outfall ditch regrades, vegetation removal, illegal dumping clean up, and illicit discharge source removal	Ongoing	Unknown	COJ	Ongoing

17.4 FDOT ACTIVITIES IN THE MIDDLE TROUT RIVER WATERSHED

Table 92 lists FDOT's activities in the Middle Trout River watershed.

TABLE 92: FDOT ACTIVITIES IN THE MIDDLE TROUT RIVER WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
FDOT-129	PIC Program	Identify and remove illicit connections if found to be truly illicit	Ongoing	Included in FDOT-92	FDOT/ COJ	Ongoing

SECTION 18: LOWER TROUT RIVER (WBID 2203A)

18.1 JEA ACTIVITIES IN THE LOWER TROUT RIVER WATERSHED

JEA's activities in the Lower Trout River watershed are shown in **Table 93**.

TABLE 93: JEA ACTIVITIES IN THE LOWER TROUT RIVER WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
JEA-207	Pipe Cleaning	Clean existing pipes to avoid blockages	Ongoing	Unknown	JEA	Ongoing
JEA-208	Pipe TV Inspection	Inspect existing infrastructure through use of CCTV system	Ongoing	Unknown	JEA	Ongoing
JEA-211	HDPE Pipe Cleaning–Contractor	Clean existing HDPE pipes to avoid blockages	Ongoing	Unknown	JEA	Ongoing
JEA-220	Pipe Bursting–Increase Carrying Capacity	Replace failing/leaking infrastructure	Ongoing	Unknown	JEA	Ongoing
JEA-221	ARV Inspection and Rehabilitation	ARV Inspection and Rehabilitation	Ongoing	Unknown	JEA	Ongoing

18.2 FDOH–DUVAL COUNTY ACTIVITIES IN THE LOWER TROUT RIVER WATERSHED

FDOH programs and activities conducted in the Lower Trout River watershed are shown in **Table 94**.

TABLE 94: FDOH–DUVAL COUNTY ACTIVITIES IN THE LOWER TROUT RIVER WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS

No content in table!!

18.3 COJ ACTIVITIES IN THE LOWER TROUT RIVER WATERSHED

COJ's efforts in the Lower Trout River watershed are shown in **Table 95**.

TABLE 95: COJ ACTIVITIES IN THE LOWER TROUT RIVER WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	TOTAL COST	FUNDING SOURCE	PROJECT STATUS
COJ-344	Riverview Area Drainage Improvements	Drainage improvements	Unknown	$1,400,000	COJ	Completed
COJ-369	10435 Biscayne Boulevard	Drainage improvement	Unknown	$35,071	COJ	Completed
COJ-370	120 Franklin Street	Drainage improvement	Unknown	$29,225	COJ	Completed
COJ-371	904 Brandywine	Drainage improvement	Unknown	$366	COJ	Completed
COJ-372	Gregory Place	Drainage improvement	Unknown	$18,361	COJ	Completed
COJ-400	3307 Trout River	Drain line	Drain line	$154,325	COJ	Construction
COJ-401	5330 Roanoke Blvd	Cave in	Cave in	$4,985	COJ	Completed
COJ-402	Donnybrook Ave.	Storm sewer	Storm sewer	$34,910	COJ	Completed
COJ-403	Baldwin St @ Barber St	Storm sewer	Storm sewer	$30,103	COJ	Completed
COJ-404	10602 Civic Club Cr	Drain line	Drain line	$41,850	COJ	Completed

18.4 FDOT ACTIVITIES IN THE LOWER TROUT RIVER WATERSHED

Table 96 lists FDOT's activities in the Lower Trout River watershed.

TABLE 96: FDOT ACTIVITIES IN THE LOWER TROUT RIVER WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
FDOT-120	Source Identification Sampling	Resampling effort conducted when high levels of fecal coliform bacteria are noted to attempt to identify sources	Ongoing	Included in FDOT-99	FDOT/ COJ	Ongoing
FDOT-130	PIC Program	Identify and remove illicit connections if found to be truly illicit	Ongoing	Included in FDOT-98	FDOT/ COJ	Ongoing

APPENDICES

APPENDIX A: WBID BOUNDARY MODIFICATIONS

The following maps show the changes made to the WBID boundaries based on data collected during the 2014 field assessments of these waterbodies and their neighboring basins. Boundary changes were made in the following tributaries: Craig Creek; Fishing Creek; Moncrief Creek; Hopkins Creek; Sherman Creek; Greenfield Creek; Pottsburg Creek; and the Trout River. When the boundary is changed in one WBID, by definition the neighboring area is also affected and so multiple WBIDs were affected by boundary adjustments.

As described in **Section 2.3**, three tributaries were modified by splitting them further into freshwater and marine sections. For Moncrief Creek, Pottsburg Creek, and Greenfield Creek, tributary areas previously treated as one WBID are now split into two WBIDs with new identification numbers. Maps of the divided areas are provided in this section.

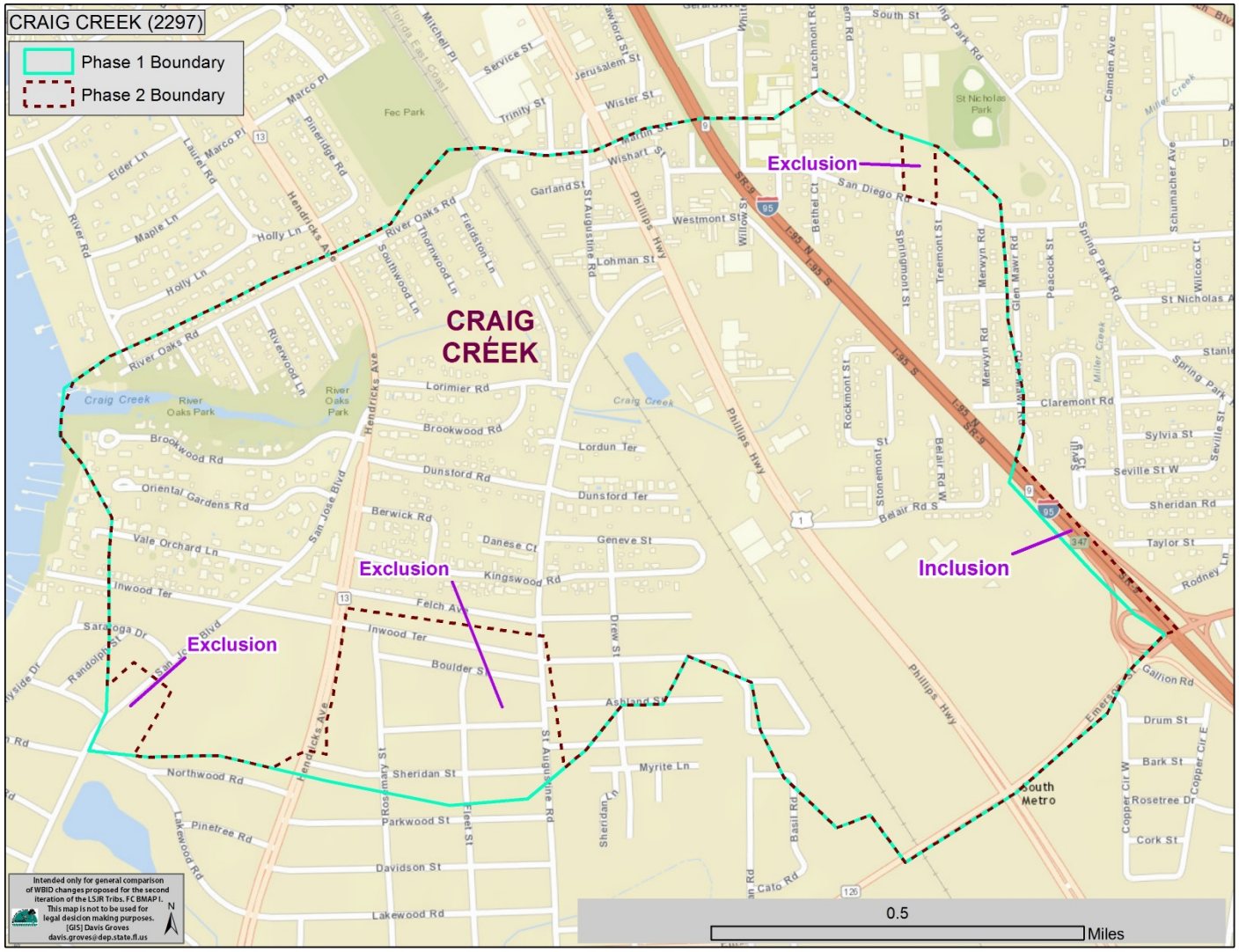

FIGURE A-1: CRAIG CREEK WBID BOUNDARY MODIFICATIONS

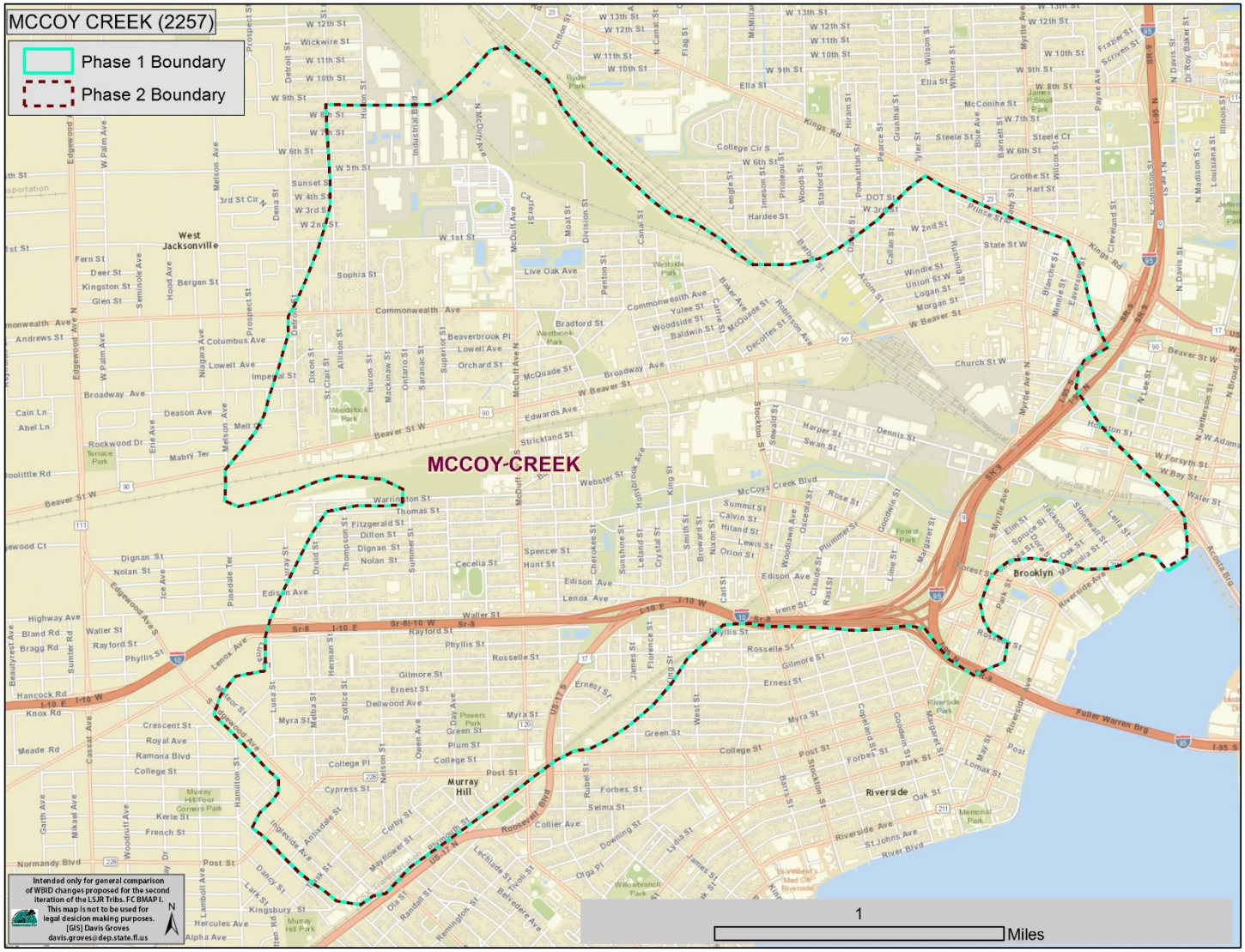

FIGURE A-2: UNCHANGED MCCOY CREEK WBID BOUNDARY

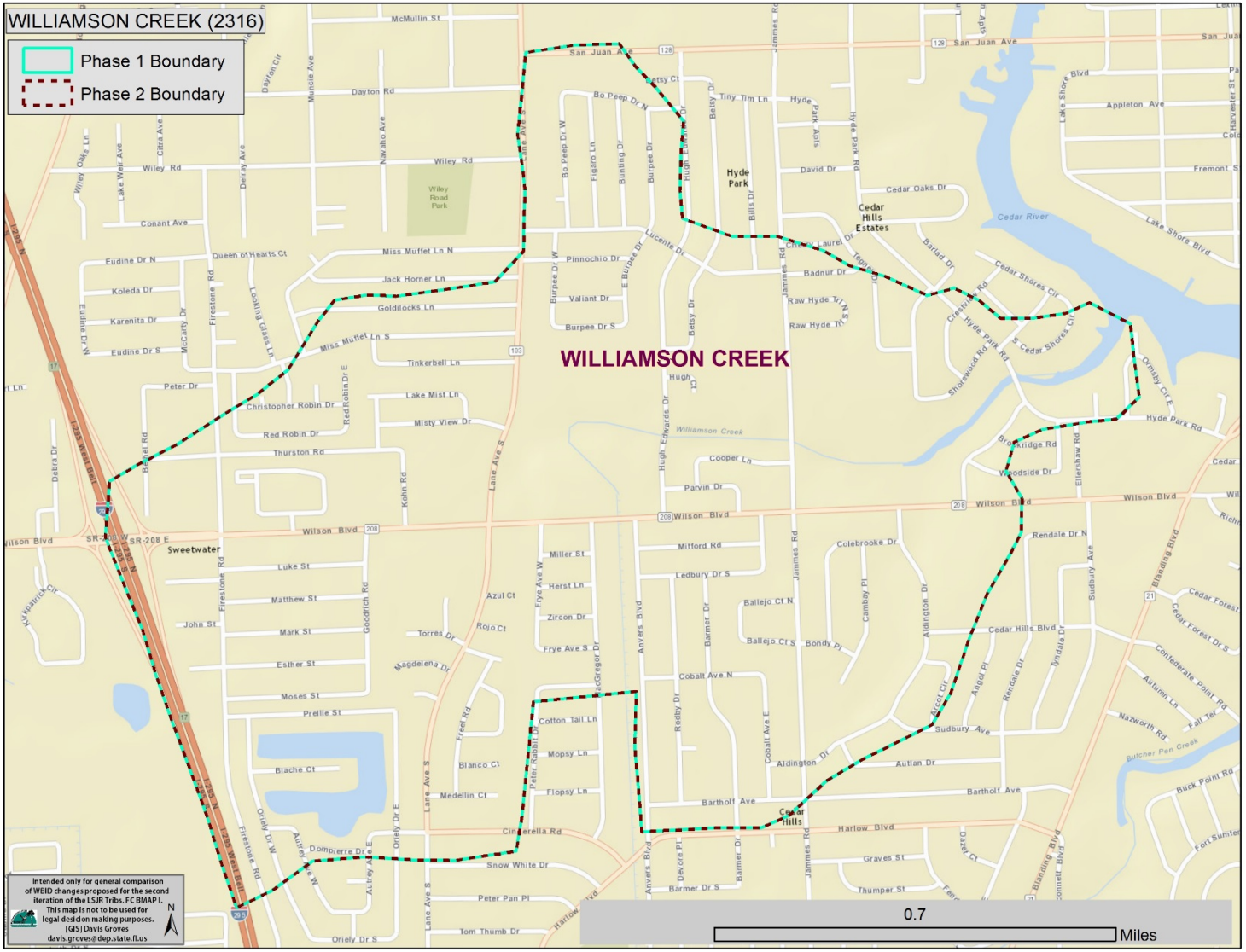

FIGURE A-3: UNCHANGED WILLIAMSON CREEK WBID BOUNDARY

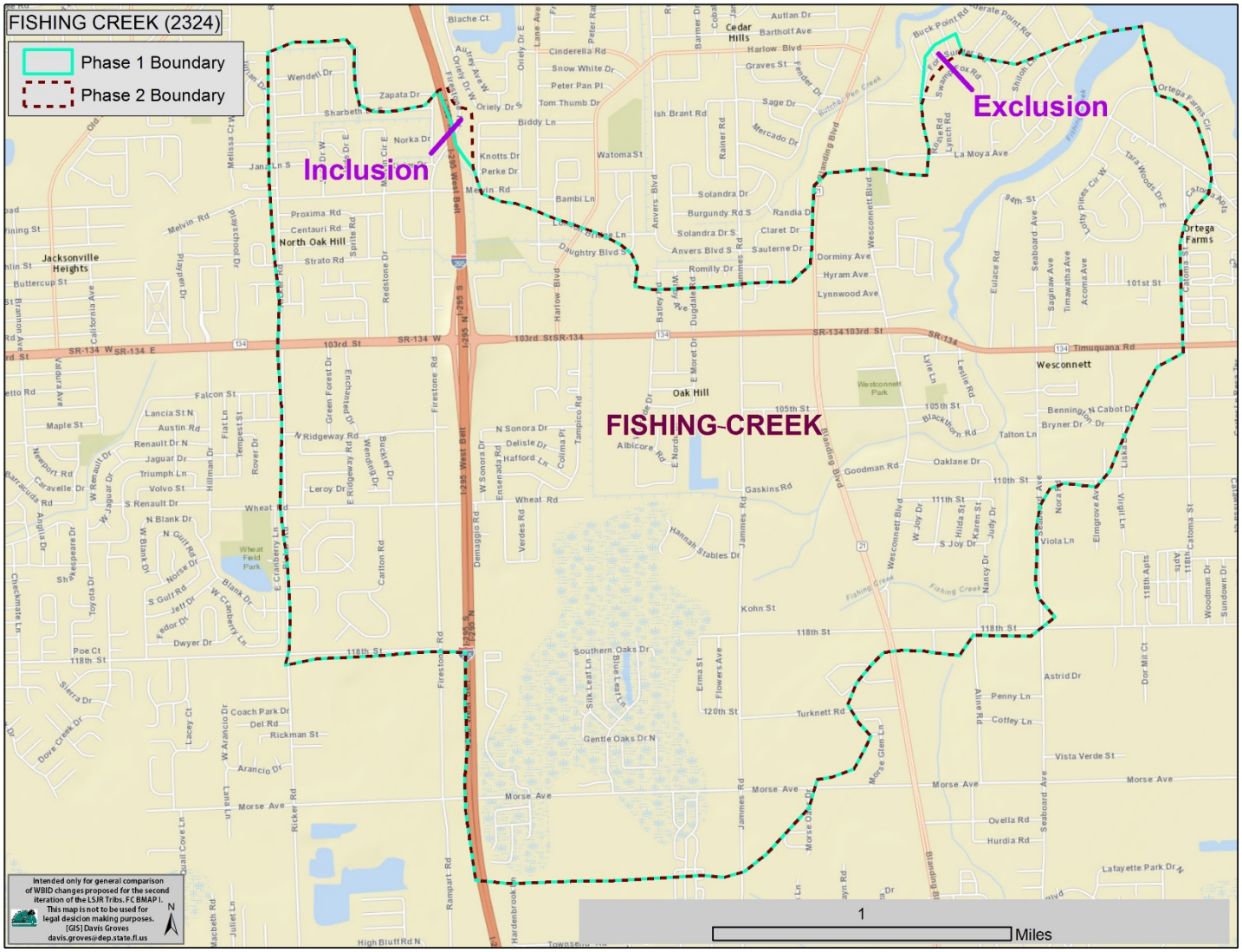

FIGURE A-4: FISHING CREEK WBID BOUNDARY MODIFICATIONS

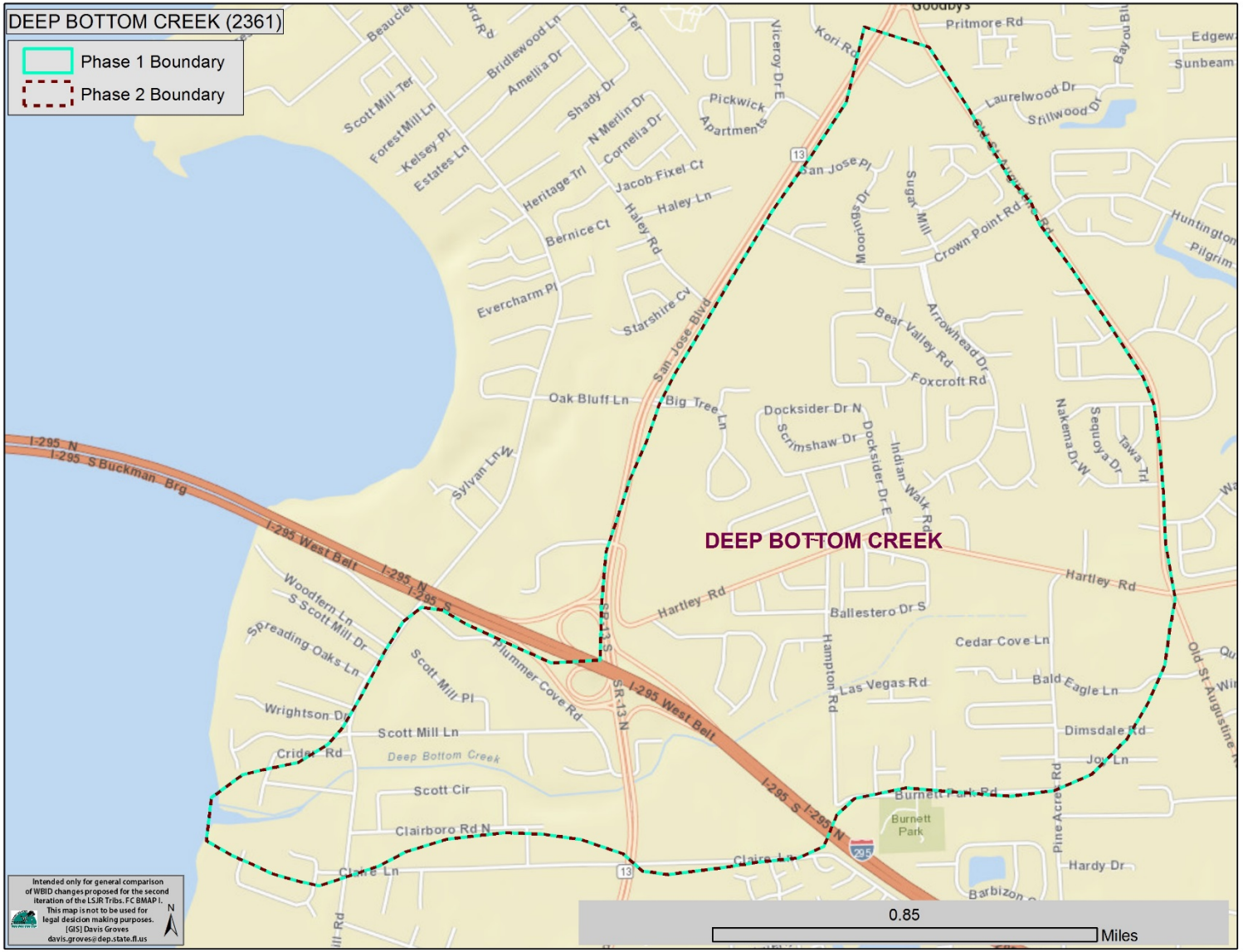

FIGURE A-5: UNCHANGED DEEP BOTTOM CREEK WBID BOUNDARY

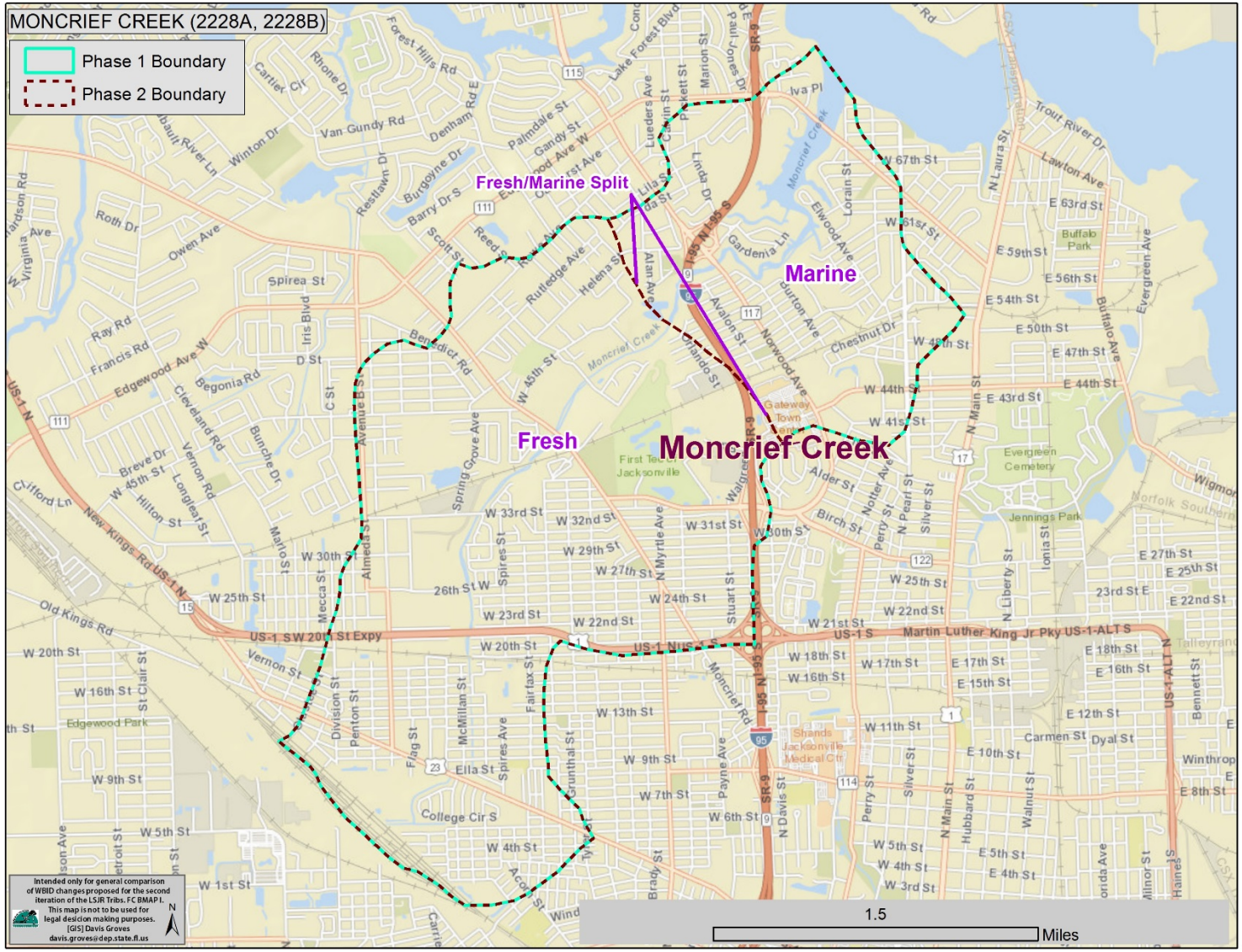

FIGURE A-6: MONCRIEF CREEK WBID BOUNDARY MODIFICATIONS

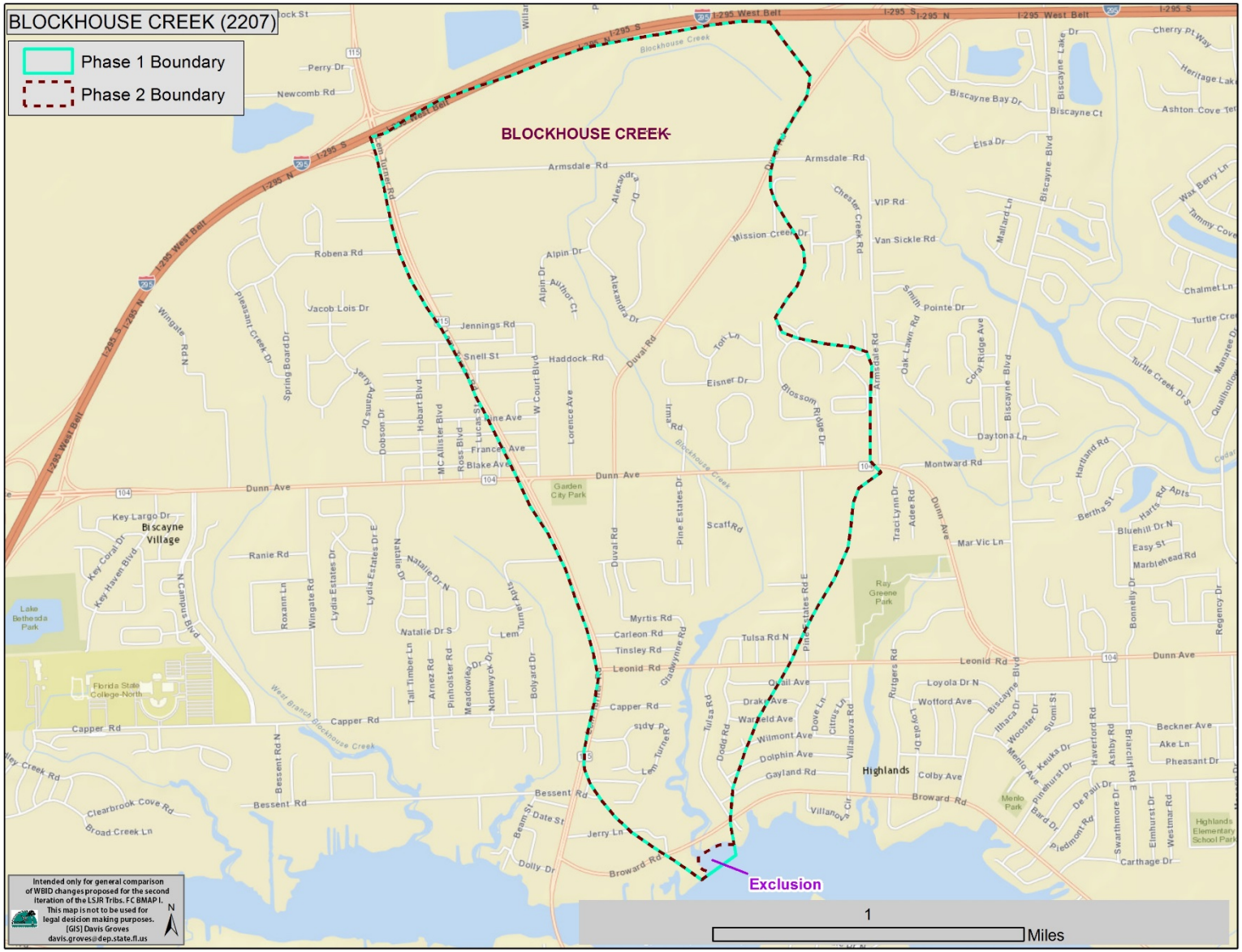

FIGURE A-7: UNCHANGED BLOCKHOUSE CREEK WBID BOUNDARY

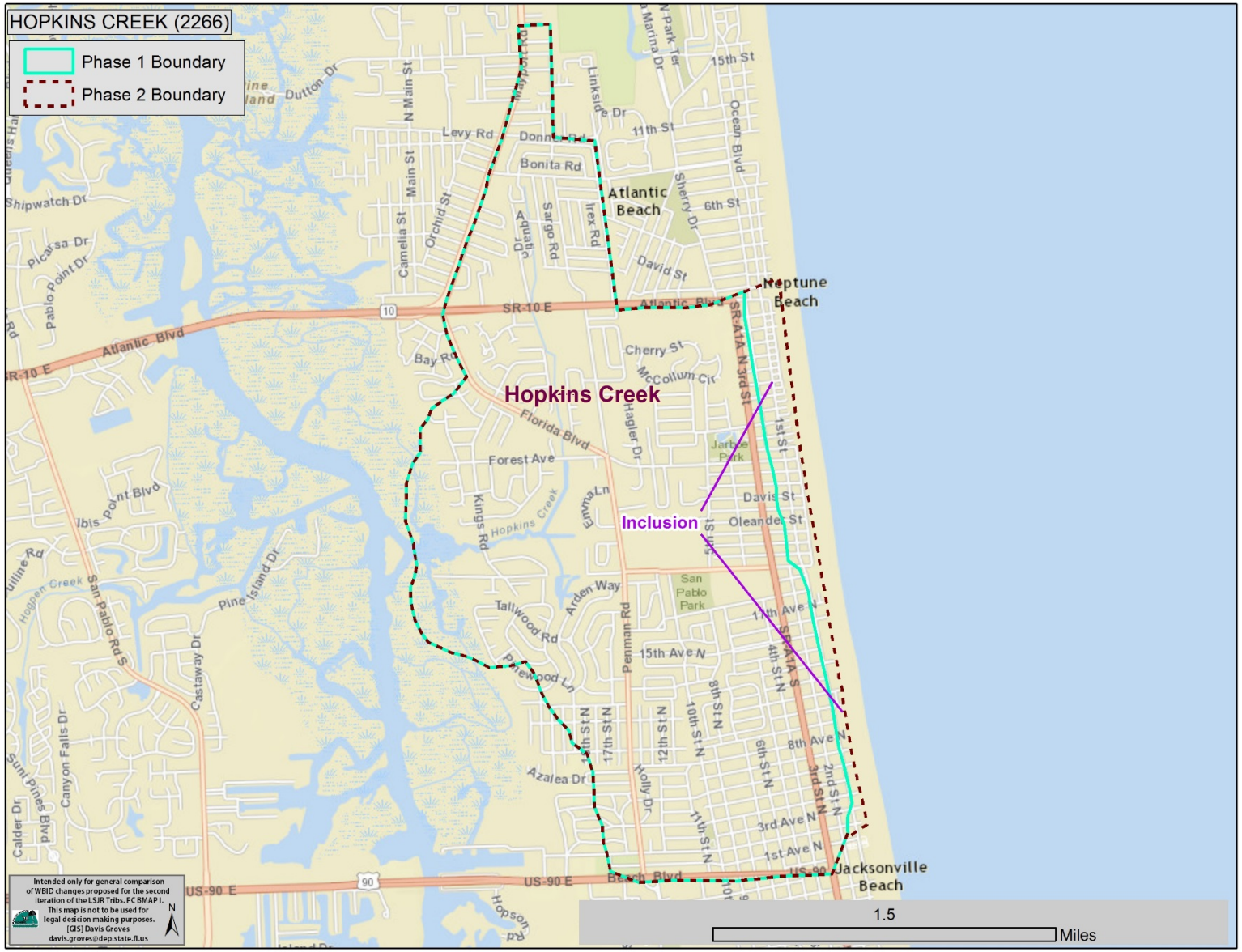

FIGURE A-8: HOPKINS CREEK WBID BOUNDARY MODIFICATIONS

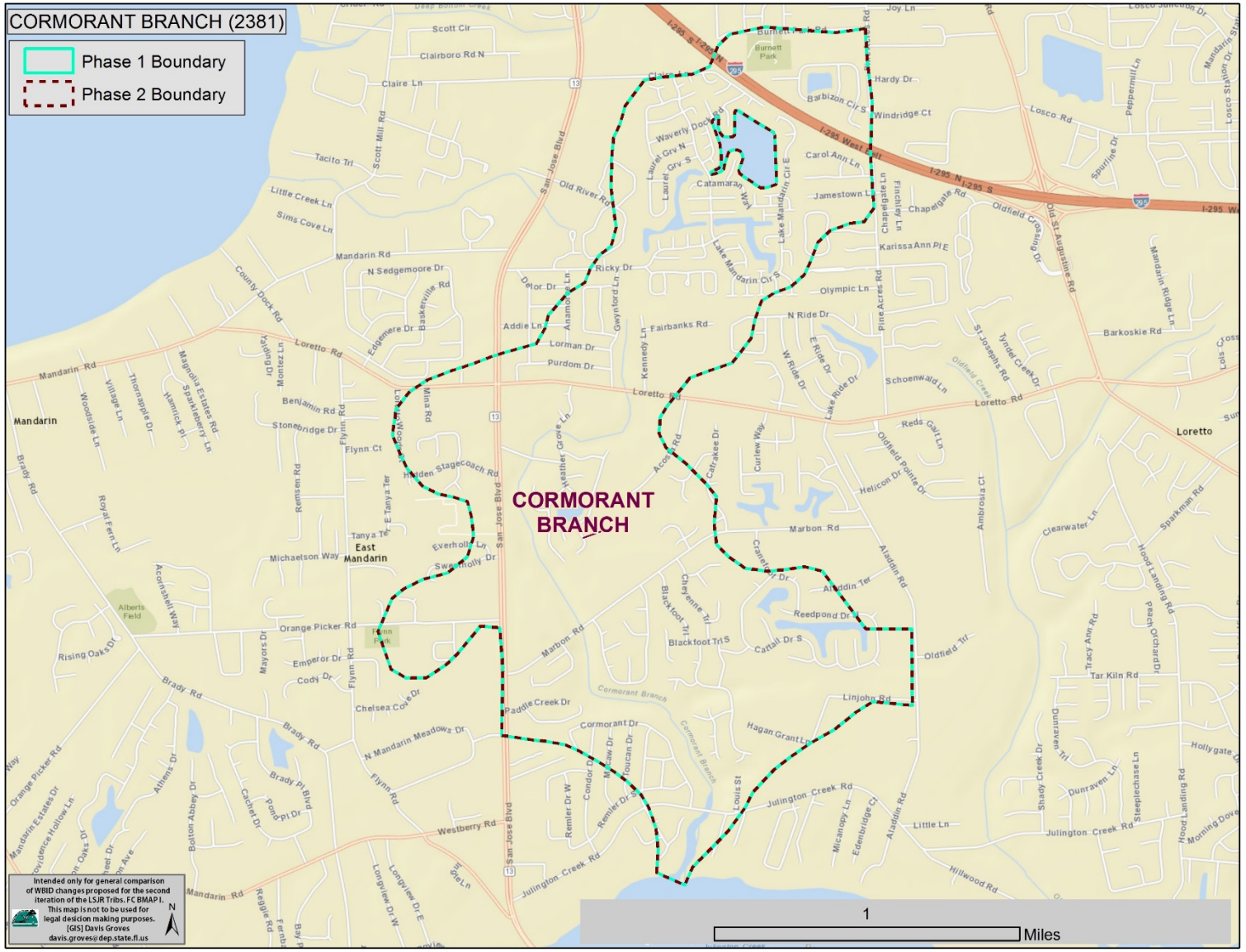

FIGURE A-9: UNCHANGED CORMORANT BRANCH WBID BOUNDARY

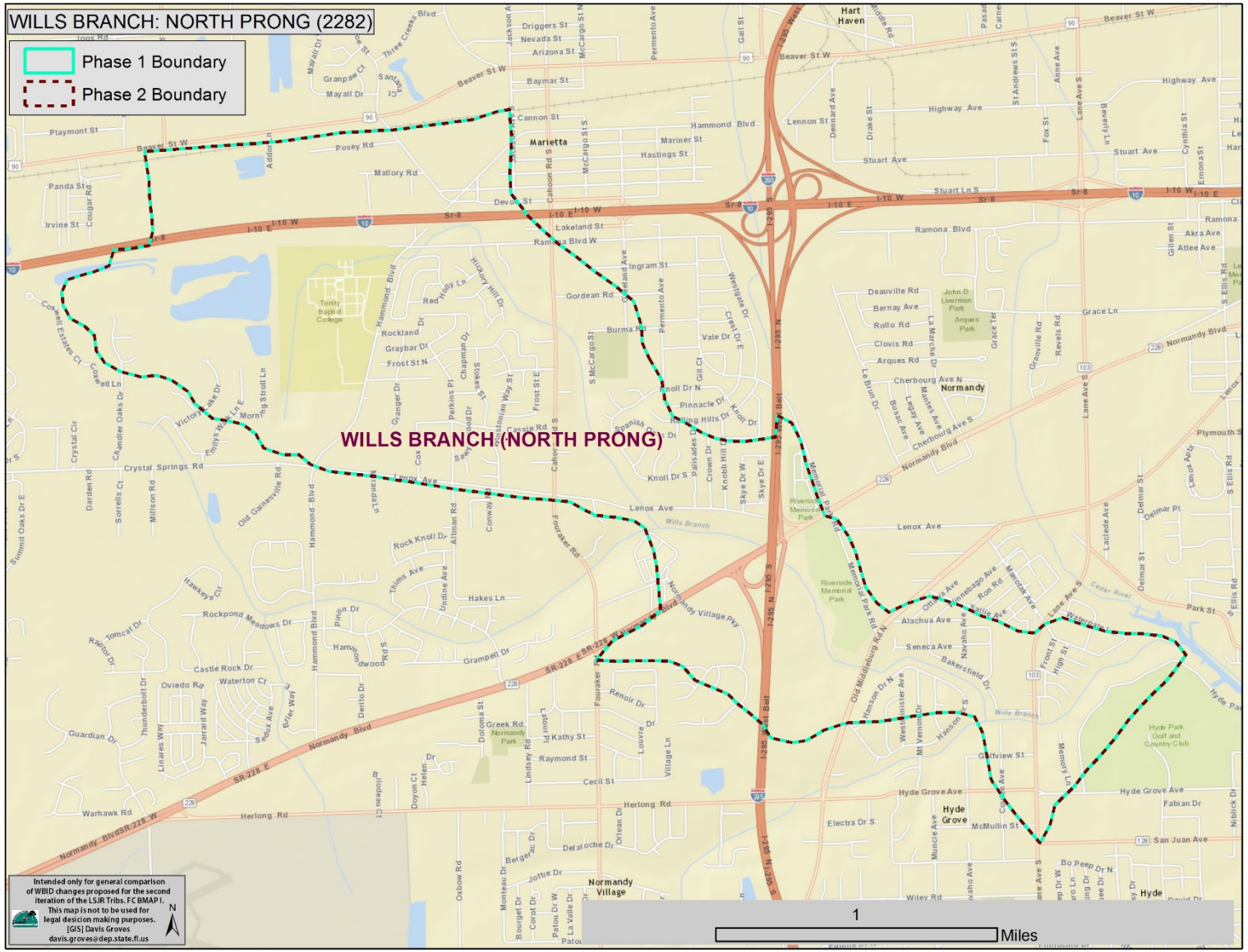

FIGURE A-10: UNCHANGED WILLS BRANCH WBID BOUNDARY

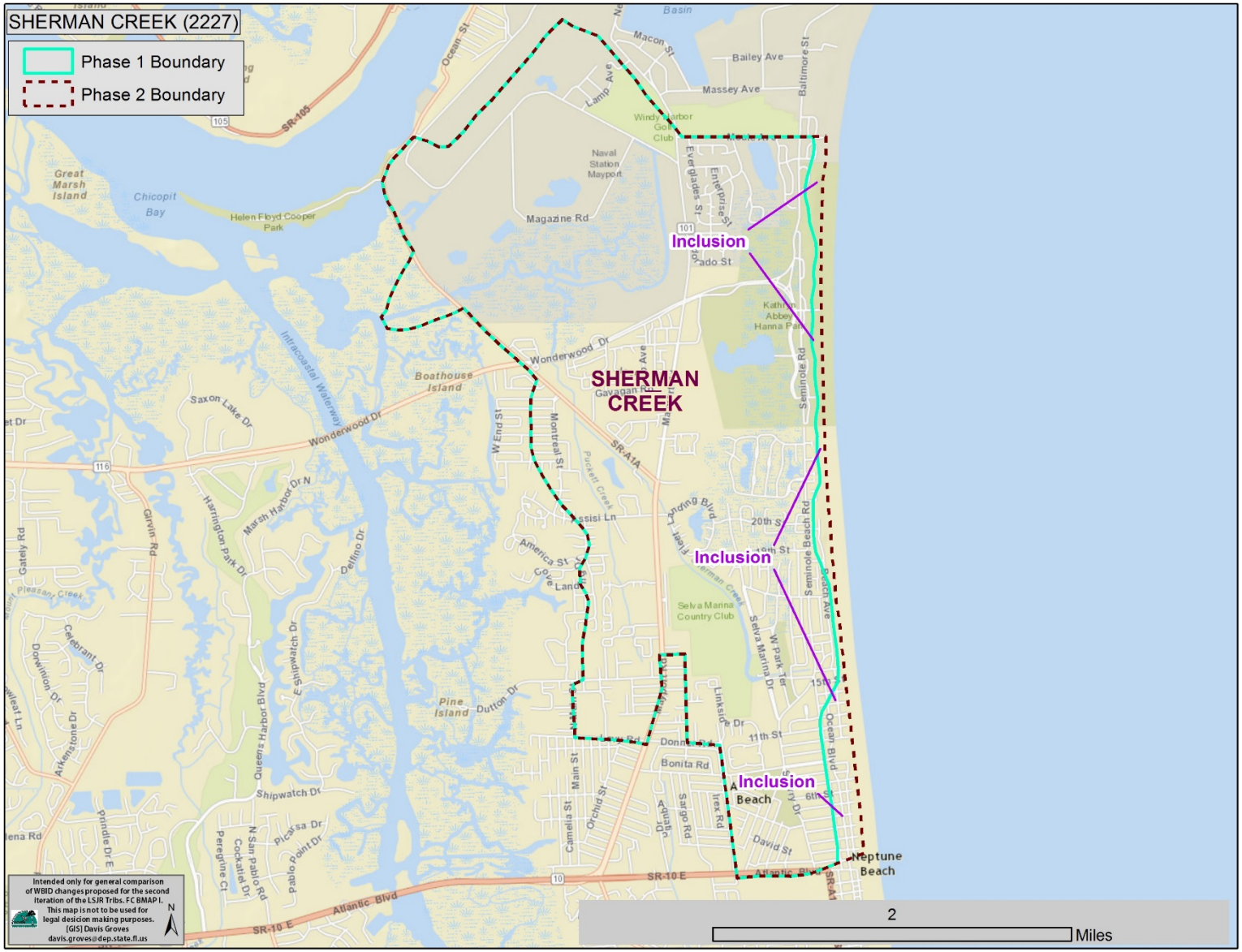

FIGURE A-11: SHERMAN CREEK WBID BOUNDARY MODIFICATIONS

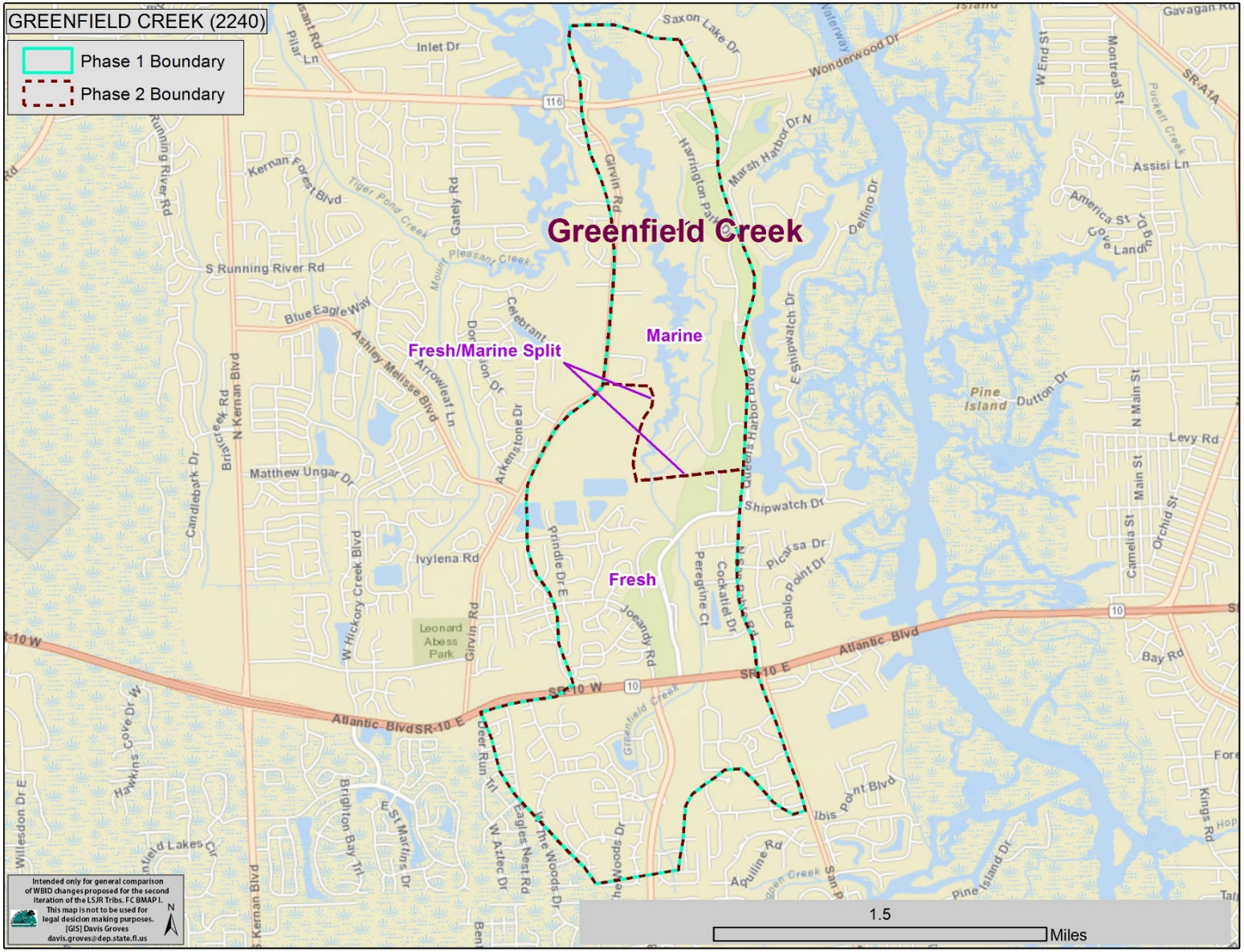

FIGURE A-12: GREENFIELD CREEK WBID BOUNDARY MODIFICATIONS

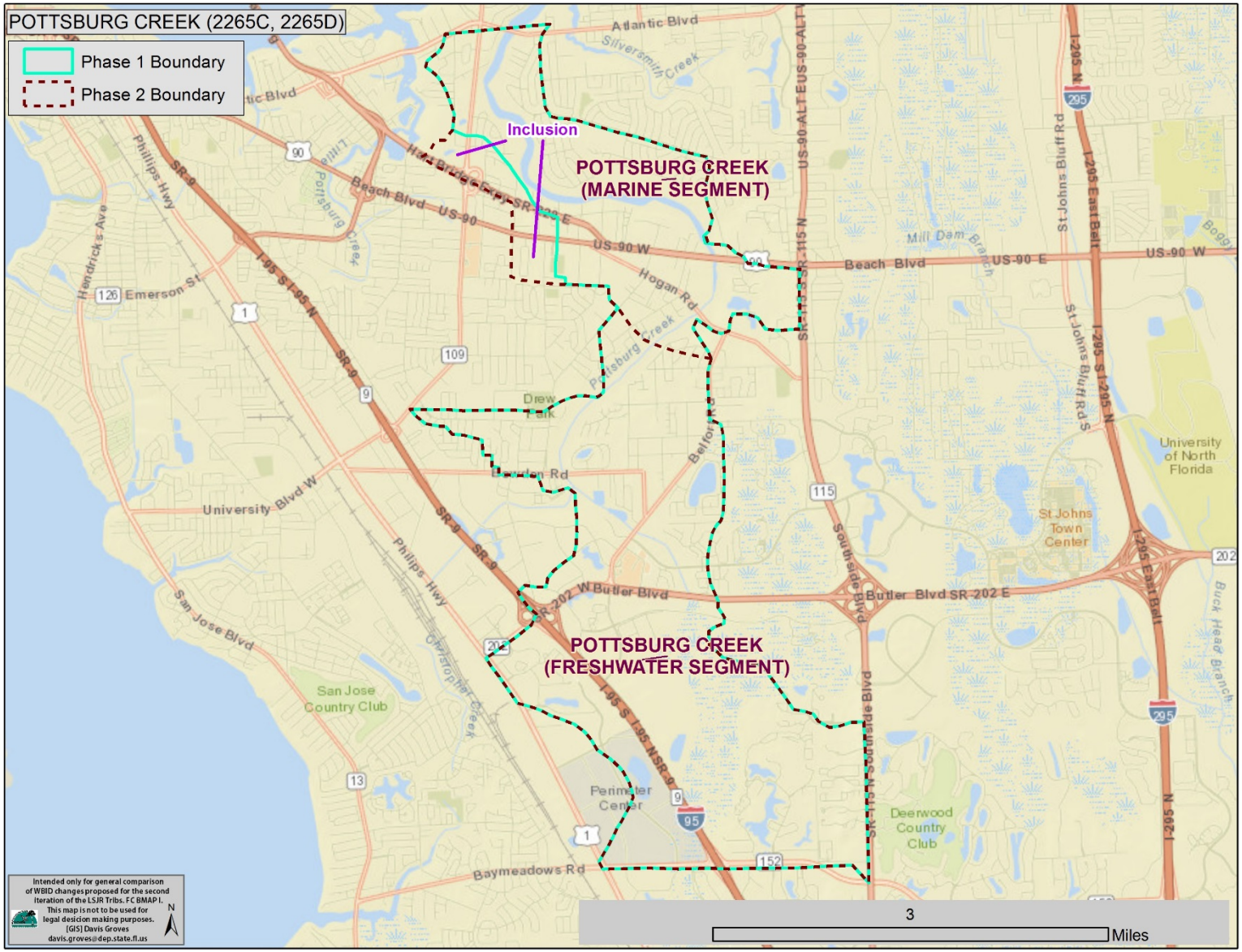

FIGURE A-13: POTTSBURG CREEK WBID BOUNDARY MODIFICATIONS

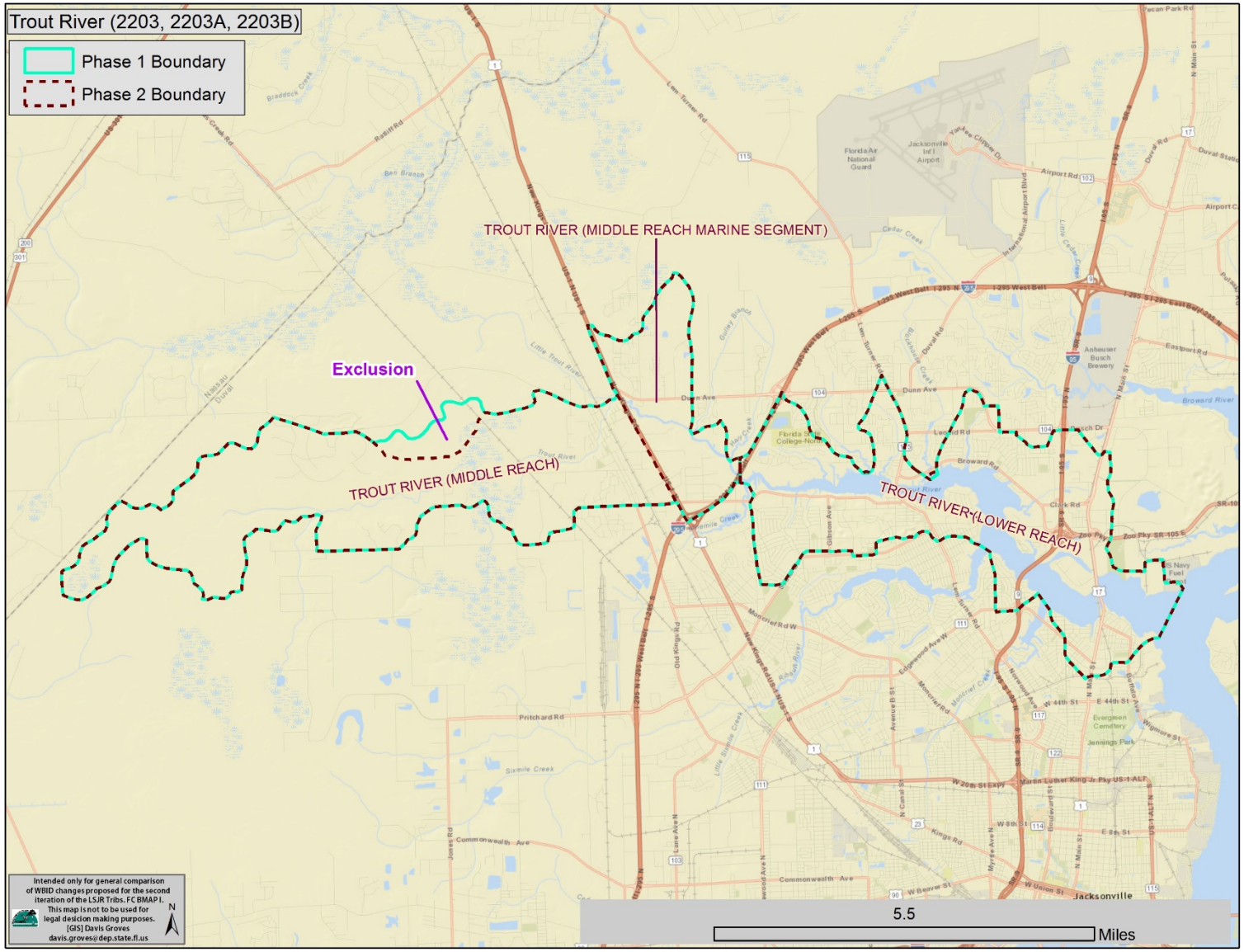

FIGURE A-14: TROUT RIVER WBID BOUNDARY MODIFICATIONS

APPENDIX B: UPDATED NS MAYPORT ACTIVITIES IN THE SHERMAN CREEK WATERSHED

NS Mayport has two projects that were listed in the original BMAP as ongoing that have now been completed. These projects are listed below in order to specify that these projects will no longer be included in the annual updates for the second iteration of the BMAP. While these projects were potentially beneficial to reduce fecal coliform sources, their completion does not change the suffiency of effort determination for the sources in the Sherman Creek. NS Mayport's remaining activities are expected to continue in the second phase of the BMAP.

TABLE B-1: UPDATES ON NS MAYPORT ACTIVITIES IN SHERMAN CREEK

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
NSM-6	Collection System Spill Prevention Program	Clean and inspect (using video) sewage collection system	Entire sewage collection system	Unknown	Navy	Completed
NSM-18	Street Sweeping–Station	Sweep streets monthly in nonhousing areas	1,462,497 square yards/month	Unknown	Navy	Completed

APPENDIX C: UPDATED CITY OF JACKSONVILLE BEACH ACTIVITIES IN THE HOPKINS CREEK WATERSHED

The city of Jacksonville Beach had two projects listed in the original BMAP whose descriptions have now been modified. The amended descriptions are provided below. As ongoing projects, the activities associated with these projects will be included in the annual reporting for the second phase of the BMAP.

TABLE C-1: UPDATES ON JACKSONVILLE BEACH ACTIVITIES IN THE HOPKINS CREEK WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
JB-50	Sewer System Inspection	Maintain existing sewer system	Cleaning of approximately 54,000 LF	$20,000	Jacksonville Beach	Ongoing
JB-51	Sewer Manhole Inspections and Rehabilitation	Maintain existing sewer manholes	Coat interior of manholes citywide	$200,000	Jacksonville Beach	Ongoing

The primary changes are updated in the cost esimates for these projects. For Project JB-51, the change reflects a citywide effort to coat manholes rather than a selected number of manholes.

APPENDIX D: UPDATED CITY OF NEPTUNE BEACH ACTIVITIES IN THE HOPKINS CREEK WATERSHED

The city of Neptune Beach has several projects in the Hopkins Creek watershed that have evolved over time. The projects have changed for various reasons such as partnership changes, project revisions, or that the efforts were completed but the periodic project updates may occur. **Table D-1** below includes projects whose descriptions have changed since the original BMAP, but may be included in future progress reports unless they are fully completed or there were not necessary activities conducted in a given year.

TABLE D-1: UPDATED NEPTUNE BEACH ACTIVITIES IN THE HOPKINS CREEK WATERSHED

PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
Penman Terrace Lift Station renovation	Upgrade and rehabilitate existing wet well	1 lift station	$5,000	Neptune Beach	Completed
Stormwater Education and Outreach Efforts	Participate in WAV Program	Public Works and WWTP facilities	$3,500/year	Neptune Beach	Completed
Organize a Walk the WBID for Hopkins Creek	Organize and participate in Walk the WBID for Hopkins Creek watershed	Walk the WBID	$6,000	Neptune Beach	Completed
Stormwater Pollution Prevention Plan	Inspect Public Works facility quarterly and annually	Hopkins Creek in city of Neptune Beach	$5,000	Neptune Beach	Ongoing
Oceanwood Lift Station Renovation	Upgrade and rehabilitate existing wet well	1 lift station	$5,000	Neptune Beach	Completed
Summer Sands Lift Station renovation	Upgrade and rehabilitate existing wet well and station piping	1 lift station	$13,000	Neptune Beach	Completed
Stormwater Education and Outreach Efforts	SJRWMD WAV Program Discontinued- NB replaced public ed with annual newsletter in utility bills and website	Citywide stormwater system	$5,000/year	Neptune Beach	Ongoing
Create GIS Mapping System Inventory Remaining Septic Tank Areas	Put together GIS mapping system and collect data to inventory remaining septic tank areas	60 lots on septic	$5,000	Neptune Beach	Ongoing; updated as needed
Create GIS Mapping System for City Lift Station Inventory	Put together GIS mapping system and collect data for city's sanitary sewer lift station facilities	Citywide	$2,000	Neptune Beach	Ongoing; updated as needed
Create GIS Mapping System for City Gravity Sanitary Sewer Inventory	Put together GIS mapping system and collect data for city's gravity sanitary sewer facilities	Citywide	$5,000	Neptune Beach	Ongoing; updated as needed
Create GIS Mapping System of Private Lift Station Inventory	Put together GIS mapping system and collect data for private lift station facilities in city	Citywide	$2,500	Neptune Beach	Ongoing; updated as needed

PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	ESTIMATED COST	FUNDING SOURCE	PROJECT STATUS
Create GIS Mapping System for City Stormwater Related Inventory	Put together GIS mapping system and collect data for city's stormwater facilities; completion in 2010	Citywide	$5,000	Neptune Beach	Ongoing; updated as needed

APPENDIX E: UPDATED CITY OF JACKSONVILLE ACTIVITIES

The city of Jacksonville has one project that was listed in the original BMAP as planned but has now been cancelled. This project is listed below in order to specify that it will no longer be included in the annual updates for the second iteration of the BMAP. While this project was potentially beneficial to reduce fecal coliform sources, its cancellation does not change the suffiency-of-effort determination for the sources in the Williamson Creek. The city's remaining activities in Williamnson Creek are expected to continue in the second phase of the BMAP.

TABLE E-1: UPDATED CITY OF JACKSONVILLE ACTIVITIES IN THE WILLIAMSON CREEK WATERSHED

PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION	LEVEL OF EFFORT	TOTAL COST	FUNDING SOURCE	PROJECT STATUS
COJ-319	Regional Stormwater Facility with Managed Aquatic Plant Systems (MAPS)	Regional Stormwater Facility with MAPS	Unknown	$366,429	COJ	Cancelled