

Municipal Separate Storm Sewer System
National Pollutant Discharge
Elimination System

Joint Annual Report

Cycle 4- Year 4

October 1, 2019 Thru
September 30, 2020

Submitted by
Northern Palm Beach County
Improvement District
as Lead Permittee

prepared by
MOCK•ROOS

NPDES MS4
A Joint Program of Palm Beach County Permittees

NPDES

Palm Beach County MS4
Permit No. FLS000018-004

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Appendices

A. Permit Renewal - Cycle 4 Permit Revisions

B. Permittee Individual Annual Reports

*(see MS4 website pbco-npdes.org-Annual Reporting for Cycle 4, Year 3)

1. Atlantis, City of
2. Belle Glade, City of
3. Boca Raton, City of
4. Boynton Beach, City of
5. Cloud Lake, Town of
6. Delray Beach, City of
7. FDOT – District Four
8. FDOT, Turnpike Enterprise
9. Glen Ridge, Town of
10. Greenacres, City of
11. Gulf Stream, Town of
12. Haverhill, Town of
13. Highland Beach, Town of
14. Hypoluxo, Town of
15. Indian Trail Improvement District
16. Juno Beach, Town of
17. Jupiter, Town of
18. Jupiter Inlet Colony, Town of
19. Lake Clarke Shores, Town of
20. Lake Park, Town of
21. Lake Worth, City of
22. Lantana, Town of
23. Manalapan, Town of
24. Mangonia Park, Town of
25. Northern Palm Beach County Improvement District
26. North Palm Beach, Village of
27. Ocean Ridge, Town of
28. Palm Beach, Town of
29. Palm Beach County
30. Palm Beach Gardens, City of
31. Palm Beach Shores, Town of
32. Palm Springs, Village of
33. Riviera Beach, City of
34. Royal Palm Beach, Village of
35. South Bay, City of
36. South Indian River Water Control District
37. South Palm Beach, Town of
38. Tequesta, Village of
39. Wellington, Village of
40. West Palm Beach, City of

Report Certification

Joint Report Certification

Northern Palm Beach County Improvement District (Northern) is the Lead Permittee for the above-referenced permit. As the lead permittee for the Palm Beach County MS4 program, Northern has entered into interlocal agreements with each of the other 39 permittees for joint program activities. Northern's governing body (Board of Supervisors) and the NPDES Steering Committee has authorized Mock Roos on their behalf to coordinate the day to day activities of the joint program including preparation and submittal of the joint annual report. Per Rule 62-620.305, Florida Administrative Code.

"I certify under penalty of law that this document and all attachments (excluding Appendices B for Individual Permittee Annual Reports) were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Alan D. Wertepny, P.E.

Vice President Water Resources

Mock Roos



04/07/2021

Permittee Certifications

Certifications for the individual permittee annual reports are included in each individual annual report form, which are attached to this Joint Report as Appendices B.

1.0 Palm Beach County MS4 Program

1.1 Introduction

The Municipal Separate Storm Sewer System (MS4) National Pollutant Discharge Elimination System (NPDES) is a federal program designed to reduce stormwater pollutant discharges to receiving waters of the United States. In 1987, the United States Environmental Protection Agency (EPA) was required under Section 402 (p) of the Clean Water Act (N40CFR Part 112.26) to establish final regulations governing stormwater discharge permit application requirements. In 1990, the Federal Register indicated that Palm Beach County was to begin compliance with the program. In 1997, the first 5-year permit (No. FLS000018) was issued by EPA to Palm Beach County's permittees. In 2001, the Florida Department of Environmental Protection (Department) received delegation from EPA for the MS4 Programs. In November 2002, the Cycle 2 MS4 Permit was issued by the Department. The Cycle 3 permit was issued on March 2, 2011, and the Cycle 4 Permit was issued on September 8, 2016.

1.2 Permittees

There are 40 permittees identified in the Cycle 4 MS4 permit. *Table 1-1* is a list of the designated MS4 NPDES stormwater management program contacts for each of the permittees.

1.3 Steering Committee

To coordinate the joint activities in Palm Beach County's MS4 Program, the permittees established an MS4 Steering Committee in 1991. The seven-member Steering Committee is comprised of two representatives of large municipalities, two representatives of smaller municipalities, one representative from the lead permittee, one representative of special districts, and one representative from Palm Beach County. A list of the current MS4 Steering Committee and administrative personnel is provided in *Table 1-2*. Minutes of all meetings and descriptions of programs overseen by the Steering Committee may be viewed on the Palm Beach County MS4 NPDES website at http://www.pbco-npdes.org. Since 2014 we have had 14,862 visitors to the website.

During the reporting period, the Steering Committee met six times. Permittee representation at the meetings averaged eighty-two percent. Major meeting agenda items included the following:

- Cycle 4, 3rd Year Annual Reports
- Income and Disbursement Reports
- 2020-2021 Program Budget Estimates
- Watershed Pollutant Loading Analysis for All Permittees
- Refresher Training Session
- Water Quality Monitoring Program
- Public Education Program
- FDEP Virtual Audits (15 Permittees)
- Pine Lake and Lake Osborne Total Maximum Daily Load Workshops
- Updates to Standardized Operating Procedures (SOPs) for All Stormwater Management Programs
- MS4 Websites – pbco-npdes.org and StormwaterAndMe.org



1.4 Interlocal Agreements

Northern Palm Beach County Improvement District (Northern) acts as lead permittee for the Palm Beach coalition of permittees. As the lead permittee, Northern re-entered into Interlocal Agreements with each of the other permittees in 2017 for the purposes of identifying duties and responsibilities of the parties and fulfilling the conditions of the Palm Beach County Cycle 4 MS4 permit. Through these Interlocal Agreements, cost sharing for joint activities is provided by each of the permittees.

This joint annual report was reviewed by the permittees and approved by the Steering Committee.

Table 1-1
Permittee Contacts

Appendix No.	Permittee, Address	Name, Title, Telephone
1	Atlantis, City of 260 Orange Tree Drive Atlantis, FL 33462	Steven Mazuk Utilities/Public Works Director (561) 965-1744
2	Belle Glade, City of 110 Dr. Martin Luther King, Jr. Blvd. Belle Glade, FL 33430	Johnny Gooden Asst. Director of Public Works (561) 992-2216
3	Boca Raton, City of 201 West Palmetto Park road Boca Raton, FL 33432	Maurice Morel, P.E. City Civil Engineer (561)446-3425
4	Boynton Beach, City of 124 East Woolbright Road Boynton Beach, FL 33435	Angela A. Prymas, P.E. Stormwater Supervisor (561) 742-6241
5	Cloud Lake, Town of 100 Lang Road Cloud Lake, FL 33406-3222	Dorothy Gravelin Town Clerk (561) 686-2815
6	Delray Beach, City of 434 S. Swinton Avenue Delray Beach, FL 32444-2698	Elsa Gonzales-Soto Project Manager (561) 243-7000, Ext. 7220
7	FDOT – District Four 3400 West Commercial Boulevard Ft. Lauderdale, FL 33309-3421	Ivette Leiva NPDES Coordinator (954) 777-4221
8	FDOT- Turnpike Enterprise P.O. Box 9828 Ft. Lauderdale, FL 33310-9828	Allison Crow NPDES Coordinator (954) 934-1213
9	Glen Ridge, Town of 1501 Glen road West Palm Beach, FL 33406	John J. Deal Town Manager (561) 697-8868
10	Green Acres, City of 5750 Melaleuca Greenacres, FL 33463	Kara Ferris Planning & Engineering Director (561) 642-2040
11	Gulf Stream, Town of 100 Sea Road Gulf Stream, FL 33483-7427	Greg Dunham Town Manager (561) 276-5116
12	Haverhill, Town of 4585 Charlotte Street Haverhill, FL 33417-5911	Todd McLeod, P.E. Town Engineer (561) 689-9500
13	Highland Beach, Town of 3614 South Ocean Blvd. Highland Beach, FL 33487	Pat Roman Public Works Director (561) 243-2084

Appendix No.	Permittee, Address	Name, Title, Telephone
14	Hypoluxo, Town of 7580 S. Federal Highway Hypoluxo, FL 33462	Leonard G. Rubin, P.A. Town Attorney (561) 686-8700
15	Indian Trail Improvement District 13476 61st Street North West Palm Beach, FL 33412-1915	Greg Shafer Director of Stormwater (561) 793-0874
16	Juno Beach, Town of 340 Ocean Drive Juno Beach, FL 33408	Anthony R. Meriano Director of Public Works (561) 626-1122
17	Jupiter, Town of 210 Military Trail Jupiter, FL 33458	David J. Rotar Utility Services Manager (561) 748-2270
18	Jupiter Inlet Colony, Town of 1 Colony Road Jupiter Inlet Colony, FL 33469	Dr. Daniel J. Comerford III Mayor (561) 746-3787
19	Lake Clarke Shores, Town of 1701 Barbados Road West Palm Beach, FL 33406	Damon Gammons Utilities Superintendent (561) 642-7870
20	Lake Park, Town of 650 Old Dixie Highway Lake Park, FL 33403	John Wylie Storm Water Infrastructure Manager (561) 881-3345
21	Lake Worth Beach, City of 7 North Dixie Highway Lake Worth, FL 33461	Judy Love Water Sewer Storm Field Manager (561) 586-1719
22	Lantana, Town of 500 Greynolds Circle Lantana, FL 33462	Jerry Darr Assistant Utilities Director (561) 540-5758
23	Manalapan, Town of 600 S. Ocean Blvd. Manalapan, FL 33462-3398	Linda Stumpf Town Manager (561) 585-9477
24	Mangonia Park, Town of 1755 East Tiffany Drive Mangonia Park, FL 33407	Kenneth Metcalf Town Manager (561) 848-1235
25	Northern Palm Beach County Improvement District 359 Hiatt Drive Palm Beach Gardens, FL 33418	Jared Kneiss Program Administrator (561) 624-7830
26	North Palm Beach, Village of 501 U.S. Highway No. 1 North Palm Beach, FL 33408	Steven Hallock Director of Public Works (561) 691-3440

Appendix No.	Permittee, Address	Name, Title, Telephone
27	Ocean Ridge, Town of 6450 N. Ocean Blvd. Ocean Ridge, FL 33435	Tracey Stevens Town Manager/Finance Director (561) 732-2635
28	Palm Beach, Town of 260 S. County Road Palm Beach, FL 33480	Rob Weber Coastal Program Manager (561) 838-5440
29	Palm Beach County 2300 North Jog Road, 4th Floor West Palm Beach, FL 33411	Bonnie Finneran Environmental Director (561) 233-2400
30	Palm Beach Gardens, City of 10500 North Military Trail Palm Beach Gardens, FL 33410	Todd Engle, P.E. City Engineer (561) 804-7012
31	Palm Beach Shores, Town of 247 Edwards Lane Palm Beach Shores, FL 33404	Alan Welch Public Services Director (561) 844-3457
32	Palm Springs, Village of 226 Cypress Lane Palm Springs, FL 33461	Angela Thul Stormwater Program Coordinator (561) 434-5122
33	Riviera Beach, City of 2391 Avenue L Riviera Beach, FL 33404	Sedrick Clarke Stormwater Coordinator (561) 814-6492
34	Royal Palm Beach, Village of 10996 Okeechobee Blvd. Royal Palm Beach, FL 33411	Paul L. Webster, P.E. Director of Public Works (561) 790-5122
35	South Bay, City of 335 S.W. Second Avenue South Bay, FL 33493	Edgar Kerr Director of Public Works (561) 996-6751
36	South Indian River WCD 15600 Jupiter Farms Road Jupiter, FL 33478	Michael Dillon Manager of Operations (561) 747-0550
37	South Palm Beach, Town of 3577 S. Ocean Blvd. South Palm Beach, FL 33480	Robert Kellogg Town Manager (561) 588-8889
38	Tequesta, Village of 345 Tequesta Drive Tequesta, FL 33469	Matthew Hammond Utility Director (561) 768-0459
39	Wellington, Village of 12300 Forest Hill Boulevard Wellington, FL 33414	Jonathan Reinsvold Village Engineer (561) 791-4052
40	West Palm Beach, City of P. O. Box 3368 West Palm Beach, FL 33402	Stephon Harris Director of Public Utilities (561) 822-2168

Table 1-2

Palm Beach County MS4 Steering Committee

Laurent Van Cott, P.E. Steering Committee Chair For Town of Mangonia Park Southern Design Group, Inc. Phone (561) 758-5285	**Karen Brandon, P.E.** Steering Committee Member For South Indian River Water Control District AECOM Phone (561) 684-3375
Jay Foy, P.E. Steering Committee Vice-Chair For City of Atlantis Stormwater J. Engineering, Inc. Phone (561) 242-0028	**Bonnie Finneran** Steering Committee Member Palm Beach County Phone (561) 233-2400
Cynthia Buisson, P.E. Steering Committee Secretary City of Delray Beach Phone (561) 243-7000, x-4117	**Maurice Morel, P.E.** Steering Committee Member City of Boca Raton Phone (561) 416-3402
Dan Beatty, P.E. Steering Committee Member Northern Palm Beach County Improvement District Phone (561) 624-7830	

Administration – Northern Palm Beach County Improvement District as Lead Permittee	
Alan Wertepny, P.E. Mock, Roos & Associates, Inc. Program Manager Phone (561) 683-3113, x-231	**Betsy S. Burden, Esq**. Caldwell Pacetti Edwards Schoech & Viator LLP Legal Counsel Phone (561) 655-0620
Anne Capelli Mock, Roos & Associates, Inc. Public Education Coordinator Phone (561) 683-3113, x-287	**Laura Ham, CPA** Northern Palm Beach County Improvement District Budget Manager Phone (561) 624-7830
Brian Einkauf Mock, Roos & Associates, Inc. Webmaster Phone (561) 683-3113, x-250	**Tabbatha Marcus** Mock, Roos & Associates, Inc. Administrative Assistant Phone (561) 683-3113, x-264

2.0 Training Program

The Palm Beach County MS4 permit requires that permittees provide training on three topics. Annual follow-up (or "refresher") training is required for those that have received the initial training. The three topics are:

1. Identification & reporting procedures for a suspected illicit discharge or dumping in the MS4 for all appropriate permittee personnel (including field crews, fleet maintenance staff, and inspectors) and contractors. (Part III.A.7.c)
2. Spill prevention, containment & response procedures (including techniques for mitigating pollution from spills) for all appropriate permittee personnel (including field crews, firefighters, fleet maintenance staff, and inspectors). (Part III.A.7.d)
3. Stormwater management and erosion and sedimentation control BMPs for construction sites for site plan reviewers, site operators, and site inspectors. Construction site inspectors must be certified through the Florida Stormwater, Erosion, and Sedimentation Control Inspector Training programs, or equivalent. (Part III.A.9.c)

The Palm Beach County MS4 permittees carry out a joint training program that is available to all permittee personnel, as well as contractors and private individuals.

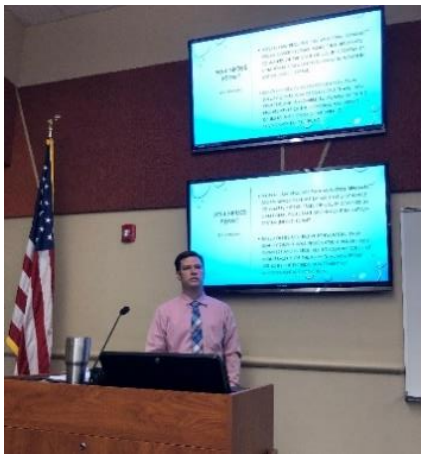
EXCAL Visual Video Training: The illicit discharge, spill prevention, and construction site BMP refresher training topics are covered by one or more EXCAL Visual (www.excalvisual.com) videos presented at a group training session, held at least once each year, typically in March. Attendance logs are maintained for each training session. In addition, the group maintains a lending library of videos for the permittees to borrow anytime for use at in-house training sessions.

EXCAL Visual videos may not be reproduced, but additional copies may be purchased from the vendor to assist in meeting training requirements.

Videos currently in our library at www.pbco-npdes.org (group/joint activities) include:



The Palm Beach County Group training session conducted in 2019/2020 included:



1. A PowerPoint presentation and videos (Ground Control, Spills & Skills and IDDE) covering the three required annual training topics (spill prevention and response, illicit discharge, and sediment and erosion control for construction sites) presented on March 11, 2020. Attendees for the training included 71 representatives from the Palm Beach County MS4 permittees. Some 32 of the 40 permittees were represented at this training session.
2. Florida Stormwater, Erosion and Sedimentation Control Inspector Training Program in person seminar scheduled for May 2020 was cancelled due to COVID 19 restrictions. Training program to resume in May 2021.

3.0 Public Education Program

The Palm Beach County MS4 permittees have undertaken a jointly-funded program to meet the public education requirements of the MS4 permit. In so doing, all permittees participate in conducting the program. The premise of a joint program is that a unified message, repeated throughout the County will have more of an impact than 40 separate messages. The Stormwater and Me (SAM) program, as it is called, kicked off in 2009 and the website has had over 6,140 visitors.

Objective:

The objective of the public education program is to put relevant information in the hands of the residents of and visitors to the Palm Beach County geographic area, so they can make better decisions with respect to pesticides, herbicides, fertilizers, illicit discharges, illegal dumping, and the disposal of household hazardous waste. The intent is that this will result in less of these items ending up in our stormwater systems and, in turn, our water bodies.

Topics:

As prescribed by the MS4 permit, the following topics are covered by the public education program:

- Encourage citizens to reduce their use of pesticides, herbicides, and fertilizers. [Part III.A.6.]
- Promote, publicize and facilitate public reporting of the presence of illicit discharges and improper disposal of materials into the MS4. [Part III.A.7.e.]
- Encourage the proper use and disposal of used motor vehicles fluids, leftover hazardous household products, and lead acid batteries. [Part III.A.7.f.]



Target Audience:

The target audience of the program is residents (children and adults) of and visitors to Palm Beach County, Florida.

Activities and Materials:

This reporting period, the SAM public outreach program included three 30-second Public Service Announcements (PSAs) dealing with pet waste pickup, keeping grass clippings off the streets, and reducing the usage of pesticides, herbicides and fertilizers. The PSAs were aired on five commercial television networks (Discovery, Animal Planet, Weather Channel, HGTV, and CNN), broadcast by a local cable television provider (Comcast) from 6 a.m. to midnight during the months of January 2020 through March 2020 to all broadcast zones within Palm Beach County. A total of 4,230 PSAs were aired. The PSAs were also aired by local/municipal TV stations throughout the year and many permittees play the videos on their website. Copies of the PSAs can be found on the SAM website: StormwaterAndMe.org.



During the 2019-2020 reporting period, the Palm Beach County Extension Service conducted outreach on the Florida Yards and Neighborhoods program and reported that it distributed 6,013 brochures, conducted 13 neighborhood presentations reaching 477 participants, conducted 27 workshops reaching 883 participants, and conducted one special event reaching 225 participants.



UF/IFAS also provided Green Industry BMP training to 98 participants. The County Extension Service has estimated that its outreach program reached about 5.4% of the population in Palm Beach County. Costs for these programs total about $55,000.

The Palm Beach County Solid Waste Authority (SWA) continued to carry out a public education/ outreach program to educate Palm Beach County residents and visitors about proper disposal of household hazardous waste (HHW). Through the MS4 NPDES Interlocal Agreement between Palm Beach County and Northern Palm Beach County Improvement District, SWA continues its program, in part to fulfill the permit requirement that all permittees educate their residents on proper disposal of HHW. During the 2019-2020 reporting period, SWA reported that it distributed 106,550 brochures, collected/recycled/disposed of 2,140 tons of HHW, conducted 185 neighborhood presentations reaching 2,872 participants, distributed seven newsletters, produced 114 displays, aired 4,000 PSAs, conducted 210 school presentations reaching 8,626 participants, conducted 17 workshops reaching 135 participants, and conducted 24 special events reaching 27,190 participants. SWA also hosts a public outreach website at http://www.swa.org/site/hhw/haz_waste_home/hazardous_waste_portal.htm. SWA has estimated that its outreach program reached 80% of the population in Palm Beach County. Costs for these programs total about $4.4 million of which approximately $500,000 is for public education activities.

Methods for Distribution:

The television PSAs allow the greatest opportunity for the distribution of information. In addition, the website, brochures, and meetings allow for the presentation of more in-depth information.

Annual Schedule:

The television PSA campaign effort is run during the months of January through March, when residential population in the County is at its highest. School presentations are in sync with the school calendar. Other outreach activities occur throughout the year.

Documentation:

The Group's Public Education Coordinator, SWA and PBC Extension Services, respectively, maintain record information for all materials distributed.

Responsible Entities:

The program is coordinated by the Palm Beach County MS4 Steering Committee administrative staff. HHW outreach is carried out by the Palm Beach County Solid Waste Authority (SWA) for all permittees under the inter-local agreement with Palm Beach County.

Resources Allocated:

The 2019-2020 allocation for the public education program (not including Palm Beach County Programs) was $35,000.

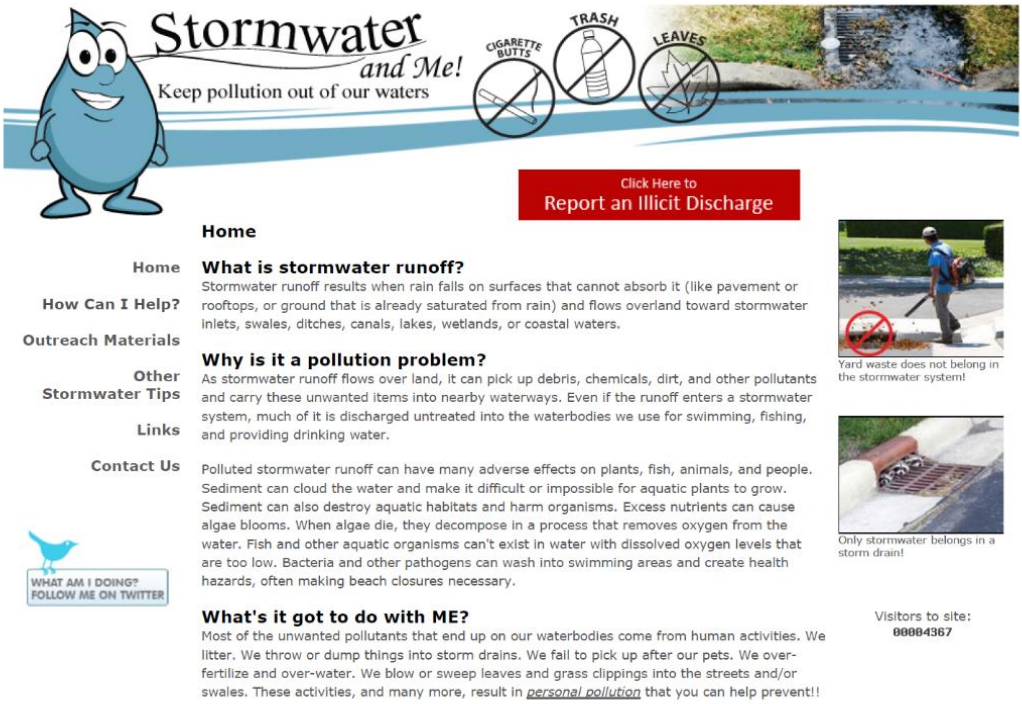
Assessment Method:

The bottom line on the effectiveness of public education is if the receiving waters experience improved water quality. Therefore, the water quality monitoring is offered as a measure of the collective effectiveness of this and other MS4 permit programs.



Public Reporting of Illicit Discharge:

The StormwaterAndMe.org website contains information on stormwater pollution and illicit discharges. Included is a list of contacts for each of the 40 permittees to report an illicit discharge or spill.



4.0 Total Maximum Daily Load (TMDL) Program

4.1 Description

The PBC MS4 permit includes requirements for conducting activities associated with TMDLs that were adopted when the current cycle permit was issued. Activities include the submittal of a schedule for developing an implementation plan to reduce the discharge of pollutants from each TMDL stakeholder permittee's MS4 to the maximum extent practicable. No TMDLs were in place for the Palm Beach County Cycle 1 or Cycle 2 permits. For Cycle 3, there were seven EPA TMDLs that were evaluated and addressed by the applicable MS4s. As of the issuance date of the Cycle 4 permit, there were three additional TMDLs for water bodies within Palm Beach County and these included both the Department and EPA issued TMDLs.

4.2 Established and Adopted TMDLs – Cycle 4

TMDLs established by EPA and verified by the Department or adopted by the Department as of the issuance date of the Cycle 4 permit (September 8, 2016), along with the respective potentially affected permittees, are listed in *Table 4-1*.

Table 4-1

Cycle 4 TMDLs in Palm Beach County

Agency	WBID	Segment Name	Basin	Constituent	TMDL	Percent Reduction	Date	MS4 Stakeholder
EPA	3226C	SW Fork Loxahatchee River	St. Lucie/ Loxahatchee	Fecal Coliform	<43 (counts/100 ml)	93	05/16/12	Jupiter, FDOT, PBC, SIRWCD, Turnpike, NPBCID
EPA	3262A	Lake Ida	Lake Worth Lagoon	Nutrients	TN=0.857 mg/l TP=0.062 mg/l	20 45	11/09/12	Delray, Boynton, FDOT, PBC
FDEP	3364A	E-1 Canal	Lake Worth Lagoon	Fecal Coliform	<400 (counts/100 ml)	94 0	08/31/11	FDOT, PBC

During Year 1 of this permit cycle the eight permittees identified as TMDL stakeholders submitted Prioritization Plans which were approved by the Department. The schedules for implementation activities are identified in *Table 4-2*.

Table 4-2

Cycle 4 Prioritized TMDLs

MS4 Stakeholder	WBID-Waterbody-TMDL	Monitoring Summary Due	BPCP Due	Supplemental SWMP Due
Boynton Beach	3262A- Lake IDA – Nutrients (EPA)	03/31/20	N/A	03/31/21
Delray Beach	3262A- Lake IDA – Nutrients (EPA)	03/31/20	N/A	03/31/21
FDOT District 4	3264A – E-1 Canal – Bacteria	03/31/20	03/31/20	N/A
	Loxahatchee River Pollutant Reduction Plan (3226C)	N/A	N/A	N/A
FDOT Turnpike Enterprise	3226C – SW Loxahatchee River – Pollutant Reduction Plan	N/A	03/31/20	N/A
Jupiter	Loxahatchee River Pollutant Reduction Plan (3226C)	N/A	N/A	N/A
NPBCID	Loxahatchee River Pollutant Reduction Plan (3226C)	03/31/21	03/31/21	N/A
Palm Beach County	3264A – E-1 Canal Bacteria	N/A	03/31/20	N/A
	Loxahatchee River Pollutant Reduction Plan (3226C)	N/A	N/A	N/A
SIRWCD	Loxahatchee River Pollutant Reduction Plan (3226C)	N/A	N/A	N/A

4.3 TMDL Activities

During Year 4, of the Cycle 4 Permit, the MS4 permittees actively participated in TMDL activities to address the identified impairments in the Loxahatchee River (bacteria TMDL) and Lake Ida (nutrients TMDL). The E-1 Canal (bacteria TMDL) was addressed by both FDOT District 4 and Palm Beach County during Year 3 and monitoring confirmed that it is no longer impaired for bacteria.

Southwest Fork Loxahatchee River (WBIDs 3226A, 3226C and 3226D)

For the last four years, stakeholders in the Loxahatchee River Basin have met with the FDEP (DEAR) and the Loxahatchee River Management Coordinating Council (LRMCC) to develop and implement a voluntary plan to reduce nutrient and bacteria contributions and achieve attainment of water quality standards so that the Loxahatchee River would no longer be impaired.

Activities included:

1. Identification of the RAP Boundary
2. Evaluations of the existing water quality data and establishment of a surface water monitoring plan for future assessments
3. Development of a Pollutant Load Screening Model
4. Establishment of baseline and load reduction targets for total nitrogen and total phosphorous
5. Listing of projects that have or will reduce both nutrient and bacterial loadings
6. Stakeholder Involvement
7. Development of a Loxahatchee River Pollutant Reduction Plan

Palm Beach County MS4 permittees participating in these activities and providing management action items (projects) included: the Florida Department of Transportation District IV, Florida Turnpike Enterprise, Town of Jupiter, Palm Beach County, Northern Palm Beach County Improvement District, South Indian River Water Control District, and Village of Tequesta.

Proposed nutrient management activities through 2022 by the various stakeholders are estimated to achieve 87% of the total nitrogen reduction goal and exceed the total phosphorus reduction goal. Since the plan was not able to demonstrate 100% of the nitrogen reduction goal as required for a Reasonable Assurance Plan (RAP), the plan became a Pollutant Reduction Plan (PRP) as of February 2020. The creation of the PRP will delay development of a nutrient TMDL for the next five years while the plan is implemented. A five-year progress report on the planned improvements coupled with water quality monitoring will be reviewed by FDEP to determine progress on meeting the target reduction of loadings. After review, FDEP will work with stakeholders to either amend the PRP or develop a RAP.

Permittees that prioritized WBID 3226C (bacterial TMDL) include: Town of Jupiter, Florida Turnpike, South Indian River Water Control District, and Northern Palm Beach County Improvement District. Information on their respective Bacteria Control Plan and progress report on their planned improvement/activities is contained in their Year 4 Individual Annual Reports.

Lake Ida (WBID 3262A)

Boynton Beach and Delray Beach completed a joint, two-year water quality sampling program which included five sites in Lake Ida. The sampling program confirmed that the lake is not meeting the nutrient TMDL reduction targets (TN 20% and TP 45%) specified in the adopted TMDL. It is estimated that nitrogen and phosphorous loading into Lake Ida by Boynton Beach and Delray Beach is 6% of the entire contributing area. Nonetheless, both Boynton Beach and Delray Beach have implemented stormwater programs and will be adding even more programs to reduce nutrient loading from their MS4s. Information on their reduction strategies is provided in their Individual Annual Reports.

4.4 FDEP Planning List

Although no action is required under the MS4 permit for TMDLs in the planning stage, this information is still tracked by the MS4 group. FDEP has a planning list for future development of TMDLs through 2022. As of January 2020, six water bodies in Palm Beach County were on the FDEP Site-Specific Planning List. The Loxahatchee River Pollutant Reduction Plan addresses three of the water bodies on the planning list (Loxahatchee River WBID 3226D, NW Fork 3226A and SW Fork 3226C) for nutrients. The existence of a PRP effectively places these three future TMDLs on hold for the next five years, leaving three Palm Beach County water bodies remaining – *See Table 4-3.*

Table 4-3

2020 FDEP Planning List for TMDLs in Palm Beach County

WBID	Segment Name	Basin	Parameter	MS4 Stakeholders
3262A	Lake Ida	Lake Worth Lagoon	TP and Chlorophyll-a	Palm Beach County, Delray Beach, Boynton Beach, FDOT-District IV
3245C4	Pine Lake	Lake Worth Lagoon	Chlorophyll-a	Palm Beach County, FDOT – District IV, West Palm Beach
3256A	Lake Osborne	Lake Worth Lagoon	TP and Chlorophyll-a	Palm Beach County, Atlantis, FDOT District IV, Greenacres, Lake Worth Beach, Lantana, FDOT Turnpike

In the latter part of 2019 FDEP DEAR initiated a program to develop nutrient TMDLs to address the water quality impairments in Pine Lake and Lake Osborne. A draft report was released in December 2019 and a public workshop was conducted on January 22, 2020 with the Palm Beach County MS4 stakeholders. All seven affected permittees provided comments. Primarily concerns included accurate delineation of the contributing watershed area for each WBID, sufficiency of applicable water quality data for assessment and model calibration, model input assumptions, model ability to replicate observed conditions, lack of flow data, and properly identifying all stakeholders (MS4s, NPDES Industrial Permittees and non- MS4 owners). To address the concerns, DEAR decided to conduct further investigation and coordination with the permittees. On September 28, 2020, DEAR held a conference call to discuss updates to the model. Discussion included resolution of watershed delineation (Pine Lake and Lake Osborne seasonal variation in contributing area), watershed loading alternatives, and modeling revisions/calibration improvements. DEAR intends to improve the water quality models further to determine nutrient reductions, revise the TMDL document to reflect changes and stakeholder comments, and will hold another public meeting to present the revised TMDLs.

Permittees expressed gratitude to DEAR for including them in the process of the development of the TMDL document and appreciate that their local knowledge of the watersheds is being incorporated into the development process.

5.0 Water Quality Monitoring Program

5.1 Description

In order to provide water quality monitoring data to permittees, and to assist them with their required water quality assessment programs, the group made the decision to continue the +20-year joint ambient water quality monitoring program. The monitoring program includes the following components:

- ambient water quality sampling
- water quality data analyses
- trend analyses
- annual pollutant loading estimates in Year 3 of each permit cycle
- program modifications as needed



The Palm Beach County MS4 NPDES permit monitoring program now includes 44 ambient water quality monitoring sites which were selected after coordination among the South Florida Water Management District (SFWMD), Palm Beach County Environmental Resource Management (ERM), the Loxahatchee River District (LRD), Broward County (BC), and City of West Palm Beach (CWPB).

5.2 Monitoring Sites

Table 5-1 identifies each monitoring site location and provides the site designation, watershed name, the entity conducting the sampling, and the site location northing and easting coordinates. Note that site designations are unique within an individual agency but may be duplicated across agencies. Data for these sites are assigned a unique agency code and station identification in the State's database (dBHydro or WIN/STORET).

Figure 5-1 (two pages) depicts the water quality monitoring site locations and shows the boundaries of the associated watersheds. Sites monitored by ERM are shown as circles, those monitored by the LRD are shown as squares, those monitored by SFWMD are shown as triangles, those monitored by BC are shown as stars and those monitored by CWPB are shown as suns. White symbols signify marine or tidal sites and yellow symbols designate freshwater sites.

The LRD monitors four marine sites and three freshwater sites. ERM monitors 10 marine sites and 15 freshwater sites. The SFWMD monitors five freshwater sites, BC monitors one freshwater and two marine water sites and four CWPB freshwater sites were selected. All of Palm Beach County BC, ERM, LRD and WPB sampling results are in WIN/STORET and SFWMD data is in dBHydro.

The 25 sites monitored by ERM are sampled and initially analyzed in-situ by ERM staff using a multi-parameter water quality monitoring instrument. Water samples are collected, preserved and stored according to the Department Standard Operating Procedures. Quality assurance/quality control measures include pre-cleaned equipment blanks, field cleaned equipment blanks, field spikes, and the collection of duplicate samples.

Further analysis of samples of ERM's 10 Lake Worth Lagoon marine sites is handled by SFWMD. Analysis of the remaining 15 ERM sites is conducted by an independent laboratory under contract with ERM. The water quality parameters and frequency being monitored by ERM, LRD, SFWMD, BC, and CWPB are listed in Table 5-2. For this reporting period some monitoring events were missed. The Lake Worth Lagoon monitoring routinely experiences missed monitoring events due to the monitoring protocol that requires tidal sites to be sampled "immediately at or prior to slack low tide." This allows only +/- 2 times per month when low tide is between 11:00 a.m. and 2:30 p.m., which may occur on weekends. The time on either side of this time frame is necessary for initial calibration, equipment decon, mobilization, travel, boat launch, boat recovery, travel, continuing calibration verification, and paper/tablet documentation work. Monitoring protocol prohibits monitoring during rain. Boating safety requirements prohibit monitoring during lightning events and winds exceeding 20 knots. Mechanical problems such as trailer lights malfunction, and engine problems also result in missed monitoring events.

Table 5-3 (8 pages) provides a list of the parameters and the Florida Surface Water Quality Standards (WQ Standards) as promulgated in Florida Administrative Code (F.A.C.) 62-302.530, 62-302.532, and 62-302.530 (47)(b).

The water quality sampling program in Palm Beach County is a cooperative effort designed to incorporate desirable elements of existing monitoring programs being administered by various agencies throughout the County. Attempts to coordinate sampling frequencies, parameters, and methodologies are ongoing, but not all sampling programs produce results that are compatible for a combined analysis.

Data for a given parameter, location, and event may be unavailable due to the specific goals of that agency's monitoring program or procedural variations, including event frequency, sample depth, methodology, and instrumentation.

5.3 Water Quality Monitoring Results and Exceedances

Standards

State water quality standards have become increasingly complicated in recent years, with differing types of water bodies having different established criteria, such as chlorophyll-a (corrected for pheophytin). Therefore, *Table 5-3* has been prepared to provide a quick reference for determining exceedances in the water bodies being monitored in Palm Beach County. Furthermore, in Class I and Class III freshwater systems, the numeric limits for heavy metals are based on a logarithmic function of the water's total hardness measured at the time of the sampling. Thus, the last page of *Table 5*-3 provides the relationship of hardness to the calculated limit for cadmium, copper, lead, and zinc.

Monitoring Results

The results of the monitoring conducted from October 2019 through September 2020 are provided in *Table 5-4* (44 pages). Analysis result values that were below the limits of detection ("BDL" or "non-detect") have been replaced in *Table 5-4* whenever possible with ½ of the respective minimum detection limit (MDL) value for more reasonable calculated statistics. MDLs were provided by Palm Beach County ERM for results that were reported as BDL within the data set. MDLs are determined by instrumentation and method of analysis. These substitutions in *Table 5-4* have been highlighted in blue. MDL values in excess of the WQ Standard were not counted as exceedances.

Exceedances of the WQ Standards are highlighted in yellow in *Table 5-4*.

For samples where a total hardness was not measured, an exceedance limit for metals could not be calculated, and therefore, no exceedance could be identified.

For those results which require an annual geometric mean (to compare to the standard), the annual geometric mean was calculated for the reporting period (October – September).

Table 5-5 provides a summary of the number of exceedances at each site. Each cell where there was an exceedance provides the number of exceedances and the total number of samples taken at that site during the reporting period. For example, at Site 31E within the C-15 watershed, two dissolved oxygen samples out of six taken were in exceedance of the WQ Standard.

Another summary of exceedances is provided below:

Parameter	Exceedance Location(s)
DO	C-15, C-16, C-18, Lox River, ICWW-S, L-8, S-2-6-7
Fecal coliform	Loxahatchee River
Turbidity	L-8, S-2-6-7, LWL-B
pH	C-17, WPBWS
Chl-a	C-16, Lox River, LWL-N, LWL-C
TP	LWL-C
TN	
Lead	LWL-C
Specific Conductivity	C-16, C51, S-2-6-7
Copper	LWL-N, LWL-C

Comments

The criterion for fecal coliform in the NW and SW Forks of the Loxahatchee River (a natural Class II water body) is extremely low (< 43 cfu/100 ml) compared to all other water body classifications (< 400 cfu/ 100 ml). Potential sources of bacteria are being investigated by the Town of Jupiter and the Loxahatchee River District.

Exceedances of the turbidity in the L-8, S-2-6-7, and C-51 Canals is very likely linked to discharges from Lake Okeechobee.

Exceedances for Specific Conductivity may be attributed to operational water supply releases from Lake Okeechobee and the L-8 Flow Equalization Basin.

Tabular Summaries

A statistical summary of each monitoring site, grouped by watershed, is presented in *Table 5-6* (25 pages). The table includes approximately 22 water quality parameters (21 measured parameters

plus calculated TN) and all sampling events for each site's period of record. The periods of record range from four years to 21 years.

Table 5-7 re-lists the geometric mean values for TN, TP, and Chl-a, at each site for the period of record. Historically, based on Chl-a, TN and/or TP, exceedances of the nutrient criteria have occurred in the Loxahatchee River, the Lake Worth Lagoon (North and Central), and Intracoastal Waterway South. This table highlights the individual monitoring sites where exceedances of water quality standards have occurred.

5.4 Short Terms Trends

To provide the Palm Beach County MS4 permittees with site specific, as well as basin-wide, water quality trend (last ten years) information, historical data charts were developed using a "traffic light" symbology – red for exceedance of the water quality criteria, green for no exceedance, and yellow where there is no numeric standard). Since nutrient impairment is a major concern in Palm Beach County water bodies, Chl-a, TP, and TN were selected for this summary. FDEP has established a state-wide Chl-a numeric standard for all water bodies. However, for TP and TN, there is no numeric criteria for the South Florida Region Canals, resulting in 20 of the 44 monitoring sites without numeric criteria.

Tables 5-8 through *5-10* provide the historic period (2011-2020) of annual geometric mean exceedance for each site for these three nutrient-based water quality parameters. The annual geometric mean calculation for each site is based on a calendar year, while the basin annual geometric mean is calculated using all the sample sites and data within the basin watershed.

The total nitrogen numeric standards (basin averaging of sites) are being met in all 14 watersheds. Individual sites not meeting standards include Site 13 in the Lake Worth Lagoon North and Sites LWL-8, 18C and 18D in the Lake Worth Lagoon Central.

The total phosphorus numeric standards (basin averaging of sites) are being met for 13 of the 14 watersheds. Only Lake Worth Lagoon Central is not meeting the standard. Individual sites not meeting the standards include Site 22 (C-16 - Lake Osborne), Sites 11 and 13 (Lake Worth Lagoon North) and Sites LWL-8, 18C, 18D and LWL- 11 (Lake Worth Lagoon Central), and site LWL-8 in Intercoastal Waterway South.

The Chl-a criterion (basin averaging of sites) is not being met in four watersheds: the C-15, Loxahatchee River (marine/tidal areas of the North, Northwest, and Southwest Forks), and the watersheds of the Lake Worth Lagoon (North and Central) and ICWW-S. Individual sites not meeting the criteria include Sites 31C (C-15); Sites 22, 27A and 27B (C-16); Sites 51, 62 and 72 (Loxahatchee River);

Sites 11, 13, LW-1 and LW-4 (LW-N); Sites 8C, 18D, LWL-8 and LWL-11 (LWL-C); and Site LWL-18 (ICWW-S).

5.5 Long Term Trends

Surface water quality values can have variability driven by seasonal fluctuation, flow variation, changes in watershed, precipitation variation, and other independent variables. Statistical analysis can be used to determine if changes in water quality are part of this variability or if the changes represent a significant water quality trend. The Mann-Kendall Test has been accepted by many governmental agencies as a robust method to evaluate water quality data statistically for trends over time. In this report, the Mann-Kendall Test (M-K) is used to identify surface water quality trends in the nutrient data for each water quality monitoring site. The M-K works well with data that has seasonal variations, violates assumptions of normality required for other regressions, and is resistant to outliers. The M-K can detect monotonic trends that do not double back on themselves. The analysis provides a Kendell Tau that is resistant to power-transforms. This is to say the Kendell Tau for a raw data set, or the same data set transformed would result in the same value. The M-K Test uses a ranked method of analysis. The M-K results contain a Kendell Tau value that is a measurement of the monotonic relationship between X and Y, in this analysis time and concentration. Kendell Tau is a ranked-based correlation measure, therefore, the scale it is evaluated on differs from non-ranked-based correlation measures such as R. Tau will have lower values than other correlation measures such as R. A strong correlation similar to R = 0.9, would be equivalent to Tau = 0.7. Kendell Tau can be calculated by the following Formula:

$$\tau = \frac{S}{\frac{n(n-1)}{2}}$$

In the formula above, the Kendell (S) value is calculated by subtracting the number of “discordant pairs” M, or the pairs that have y (concentration) decreasing as x (time) increases (this is called “M”), from the number of “concordant pairs” where y increases with x (these are called “P”). Kendell S can be written in the for form S = P - M. It should be noted that due to the possible number of comparisons available to compare P and M if all comparisons are increasing Tau would equal one and if all comparisons are decreasing Tau would equal -1.

Sen’s Slope (also called Theil slope) estimator “$\hat{b}_1$“ is closely related to Kendall's S and Tau. Sen’s Slope can be calculated by the following formula for x and y values:

$$\hat{b}_1 = \text{median}\,\frac{(Yj - Yi)}{(Xj - Xi)} \quad \text{for all } i < j \text{ and } i=1,2,...(n-1)\ j=2,3,...n.$$

Thus, Kendell Tau, Kendell S, and Sen's Slope all indicate the direction of the trend. To determine if a trend is significant a p-value must be tested against the null hypothesis "H_o" that Tau = 0. For small sample sized or data pairs, these values can be pulled from a table of p-values based on Kendell S, Kendell Tau, and the number of data pairs "n". When the n is greater than 10 it is more appropriate that the p-value be approximated by a normal distribution Z_s test statistic.

$$\sigma_s = \sqrt{\left(\frac{n}{18}\right) * (n-1) * (2n+5)} \quad , \quad Z_s = \begin{cases} {}^{S-1}/_{\sigma_s} & if\ S > 0 \\ 0 & if\ S = 0 \\ {}^{S+1}/_{\sigma_s} & if\ S < 0 \end{cases}$$

S was defined previously as the Kendell S value. Z_{crit} is the value of α/2, where α is the selected significance level. The H_o is rejected when $|Z_s| > Z_{crit}$. M-K analysis can be used to see the slope and direction of a trend regardless of significances. Though it may be useful to see this trend as a potential indicator of the direction of data. It must be emphasized that rejection of the H_o means there is not enough evidence available to conclude that there is a trend or no trend. An alternative statement of this would be there is not enough evidence to say that the trend is any different than the null hypothesis. For additional information on Kendell Tau, the USGS "Statistical Methods in Water Resources" By D.R. Helsel and R.M. Hirsch, provides examples and narrative on the topic.

Table 5-11 (14 pages) summarizes the results for TN, TP and Chl-a for the period of historical record. Note that while the trends maybe statistically significant, they may not be ecologically significant. Out of the 44 sites, 27 showed statistically significant decreasing trends for TN concentration; nine showed a significant decreasing trend for TP, two showed a statistically significant increasing trend for TP; and four showed a statistically significant deceasing trend for Chl-a. Figures 5-2, 5-3 and 5-4 show the statistical trends, for TN, TP and Chlorophyll-a. Figures 5-5 shows a general example of a decreasing and not significant result while, Figures 5-6 shows an example of decreasing and significant result.

5.6 Pollutant Loading Analyses

The Cycle 4 permit requires each permittee to provide estimates of the average annual pollutant loading for six water quality parameters for each major outfall or major watershed into which they discharge. Each permittee is required to compare the current cycle pollutant loading estimates with the previous cycle pollutant loading estimates. Palm Beach County permittees have elected to provide the pollutant loading estimates on a watershed basis. For consistency, this permit requirement is one of the activities performed by the Group. Permittees provide the needed data and are given the opportunity to

review the model inputs and results. Some 13 major watersheds are included in this analysis. The Lake Worth Lagoon (North and Central) and the northern portion of the Intracoastal Waterway South (ICWWS) were combined as one watershed and identified as the Lake Worth Lagoon (LWL). The 2018 MS4 annual pollutant load estimates were lower than the 2013 estimates for all six water quality parameters, in all 13 watersheds. Information on this analysis was provided in the Year 3, Cycle 4 Joint Annual Report. All 40 permittees reported in their Individual Year 3 reports reductions in nutrient loadings.

5.7 Program Modifications

Generally, the water quality monitoring data and assessments (annual exceedances, historical statistical data, more recent data, trends) show an improvement in the water quality of the receiving water bodies. Consequently, the stormwater management programs implemented by the permittees, as required by the MS4 permit, appear to be effective. No water quality monitoring program modifications are proposed with this year's report.

5.8 Permit Renewal

Pursuant to the Cycle 4 Permit Palm Beach County MS4s are required to submit a reapplication for permit renewal with the Year 4 Annual Report. FDEPs permit coordinator for Palm Beach County permittees provided a checklist. The checklist and responses are included in Appendix A.

Table 5-1
Water Quality Monitoring Site Locations

Watershed	Surface Water Classification	Site Designation	Agency	Marine/ Freshwater	Northing	Easting
C-15	III (Fresh)	31E	ERM	Freshwater	760549.91	916736.89
		31C	ERM	Freshwater	760879.83	943443.02
		31B	ERM	Freshwater	802772.09	964368.10
C-16	III (Fresh)	22	ERM	Freshwater	828280.34	957602.68
		24	ERM	Freshwater	820399.97	957270.70
		27B	ERM	Freshwater	802276.58	916052.08
		27A	ERM	Freshwater	802545.25	942880.04
		28	ERM	Freshwater	760234.13	959303.11
C-17	III (Fresh)	12A	ERM	Freshwater	882520.57	953672.56
		C17S44	SFWMD	Freshwater	903830.19	955552.70
C-18	I (Fresh)	16	ERM	Freshwater	923477.26	902076.42
		15	ERM	Freshwater	901986.07	931378.31
		92	LRD	Freshwater	924685.07	937805.48
		81	LRD	Freshwater	946081.68	935811.57
C-51	III (Fresh)	38B	ERM	Freshwater	854963.27	867962.99
		37B	ERM	Freshwater	853637.29	916592.84
		C51S155	SFWMD	Freshwater	841132.85	964349.43
Lox	III (Fresh)	69	LRD	Freshwater	947071.77	924822.40
	II (Marine)	51	LRD	Marine	954939.97	948224.55
		62	LRD	Marine	938898.36	961525.58
		72	LRD	Marine	946223.78	954573.37
ICWW-N	III (Marine)	30	LRD	Freshwater	961625.76	961625.76
LWL-N	III (Marine)	LWL-1	ERM	Marine	913398.12	964095.22
		11	ERM	Marine	908969.28	962655.71
		13	ERM	Marine	900706.79	964049.58
		LWL-4	ERM	Marine	898346.67	970040.36
LWL-C	III (Marine)	LWL-8	ERM	Marine	856238.64	968284.93
		18C	ERM	Marine	839740.15	969747.03
		18D	ERM	Marine	835593.23	967942.19
		LWL-11	ERM	Marine	830580.53	967926.64
ICWW-S	III (Marine)	LWL-13	ERM	Marine	819086.28	968516.09
		LWL-18	ERM	Marine	798402.11	965585.04
Hillsboro	III (Marine)	1	BC	Marine	724863.71	953909.23
		2	BC	Marine	725864.04	940799.29
	III (Fresh)	3	BC	Freshwater	725348.47	917217.65
		S39	SFWMD	Freshwater	734632.99	888668.58
L-8	III (Fresh)	Culv10	SFWMD	Freshwater	938859.59	778727.09
S-2-6-7	III (Fresh)	S-2	SFWMD	Freshwater	860426.94	748850.27
		39	ERM	Freshwater	855232.20	764581.68
		43	ERM	Freshwater	847294.87	750036.29
WPBWS	II (Fresh)	M-Canal	CWPB	Freshwater	884890.58	908925.59
		Control 4	CWPB	Freshwater	879672.31	943612.31
		Lake Mangonia	CWPB	Freshwater	875721.42	957872.24
		Clear Lake	CWPB	Freshwater	866387.08	959660.53

Table 5-2 Parameter Collection Schedule

Parameter	ERM		SFWMD	LRD	BC
	Freshwater	Marine			
Alkalinity*	--	--	--	M	
Arsenic	BM	Q	--	--	
Cadmium	BM	Q	--	--	
Chlorophyll-a (corrected)	BM	M	--	M	Q
Copper	BM	Q	--	--	
Dissolved Oxygen	BM	M	M	M	Q
Fecal Coliform	--	--	--	M	
Lead	BM	Q	--	--	
Nitrogen, Ammonia	BM	M	M	M	Q
Nitrogen, Nitrate-Nitrite	BM	M	M	M	Q
Nitrogen, Total Kjeldahl	BM	M	M	M	Q
Nitrogen, Total	BM	M	M	M	Q
pH	BM	M	M	M	Q
Phosphorus, Orthophosphate	BM	M	M	M	
Phosphorus, Total	BM	M	M	M	
Salinity†	--	M	--	M	Q
Specific Conductivity	BM	M	M	M	Q
Temperature	BM	M	M	M	Q
Total Hardness (as CaCO3)*	BM	--	--	--	
Total Suspended Solids*	BM	M	M	M	
Turbidity	BM	M	M	M	Q
Zinc*	BM	Q	--	--	

Notes: 1. Not all parameters are collected for every site.
2. LRD - Loxahatchee River District Sites 62, 69, and 72, are sampled monthly. Sites 30, 51, 81, and 92 bi-monthly.
3. ERM – Palm Beach County Environmental Resource Management
4. SFWMD – South Florida Water Management District
5. BC – Broward County

BM (Bi-Monthly)
M (Monthly)
Q (Quarterly)
-- (Not Sampled)

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Table 5-3
Numeric Surface Water Quality Standards by Waterbody

Applicable Class I - Freshwater Canal Peninsula Region Water Quality Criteria		
Site(s):	**C-18** (16, 15, 92, 81)	
Parameter	Units	Criteria
Arsenic	mg/L	≤ 0.01
Cadmium	mg/L	≤ $[e^{(0.7409\ [lnH]\ -4.719)}]\ 10^{-3}$
Chlorophyll-a (corrected)	ug/L	≤ 20 AGM
Copper	mg/L	≤ $[e^{(0.8545\ [lnH]\ -1.702)}]\ 10^{-3}$
Dissolved Oxygen	% Saturation	> 38
Lead	mg/L	≤ $[e^{(1.273\ (lnH)\ -4.705}]\ 10^{-3}$
Nitrogen, Total	mg/L	≤ 1.54 AGM
pH	None	6.0 to 8.5
Phosphorus, Total	mg/L	≤ 0.12 mg/l AGM
Specific Conductivity	umho/cm	≤ 1275
Turbidity	NTU	≤ 29
Zinc	mg/L	≤ $[e^{(0.8473\ [lnH]\ +\ 0.884)}]\ 10^{-3}$

Applicable Class III - Freshwater Lakes Water Quality Criteria		
Site(s):	**C-16** (22 and 24 in Lake Osborne)	
Parameter	Units	Criteria
Arsenic	mg/L	≤ 0.05
Cadmium	mg/L	≤ $[e^{(0.7409\ [lnH]\ -4.719)}]\ 10^{-3}$
Chlorophyll-a (corrected)	ug/L	≤ 20 AGM
Copper	mg/L	≤ $[e^{(0.8545\ [lnH]\ -1.702)}]\ 10^{-3}$
Dissolved Oxygen	% Saturation	> 38
Lead	mg/L	≤ $[e^{(1.273\ (lnH)\ -4.705}]\ 10^{-3}$
Nitrogen, Total	mg/L	1.27 to 2.23 AGM
pH	None	6.0 to 8.5
Phosphorus, Total	mg/L	0.05 to 0.16 AGM
Specific Conductivity	umho/cm	≤ 1275
Turbidity	NTU	≤ 29
Zinc	mg/L	≤ $[e^{(0.8473\ [lnH]\ +\ 0.884)}]\ 10^{-3}$

Notes:
(1) InH means the natural logarithm of total hardness expressed as milligrams/L of $CaCo_3$.
(2) For Freshwater Lakes the Total Nitrogen and Total Phosphorus Minimum Value applies if Chlorophyll-a is > 20 ug/l, Maximum Value also applies if Chlorophyll-a is ≤20 ug/l.
(3) AMG - Annual Geometric Mean
(4) Per Palm Beach County Chain-of-Lakes December 2015 Water Quality Report, Lake Osborne Color >40 Platinum Colbat Units

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Table 5-3
Numeric Surface Water Quality Standards by Waterbody
(Page 2 of 7)

Applicable Class I - Freshwater Canal Peninsula Region Water Quality Criteria		
Site(s):	**C-15** (31E, 31C, 31B), **C-16** (27B, 27A, 28), **C-17** (12A, C17S44) **C-51** (38B, 37B, C51S155), **Lox** (69), **Hillsboro** (3, S39) **L-8** (Culv10), **S-2-6-7** (S-2, 39, 43)	
Parameter	Units	Criteria
Arsenic	mg/L	≤ 0.05
Cadmium	mg/L	$\leq [e^{(0.7409\ [lnH]\ -4.719)}]\ 10^{-3}$
Chlorophyll-a (corrected)	ug/L	≤ 20 AGM
Copper	mg/L	$\leq [e^{(0.8545\ [lnH]\ -1.702)}]\ 10^{-3}$
Dissolved Oxygen	% Saturation	> 38
Lead	mg/L	$\leq [e^{(1.273\ [lnH]\ -4.705)}]\ 10^{-3}$
Nitrogen, Total	mg/L	Narrative
pH	None	6.0 to 8.5
Phosphorus, Total	mg/L	Narrative
Specific Conductivity	umho/cm	≤ 1275
Turbidity	NTU	≤ 29
Zinc	mg/L	$\leq [e^{(0.8473\ [lnH]\ +\ 0.884)}]\ 10^{-3}$

Applicable Class III - Freshwater Lakes Water Quality Criteria		
Site(s):	**Loxahatchee River (51)**	
Parameter	Units	Criteria
Arsenic	mg/L	≤ 0.05
Cadmium	mg/L	≤ 0.0088
Chlorophyll-a (corrected)	ug/L	≤ 4.0 AGM
Copper	mg/L	≤ 0.0037
Dissolved Oxygen	% Saturation	> 42
Fecal	cfu/100 ml	≤ 43
Lead	mg/L	≤ 0.0085
Nitrogen, Total	mg/L	0.80 AGM
pH	None	6.5 to 8.5
Phosphorus, Total	mg/L	0.030 AGM
Specific Conductivity	umho/cm	None
Turbidity	NTU	≤ 29
Zinc	mg/L	≤ 0.086

Notes:
(1) InH means the natural logarithm of total hardness expressed as milligrams/L of $CaCo_3$.
(2) For Freshwater Lakes the Total Nitrogen and Total Phosphorus Minimum Value applies if Chlorophyll-a is > 20 ug/l, Maximum Value also applies of Chlorophyll-a is ≤20 ug/l.
(3) AMG - Annual Geometric Mean
(4) Per Palm Beach County Chain-of-Lakes December 2015 Water Quality Report, Lake Osborne Color >40 Platinum Colbat Units

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Table 5-3
Numeric Surface Water Quality Standards by Waterbody

Applicable Class II - Marine Northwest Fork Water Quality Criteria		
Site(s):	**Loxahatchee River** (62)	
Parameter	Units	Criteria
Arsenic	mg/L	≤ 0.05
Cadmium	mg/L	≤ 0.0088
Chlorophyll-a (corrected)	ug/L	≤ 5.5 AGM
Copper	mg/L	≤ 0.0037
Dissolved Oxygen	% Saturation	> 42
Fecal	cfu/100 ml	≤ 43
Lead	mg/L	≤ 0.0085
Nitrogen, Total	mg/L	< 1.26 AGM
pH	None	6.5 to 8.5
Phosphorus, Total	mg/L	< 0.075 AGM
Specific Conductivity	umho/cm	None
Turbidity	NTU	≤ 29
Zinc	mg/L	≤ 0.086

Applicable Class II - Marine Southwest Fork Water Quality Criteria		
Site(s):	**Loxahatchee River** (72)	
Parameter	Units	Criteria
Arsenic	mg/L	≤ 0.05
Cadmium	mg/L	≤ 0.0088
Chlorophyll-a (corrected)	ug/L	≤ 5.5 AGM
Copper	mg/L	≤ 0.0037
Dissolved Oxygen	% Saturation	> 42
Fecal	cfu/100 ml	≤ 43
Lead	mg/L	≤ 0.0085
Nitrogen, Total	mg/L	≤ 1.26 AGM
pH	None	6.5 to 8.5
Phosphorus, Total	mg/L	≤ 0.075 AGM
Specific Conductivity	umho/cm	None
Turbidity	NTU	≤ 29
Zinc	mg/L	≤ 0.086

Notes:
(1) AGM - Annual Geometric Mean

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Table 5-3
Numeric Surface Water Quality Standards by Waterbody

Applicable Class III - Marine Water Quality Criteria		
Sites:	**Hillsboro** (1 and 2)	
Parameter	Units	Criteria
Arsenic	mg/L	≤ 0.05
Cadmium	mg/L	≤ 0.0088
Chlorophyll-a (corrected)	ug/L	≤ 11 AGM
Copper	mg/L	≤ 0.0037
Dissolved Oxygen	% Saturation	> 42
Lead	mg/L	≤ 0.0085
Nitrogen, Total	mg/L	Narrative
pH	None	6.5 to 8.5
Phosphorus, Total	mg/L	Narrative
Specific Conductivity	umho/cm	None
Turbidity	NTU	≤ 29
Zinc	mg/L	≤ 0.086

Applicable Class III - Marine Water Quality Criteria		
Site(s):	**ICWW-N** (30)	
Parameter	Units	Criteria
Arsenic	mg/L	≤ 0.05
Cadmium	mg/L	≤ 0.0088
Chlorophyll-a (corrected)	ug/L	≤ 4.7 AGM
Copper	mg/L	<0.0037
Dissolved Oxygen	% Saturation	> 42
Enterococci Bacteria	cfu/100mL	≤ 130 Count TPTV
Lead	mg/L	≤ 0.0085
Nitrogen, Total	mg/L	≤ 0.66 AGM
pH	None	6.5 to 8.5
Phosphorus, Total	mg/L	≤ 0.035 AGM
Specific Conductivity	umho/cm	None
Turbidity	NTU	≤ 29
Zinc	mg/L	≤ 0.086

Notes:
(1) AGM - Annual Geometric Mean
(2) TPTV - Ten Percent Threshold Value shall not be exceeded in more than 10% of the measurement
(3) Narrative - Shall not cause an imbalance in flora and fauna

Table 5-3
Numeric Surface Water Quality Standards by Waterbody

Applicable Class III - Marine Water Quality Criteria		
Site(s):	**Lake Worth Lagoon North** (LWL-1, 11, 13, LWL-4)	
Parameter	Units	Criteria
Arsenic	mg/L	≤ 0.05
Cadmium	mg/L	≤ 0.0088
Chlorophyll-a (corrected)	ug/L	≤ 2.9 AGM
Copper	mg/L	≤ 0.0037
Dissolved Oxygen	% Saturation	> 42
Lead	mg/L	≤ 0.0085
Nitrogen, Total	mg/L	≤ 0.54 AGM
pH	None	6.5 to 8.5
Phosphorus, Total	mg/L	≤ 0.044 AGM
Specific Conductivity	umho/cm	None
Turbidity	NTU	≤ 29
Zinc	mg/L	≤ 0.086

Applicable Class III - Marine Water Quality Criteria		
Site(s):	**Lake Worth Lagoon Central** (LWL-8, 18C, 18D, LWL-11)	
Parameter	Units	Criteria
Arsenic	mg/L	≤ 0.05
Cadmium	mg/L	≤ 0.0088
Chlorophyll-a (corrected)	ug/L	≤ 10.2 TPTV
Copper	mg/L	≤ 0.0037
Dissolved Oxygen	% Saturation	> 42
Lead	mg/L	≤ 0.0085
Nitrogen, Total	mg/L	≤ 0.66 AGM
pH	None	6.5 to 8.5
Phosphorus, Total	mg/L	≤ 0.049 AGM
Specific Conductivity	umho/cm	None
Turbidity	NTU	≤ 29
Zinc	mg/L	≤ 0.086

Notes:
(1) AGM - Annual Geometric Mean
(2) TPTV - Ten Percent Threshold Value shall not be exceeded in more than 10% of the measurement

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Table 5-3
Numeric Surface Water Quality Standards by Waterbody

Applicable Class III - Marine Water Quality Criteria		
Site(s):	**ICWW-S** (LWL-13 and LWL-18)	
Parameter	Units	Criteria
Arsenic	mg/L	≤ 0.05
Cadmium	mg/L	≤ 0.0088
Chlorophyll-a (corrected)	ug/L	≤ 5.7 AGM
Copper	mg/L	≤ 0.0037
Dissolved Oxygen	% Saturation	> 42
Lead	mg/L	≤ 0.0085
Nitrogen, Total	mg/L	≤ 0.59 AGM
pH	None	6.5 to 8.5
Phosphorus, Total	mg/L	≤ 0.050 AGM
Specific Conductivity	umho/cm	None
Turbidity	NTU	≤ 29
Zinc	mg/L	≤ 0.086

Applicable Class I - Freshwater Canal South Florida Region Water Quality Criteria		
Site(s):	**City of West Palm Beach Water Supply Canals** (M-Canal, Control 4)	
Parameter	Units	Criteria
Arsenic	mg/L	≤ 0.01
Cadmium	mg/L	$\leq [e^{(0.7409\ [lnH]\ -4.719)}]\ 10^{-3}$
Chlorophyll-a (corrected)	ug/L	≤ 20 AGM
Copper	mg/L	$\leq [e^{(0.8545\ [lnH]\ -1.702)}]\ 10^{-3}$
Dissolved Oxygen	% Saturation	> 38
Lead	mg/L	$\leq [e^{(1.273\ [lnH]\ -4.705)}]\ 10^{-3}$
Nitrogen, Total	mg/L	Narrative
pH	None	6.0 to 8.5
Phosphorus, Total	mg/L	Narrative
Specific Conductivity	umho/cm	≤ 1275
Turbidity	NTU	≤ 29
Zinc	mg/L	$\leq [e^{(0.8473\ [lnH]\ +\ 0.884)}]\ 10^{-3}$

Notes:
(1) AGM - Annual Geometric Mean
(2) Narrative - Shall not cause an imbalance in flora and fauna

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Table 5-3
Numeric Surface Water Quality Standards by Waterbody
(Page 7 of 7)

Applicable Class II - Freshwater Lakes Water Quality Criteria		
Site(s):	**City of West Palm Beach Water Supply Canals** (Lake Mangonia and Clear Lake)	
Parameter	Units	Criteria
Arsenic	mg/L	≤ 0.01
Cadmium	mg/L	$\leq [e^{(0.7409\ [lnH]\ -4.719)}]\ 10^{-3}$
Chlorophyll-a (corrected)	ug/L	≤ 20 AGM
Copper	mg/L	$\leq [e^{\ (0.8545\ [lnH]\ -1.702)}]\ 10^{-3}$
Dissolved Oxygen	% Saturation	> 38
Lead	mg/L	$\leq [e^{(1.273\ (lnH]\ -4.705}]\ 10^{-3}$
Nitrogen, Total	mg/L	1.05 to 1.91 AGM
pH	None	6.0 to 8.5
Phosphorus, Total	mg/L	0.03 to 0.09 AGM
Specific Conductivity	umho/cm	≤ 1275
Turbidity	NTU	≤ 29
Zinc	mg/L	$\leq [e^{\ (0.8473\ [lnH]\ +\ 0.884)}]\ 10^{-3}$

Notes:
(1) AGM - Annual Geometric Mean

(2) For Freshwater Lakes the Total Nitrogen and Total Phosphorus Minimum Value applies if Chlorphyll-a is >20ug/l, Maximum Value applies if Chlorophyll-a is ≤20ug/l.

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Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

C-15 Watershed Monitoring Events

SITE 31E	SAMPLE DATE	11/21/19	2/5/20	3/26/20	5/6/20	7/23/20	9/10/20							Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036								≤ 0.05
Cadmium	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002								See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L	15.8	14.5	6.1	22.7	42.1	21.8							17.5	≤ 20 AGM
Copper	mg/L	0.0079	0.0047	0.0049	0.0041	0.0013	0.0013								See Table 5-3, page 2
Dissolved Oxygen	% Saturation	65.0	70.6	59.6	73.5	10.1	27.8								> 38
Fecal Coliform	cfu/100mL														
Lead	mg/L	0.0023	0.0023	0.0023	0.0023	0.0023	0.0023								See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.075	0.018	0.059	0.018	0.450	0.160								
Nitrogen, nitrate + nitrite	mg/L	0.250	0.017	0.040	0.0165	0.017	0.0165								
Nitrogen, Total	mg/L	1.35	1.02	1.00	1.22	1.52	0.60							1.07	Narrative
Nitrogen, Total Kjeldahl	mg/L	1.1	1	0.96	1.2	1.5	0.58								
pH	None	7.72	7.62	7.51	7.69	7.34	7.44								6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.2900	0.130	0.120	0.16	0.450	0.069								
Phosphorus, Total	mg/L	0.3500	0.1900	0.1900	0.24	0.5100	0.15							0.248	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	540	571	529	653	548	429								≤ 1275
Temperature	deg C	21.3	21.3	26.6	28.7	28.0	29.5								
Total Hardness	mg/L	215	214	190	220	217									
Total Suspended Solids	mg/L	2.5	5.4	2.5	2.5	2.5	2.5								
Turbidity	NTU	5.4	3.9	2.1	3	2.4	3.7								≤ 29
Zinc	mg/L	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055								See Table 5-3, page 2

• Metal exceedences are based on hardness

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

•AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

C-15 Watershed Monitoring Events

SITE 31C	SAMPLE DATE	11/21/19	2/5/20	3/26/20	5/6/20	7/23/20	9/10/20							Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036								≤ 0.05
Cadmium	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002								See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L	10.6	6.5	7.6	18.2	30.4	11.5							12.2	≤ 20 AGM
Copper	mg/L	0.0038	0.0038	0.0013	0.0013	0.0046	0.0013								See Table 5-3, page 2
Dissolved Oxygen	% Saturation	39.5	42.9	78.4	110.1	64.0	38.4								> 38
Fecal Coliform	cfu/100mL														
Lead	mg/L	0.0023	0.0023	0.0023	0.0023	0.0023	0.0023								See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.230	0.140	0.059	0.018	0.110	0.099								
Nitrogen, nitrate + nitrite	mg/L	0.170	0.190	0.017	0.0165	0.056	0.079								
Nitrogen, Total	mg/L	1.12	1.07	0.70	0.81	1.06	1.08							0.96	Narrative
Nitrogen, Total Kjeldahl	mg/L	0.95	0.88	0.68	0.79	1	1								
pH	None	7.53	7.21	7.49	7.61	7.49	7.24								6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0940	0.085	0.064	0.031	0.150	0.055								
Phosphorus, Total	mg/L	0.1300	0.1200	0.1100	0.089	0.2200	0.1							0.122	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	492.7	512	492	475	466	487								≤ 1275
Temperature	deg C	22.3	23.0	26.9	29.3	28.5	29.1								
Total Hardness	mg/L	193	201	188	171	172									
Total Suspended Solids	mg/L	2.5	2.5	2.5	6	2.5	2.5								
Turbidity	NTU	1.4	1.4	1.8	2	2.0	2.4								≤ 29
Zinc	mg/L	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055								See Table 5-3, page 2

• Metal exceedences are based on hardness

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

•AGM - Annual Geometric Mean

Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2019- September 2020

C-15 Watershed Monitoring Events

SITE 31B	SAMPLE DATE	11/21/19	2/5/20	3/26/20	5/6/20	7/23/20	9/10/20							Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036								≤ 0.05
Cadmium	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002								See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L	20.7	4.8	16.7	11.7	20.1	5.6							11.4	≤ 20 AGM
Copper	mg/L	0.0046	0.0029	0.0029	0.0035	0.0038	0.0013								See Table 5-3, page 2
Dissolved Oxygen	% Saturation	81.0	89.0	118.5	119.9	50.7	75.2								> 38
Fecal Coliform	cfu/100mL														
Lead	mg/L	0.0023	0.0023	0.0023	0.0023	0.0023	0.0023								See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.018	0.018	0.059	0.018	0.096	0.018								
Nitrogen, nitrate + nitrite	mg/L	0.230	0.035	0.017	0.0165	0.083	0.0165								
Nitrogen, Total	mg/L	1.08	0.66	1.12	0.80	0.99	0.79							0.89	Narrative
Nitrogen, Total Kjeldahl	mg/L	0.85	0.62	1.1	0.78	0.91	0.77								
pH	None	8.09	8.07	8.30	8.40	7.43	7.65								6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0890	0.051	0.027	0.0019	0.140	0.055								
Phosphorus, Total	mg/L	0.1400	0.0800	0.0930	0.051	0.1900	0.095							0.099	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	512	502	472	436	483	439								≤ 1275
Temperature	deg C	21.7	20.4	27.3	29.2	28.6	30.8								
Total Hardness	mg/L	204	188	178	150	179									
Total Suspended Solids	mg/L	2.5	2.5	2.5	2.5	2.5	2.5								
Turbidity	NTU	2.2	1.0	3.1	2.9	1.7	2								≤ 29
Zinc	mg/L	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055								See Table 5-3, page 2

• Metal exceedences are based on hardness

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

•AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

C-16 Watershed Monitoring Events

SITE 22	SAMPLE DATE	11/19/19	2/4/20	3/24/20	5/5/20	7/21/20	9/8/20							Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036								≤ 0.05
Cadmium	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002								See Table 5-3, page 1
Chlorophyll-a (corrected)	ug/L	32.7	31.7	12.8	15.8	29.9	15.2							21.4	≤ 20 AGM
Copper	mg/L	0.0013	0.0013	0.0013	0.0013	0.0028	0.0013								See Table 5-3, page 8
Dissolved Oxygen	% Saturation	98.9	102.1	107.3	99.2	95.6	101.9								> 38
Fecal Coliform	cfu/100mL														
Lead	mg/L	0.0023	0.0023	0.0023	0.0023	0.0023	0.0023								See Table 5-3, page 1
Nitrogen, Ammonia	mg/L	0.018	0.018	0.016	0.018	0.018	0.018								
Nitrogen, nitrate + nitrite	mg/L	0.075	0.039	0.017	0.0165	0.017	0.0165								
Nitrogen, Total	mg/L	0.90	0.85	0.87	1.02	1.12	0.88							0.93	≤ 2.23 AGM
Nitrogen, Total Kjeldahl	mg/L	0.82	0.81	0.85	1	1.1	0.86								
pH	None	8.22	8.10	8.22	8.26	8.00	8.18								6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0070	0.002	0.004	0.0019	0.004	0.0019								
Phosphorus, Total	mg/L	0.0610	0.0530	0.0530	0.064	0.0770	0.056							0.060	≤ 0.16 AGM
Salinity	ppth														
Specific Conductivity	umho/cm	466	523	526	449	425	405								≤ 1275
Temperature	deg C	21.9	20.6	27.4	27.4	30.6	31.6								
Total Hardness	mg/L	186	204	182	144	167									
Total Suspended Solids	mg/L	6.4	2.5	2.5	10	2.5	6								
Turbidity	NTU	2.8	2.8	2.9	4.9	5.1	3.7								≤ 29
Zinc	mg/L	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055								See Table 5-3, page 1

• Metal exceedences are based on hardness

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

C-16 Watershed Monitoring Events

SITE 24	SAMPLE DATE	11/19/19	2/4/20	3/24/20	5/5/20	7/21/20	9/8/20							Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036								≤ 0.05
Cadmium	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002								See Table 5-3, page 1
Chlorophyll-a (corrected)	ug/L	9.5	21.4	21.7	26.2	23.5	22.2							19.8	≤ 20 AGM
Copper	mg/L	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013								See Table 5-3, page 1
Dissolved Oxygen	% Saturation	95.9	72.3	98.4	77.8	111.5	124.2								> 38
Fecal Coliform	cfu/100mL														
Lead	mg/L	0.0023	0.0023	0.0023	0.0023	0.0023	0.0023								See Table 5-3, page 1
Nitrogen, Ammonia	mg/L	0.018	0.018	0.016	0.018	0.018	0.018								
Nitrogen, nitrate + nitrite	mg/L	0.064	0.017	0.017	0.0165	0.017	0.0165								
Nitrogen, Total	mg/L	0.67	0.06	0.06	1.32	0.06	0.06							0.15	≤ 2.23 AGM
Nitrogen, Total Kjeldahl	mg/L	0.61	0.043	0.043	1.3	0.043	0.043								
pH	None	8.01	7.78	8.02	7.97	8.34	8.31								6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0110	0.002	0.002	0.0019	0.002	0.0019								
Phosphorus, Total	mg/L	0.0400	0.0014	0.0039	0.088	0.0014	0.0014							0.006	≤ 0.16 AGM
Salinity	ppth														
Specific Conductivity	umho/cm	444	510	519	451	394	402.8								≤ 1275
Temperature	deg C	21.7	19.9	27.5	27.3	30.9	31.7								
Total Hardness	mg/L	171	199	184	145	152									
Total Suspended Solids	mg/L	2.5	5.1	2.5	13.5	2.5	7								
Turbidity	NTU	1.3	2.9	3.2	7.4	7.4	4.4								≤ 29
Zinc	mg/L	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055								See Table 5-3, page 1

• Metal exceedences are based on hardness

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• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

C-16 Watershed Monitoring Events

SITE 27B	SAMPLE DATE	11/21/19	2/5/20	3/26/20	5/6/20	7/23/20	9/10/20							Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036								≤ 0.05
Cadmium	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002								See Table 5-3, page 1
Chlorophyll-a (corrected)	ug/L	47.0	22.9	10.7	14	17.5	12.1							18.0	≤ 20 AGM
Copper	mg/L	0.0048	0.0052	0.0013	0.003	0.0081	0.0013								See Table 5-3, page 1
Dissolved Oxygen	% Saturation	127.1	72.0	67.9	84.1	40.2	20.7								> 38
Fecal Coliform	cfu/100mL														
Lead	mg/L	0.0023	0.0023	0.0023	0.0023	0.0023	0.0023								See Table 5-3, page 1
Nitrogen, Ammonia	mg/L	0.018	0.018	0.118	0.018	0.400	0.018								
Nitrogen, nitrate + nitrite	mg/L	0.017	0.620	0.017	0.0165	0.420	0.0165								
Nitrogen, Total	mg/L	1.32	2.02	1.12	1.12	1.72	0.06							0.84	Narrative
Nitrogen, Total Kjeldahl	mg/L	1.3	1.4	1.1	1.1	1.3	0.043								
pH	None	8.42	7.49	7.66	7.97	7.34	7.38								6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.4700	0.240	0.019	0.0056	0.340	0.0019								
Phosphorus, Total	mg/L	0.5700	0.3400	0.0940	0.064	0.4400	0.0043							0.114	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	592	612	630	813	477	482								≤ 1275
Temperature	deg C	21.1	20.6	26.7	28.8	26.8	29.6								
Total Hardness	mg/L	249	240	247	244	150									
Total Suspended Solids	mg/L	5.8	2.5	2.5	9.5	8.0	2.5								
Turbidity	NTU	4.7	2.6	2.7	3.3	10.2	1.7								≤ 29
Zinc	mg/L	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055								See Table 5-3, page 1

• Metal exceedences are based on hardness

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• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

C-16 Watershed Monitoring Events

SITE 27A	SAMPLE DATE	11/21/19	2/5/20	3/26/20	5/6/20	7/23/20	9/10/20							Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036								≤ 0.05
Cadmium	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002								See Table 5-3, page 1
Chlorophyll-a (corrected)	ug/L	13.6	7.2	10.5	25.4	19.2	3.4							10.9	≤ 20 AGM
Copper	mg/L	0.0049	0.0037	0.0039	0.0013	0.0041	0.0013								See Table 5-3, page 1
Dissolved Oxygen	% Saturation	90.1	90.4	103.4	118.4	21.6	62.5								> 38
Fecal Coliform	cfu/100mL														
Lead	mg/L	0.0023	0.0023	0.0023	0.0023	0.0023	0.0023								See Table 5-3, page 1
Nitrogen, Ammonia	mg/L	0.018	0.018	0.059	0.018	0.220	0.018								
Nitrogen, nitrate + nitrite	mg/L	0.017	0.017	0.017	0.0165	0.092	0.0165								
Nitrogen, Total	mg/L	0.91	0.06	0.93	0.94	1.19	1.02							0.62	Narrative
Nitrogen, Total Kjeldahl	mg/L	0.89	0.043	0.91	0.92	1.1	1								
pH	None	8.76	8.07	8.12	8.01	7.42	7.82								6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.2300	0.002	0.007	0.0019	0.200	0.038								
Phosphorus, Total	mg/L	0.2800	0.0049	0.0550	0.058	0.2600	0.086							0.068	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	522	487.7	479	439	501	439								≤ 1275
Temperature	deg C	21.2	21.0	26.4	28.3	28.3	30.5								
Total Hardness	mg/L	209	187	166	159	191									
Total Suspended Solids	mg/L	2.5	2.5	2.5	8	2.5	2.5								
Turbidity	NTU	2.3	1.3	1.9	3.6	2.7	2.8								≤ 29
Zinc	mg/L	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055								See Table 5-3, page 1

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• Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

C-16 Watershed Monitoring Events

SITE 28	SAMPLE DATE	11/21/19	2/5/20	3/26/20	5/6/20	7/23/20	9/10/20							Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036								≤ 0.05
Cadmium	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002								See Table 5-3, page 1
Chlorophyll-a (corrected)	ug/L	11.6	6.4	16.9	20.4	16.8	17.4							14.0	≤ 20 AGM
Copper	mg/L	0.0013	0.0040	0.0013	0.0013	0.0030	0.0028								See Table 5-3, page 1
Dissolved Oxygen	% Saturation	64.8	96.0	105.1	136.0	48.2	78.1								> 38
Fecal Coliform	cfu/100mL														
Lead	mg/L	0.0023	0.0023	0.0023	0.0023	0.0023	0.0023								See Table 5-3, page 1
Nitrogen, Ammonia	mg/L	0.018	0.018	0.059	0.018	0.018	0.018								
Nitrogen, nitrate + nitrite	mg/L	0.017	0.041	0.017	0.0165	0.017	0.0165								
Nitrogen, Total	mg/L	0.06	0.66	0.06	0.06	0.06	0.88							0.14	Narrative
Nitrogen, Total Kjeldahl	mg/L	0.043	0.62	0.043	0.043	0.043	0.86								
pH	None	7.75	7.82	8.01	8.47	7.46	7.54								6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0019	0.016	0.002	0.0019	0.002	0.013								
Phosphorus, Total	mg/L	0.0035	0.0460	0.0045	0.0029	0.0014	0.061							0.008	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	454	481.3	492	440	447	409								≤ 1275
Temperature	deg C	21.4	20.8	27.2	29.3	28.7	30.5								
Total Hardness	mg/L	176	174	177	161	175									
Total Suspended Solids	mg/L	2.5	2.5	2.5	2.5	2.5	2.5								
Turbidity	NTU	1.6	1.2	1.9	5.3	2.2	2.4								≤ 29
Zinc	mg/L	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055								See Table 5-3, page 1

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• Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

C-17 Watershed Monitoring Events

SITE 12A	SAMPLE DATE	11/19/19	2/4/20	3/24/20	5/5/20	7/21/20	9/8/20							Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036								≤ 0.05
Cadmium	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002								See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L	20.6	11.5	17.7	9.5	19.7	12.7							14.7	≤ 20 AGM
Copper	mg/L	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013								See Table 5-3, page 2
Dissolved Oxygen	% Saturation	59.7	73.8	72.4	58.1	78.0	52.6								> 38
Fecal Coliform	cfu/100mL														
Lead	mg/L	0.0023	0.0023	0.0023	0.0023	0.0023	0.0023								See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.120	0.082	0.016	0.018	0.060	0.190								
Nitrogen, nitrate + nitrite	mg/L	0.190	0.140	0.017	0.0165	0.076	0.083								
Nitrogen, Total	mg/L	1.29	1.14	1.22	0.06	1.01	0.91							0.68	Narrative
Nitrogen, Total Kjeldahl	mg/L	1.1	1	1.2	0.043	0.93	0.83								
pH	None	7.59	7.60	7.75	7.65	7.62	7.65								6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0062	0.005	0.002	0.0019	0.004	0.0049								
Phosphorus, Total	mg/L	0.0950	0.0650	0.0900	0.0036	0.0750	0.062							0.046	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	458	459.6	495	481.9	372	403.2								≤ 1275
Temperature	deg C	21.2	20.1	26.9	27.6	29.7	30.5								
Total Hardness	mg/L	178	177	176	170	139									
Total Suspended Solids	mg/L	2.5	2.5	2.5	2.5	2.5	2.5								
Turbidity	NTU	8.4	2.6	4.8	3.1	4.0	4								≤ 29
Zinc	mg/L	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055							0.0055	See Table 5-3, page 2

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• Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

C-17 Watershed Monitoring Events

SITE C17S44	SAMPLE DATE	10/10/19	11/14/19	1/9/20	2/13/20	3/12/20	4/9/20	5/14/20	6/11/20	7/16/20	8/13/20	9/10/20		Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L														≤ 20 AGM
Copper	mg/L														See Table 5-3, page 2
Dissolved Oxygen	% Saturation	63.4	67.8	68.5	89.9	106.9	92.4	80.8	66.7	55.9	89.8	54.6			> 38
Fecal Coliform	cfu/100mL														
Lead	mg/L														See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.059	0.056	0.085	0.023	0.018	0.003	0.006	0.033	0.012	0.048	0.031			
Nitrogen, nitrate + nitrite	mg/L	0.026	0.118	0.273	0.079	0.013	0.0025	0.003	0.054	0.005	0.022	0.026			
Nitrogen, Total	mg/L	0.94	0.91	0.96	0.79	0.68	0.67	0.82	0.77	0.63	0.74	0.74		0.78	Narrative
Nitrogen, Total Kjeldahl	mg/L														
pH	None	7.70	7.60	7.60	8.00	7.70	8.00	7.70	7.50	7.40	7.80	8.10			6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0090	0.016	0.034	0.007	0.004	0.001	0.001	0.018	0.016	0.02	0.027			
Phosphorus, Total	mg/L	0.0600	0.0530	0.0570	0.041	0.0290	0.022	0.0370	0.064	0.0510	0.057	0.0670		0.046	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	459	464	485	480	471	459	416	409	420	414	444			≤ 1275
Temperature	deg C	28.3	24.5	20.0	23.9	22.6	27.3	25.0	28.6	30.4	31.9	30.0			
Total Hardness	mg/L														
Total Suspended Solids	mg/L	1.5	5.0	3.0	1.5	1.5	1.5	3.0	3	1.5	1.5	1.5			
Turbidity	NTU	1.9	1.8	1.1	0.9	0.7	0.7	2.8	1.9	1.4	1.3	1.2			≤ 29
Zinc	mg/L														See Table 5-3, page 2

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Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

C-18 Watershed Monitoring Events

SITE 16	SAMPLE DATE	11/19/19	2/4/20	3/24/20	5/5/20	7/21/20	9/8/20							Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036								≤ 0.01
Cadmium	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002								See Table 5-3, page 1
Chlorophyll-a (corrected)	ug/L	5.9	5.9	8.3	10.8	9.9	3.3							6.8	≤ 20 AGM
Copper	mg/L	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013								See Table 5-3, page 1
Dissolved Oxygen	% Saturation	48.8	52.6	78.7	98.8	46.2	54.5								> 38
Fecal Coliform	cfu/100mL														
Lead	mg/L	0.0023	0.0023	0.0023	0.0023	0.0023	0.0023								See Table 5-3, page 1
Nitrogen, Ammonia	mg/L	0.018	0.072	0.016	0.018	0.110	0.072								
Nitrogen, nitrate + nitrite	mg/L	0.017	0.017	0.017	0.0165	0.017	0.0165								
Nitrogen, Total	mg/L	0.06	1.01	1.12	0.95	1.00	0.91							0.62	≤ 1.54 AGM
Nitrogen, Total Kjeldahl	mg/L	0.043	0.99	1.1	0.93	0.98	0.89								
pH	None	7.42	7.23	7.63	8.03	7.44	7.58								6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0019	0.002	0.002	0.0019	0.002	0.0019								
Phosphorus, Total	mg/L	0.0014	0.0360	0.0480	0.04	0.0700	0.054							0.027	≤ 0.12 mg/l AGM
Salinity	ppth														
Specific Conductivity	umho/cm	350	318	493	568	430	428.4								≤ 1275
Temperature	deg C	20.7	18.5	25.5	26.5	29.0	29.2								
Total Hardness	mg/L	145	125	207	227	171									
Total Suspended Solids	mg/L	2.5	2.5	5.9	11	9.0	9								
Turbidity	NTU	2.2	2.3	4.0	3.7	6.1	5.9								≤ 29
Zinc	mg/L	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055								See Table 5-3, page 1

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• Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

C-18 Watershed Monitoring Events

SITE 15	SAMPLE DATE	11/19/19	2/4/20	3/24/20	5/5/20	7/21/20	9/8/20							Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036								≤ 0.01
Cadmium	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002								See Table 5-3, page 1
Chlorophyll-a (corrected)	ug/L	1.1	1.5	1.2	4	0.5	0.5							1.1	≤ 20 AGM
Copper	mg/L	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013								See Table 5-3, page 1
Dissolved Oxygen	% Saturation	44.3	38.8	27.5	20.1	19.7	23.2								> 38
Fecal Coliform	cfu/100mL														
Lead	mg/L	0.0023	0.0023	0.0023	0.0023	0.0023	0.0023								See Table 5-3, page 1
Nitrogen, Ammonia	mg/L	0.018	0.018	0.035	0.053	0.018	0.018								
Nitrogen, nitrate + nitrite	mg/L	0.017	0.017	0.017	0.0165	0.017	0.0165								
Nitrogen, Total	mg/L	0.61	0.69	0.76	0.82	0.74	0.62							0.70	≤ 1.54 AGM
Nitrogen, Total Kjeldahl	mg/L	0.59	0.67	0.74	0.8	0.72	0.6								
pH	None	7.20	7.03	7.23	7.28	7.14	7.66								6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0042	0.002	0.002	0.0019	0.002	0.0019								
Phosphorus, Total	mg/L	0.0061	0.0082	0.0170	0.027	0.0080	0.0082							0.011	≤ 0.12 mg/l AGM
Salinity	ppth														
Specific Conductivity	umho/cm	284	271.1	356	399	247	243.4								≤ 1275
Temperature	deg C	18.9	16.5	24.4	26.5	27.8	27.1								
Total Hardness	mg/L	109	98.3	133	151	97.4									
Total Suspended Solids	mg/L	2.5	5.3	2.5	2.5	2.5	2.5								
Turbidity	NTU	0.4	0.4	1.2	1.5	0.5	0.65								≤ 29
Zinc	mg/L	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055								See Table 5-3, page 1

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• Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
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C-18 Watershed Monitoring Events

Site 92	SAMPLE DATE	11/19/19	2/11/20	5/19/20										Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L	133	278	210											
Arsenic	mg/L														≤ 0.01
Cadmium	mg/L														See Table 5-3, page 1
Chlorophyll-a (corrected)	ug/L	5.0	3.0	2.5										3.3	≤ 20 AGM
Copper	mg/L														See Table 5-3, page 1
Dissolved Oxygen	% Saturation														> 38
Fecal Coliform	cfu/100mL	10	110	121											
Lead	mg/L														See Table 5-3, page 1
Nitrogen, Ammonia	mg/L	0.110	0.130	0.070											
Nitrogen, nitrate + nitrite	mg/L	0.055	0.228	0.002											
Nitrogen, Total	mg/L	1.06	1.00	0.50										0.81	≤ 1.54 AGM
Nitrogen, Total Kjeldahl	mg/L														
pH	None	7.30	7.36	6.81											6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0080	0.024	0.025											
Phosphorus, Total	mg/L	0.0130	0.0610	0.0430										0.032	≤ 0.12 mg/l AGM
Salinity	ppth	0.2	0.4	0.4											
Specific Conductivity	umho/cm	437	674	737											≤ 1275
Temperature	deg C	22.2	22.7	25.7											
Total Hardness	mg/L														
Total Suspended Solids	mg/L														
Turbidity	NTU	2.3	8.6	3.0											≤ 29
Zinc	mg/L														See Table 5-3, page 1

• Metal exceedences are based on hardness

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2019- September 2020

C-18 Watershed Monitoring Events

Site 81	SAMPLE DATE	12/17/20	3/9/20	6/15/20										Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L	118	145	85											
Arsenic	mg/L														≤ 0.01
Cadmium	mg/L														See Table 5-3, page 1
Chlorophyll-a (corrected)	ug/L	10.4	2.3	12.9										6.8	≤ 20 AGM
Copper	mg/L														See Table 5-3, page 1
Dissolved Oxygen	% Saturation														> 38
Fecal Coliform	cfu/100mL	20	63	31											
Lead	mg/L														See Table 5-3, page 1
Nitrogen, Ammonia	mg/L	0.070	0.120												
Nitrogen, nitrate + nitrite	mg/L	0.030	0.023	0.005											
Nitrogen, Total	mg/L	0.83	0.80	1.00										0.87	≤ 1.54 AGM
Nitrogen, Total Kjeldahl	mg/L														
pH	None	7.10	8.03	7.35											6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0070	0.003	0.007											
Phosphorus, Total	mg/L	0.0240	0.0150	0.0340										0.023	≤ 0.12 mg/l AGM
Salinity	ppth	0.2	0.3	0.1											
Specific Conductivity	umho/cm	371	645	300											≤ 1275
Temperature	deg C	24.1	21.3	29.7											
Total Hardness	mg/L														
Total Suspended Solids	mg/L														
Turbidity	NTU	1.4	1.1	1.6											≤ 29
Zinc	mg/L														See Table 5-3, page 1

• Metal exceedences are based on hardness

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

C-51 Watershed Monitoring Events

SITE 38B	SAMPLE DATE	11/20/19	2/5/20	3/25/20	5/7/20	7/24/20								Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L	0.0036	0.0036	0.0036	0.0036	0.0036									≤ 0.05
Cadmium	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002									See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L	69.7	31.6	9.4	18.9	7.3								19.6	≤ 20 AGM
Copper	mg/L	0.0013	0.0013	0.0013	0.0013	0.0013									See Table 5-3, page 2
Dissolved Oxygen	% Saturation	92.8	119.1	90.7	90.7	46.9									> 38
Fecal Coliform	cfu/100mL														
Lead	mg/L	0.0023	0.0023	0.0023	0.0023	0.0023									See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.018	0.037	0.059	0.018	0.270									
Nitrogen, nitrate + nitrite	mg/L	0.130	0.290	0.017	0.36	0.017									
Nitrogen, Total	mg/L	2.13	1.69	1.52	1.96	1.52								1.7	Narrative
Nitrogen, Total Kjeldahl	mg/L	2	1.4	1.5	1.6	1.5									
pH	None	8.39	8.35	8.29	8.29	7.99									6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0072	0.074	0.004	0.026	0.002									
Phosphorus, Total	mg/L	0.1200	0.1700	0.0580	0.062	0.0510								0.082	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	1490.2	903	1123	1123	1101									≤ 1275
Temperature	deg C	20.1	21.8	26.7	26.7	28.6									
Total Hardness	mg/L	351	253	295	270	291									
Total Suspended Solids	mg/L	17.0	9.4	2.5	5.5	11.5									
Turbidity	NTU	11.8	9.6	6.0	5.3	5.8									≤ 29
Zinc	mg/L	0.0055	0.0055	0.0055	0.0055	0.0055									

• Metal exceedences are based on hardness

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• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

C-51 Watershed Monitoring Events

SITE 37B	SAMPLE DATE	11/20/19	2/5/20	3/25/20	5/7/20	7/24/20								Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L	0.0036	0.0036	0.0036	0.0036	0.0036									≤ 0.05
Cadmium	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002									See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L	4.4	10.1	7.5	15.8	7.3								8.3	≤ 20 AGM
Copper	mg/L	0.0013	0.0013	0.0013	0.0013	0.0033									See Table 5-3, page 2
Dissolved Oxygen	% Saturation	60.4	69.8	58.0	58.0	60.2									> 38
Fecal Coliform	cfu/100mL														
Lead	mg/L	0.0023	0.0023	0.0023	0.0023	0.0023									See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.018	0.078	0.059	0.018	0.018									
Nitrogen, nitrate + nitrite	mg/L	0.017	0.110	0.066	0.0165	0.017									
Nitrogen, Total	mg/L	0.06	0.86	0.76	0.06	0.06								0.2	Narrative
Nitrogen, Total Kjeldahl	mg/L	0.043	0.75	0.69	0.043	0.043									
pH	None	8.05	7.68	7.58	7.58	7.75									6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0019	0.002	0.002	0.0019	0.002									
Phosphorus, Total	mg/L	0.0063	0.0270	0.0340	0.056	0.0014								0.014	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	624	721	684	684	564									≤ 1275
Temperature	deg C	21.5	21.8	26.8	26.8	29.0									
Total Hardness	mg/L	252	259	266	238	223									
Total Suspended Solids	mg/L	2.5	2.5	2.5	7	2.5									
Turbidity	NTU	1.3	1.5	1.2	3.3	1.5									≤ 29
Zinc	mg/L	0.0055	0.0055	0.0055	0.0055	0.0055									See Table 5-3, page 2

• Metal exceedences are based on hardness

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• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

C-51 Watershed Monitoring Events

SITE C51S155	SAMPLE DATE	10/17/19	11/14/19	1/9/20	2/6/20	3/5/20	4/2/20	5/14/20	6/11/20	7/9/20	8/6/20	9/3/20		Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L	0.0	6.4	3.5	0.018	0.1	12.9	0.0	17	20.3	0.018	32.1		0.7	≤ 20 AGM
Copper	mg/L														See Table 5-3, page 2
Dissolved Oxygen	% Saturation	111.6	54.1	67.5	77.7	101.7	85.0	61.1	59.0	86.4	88.9	86.5			> 38
Fecal Coliform	cfu/100mL														
Lead	mg/L														See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.023	0.040	0.097	0.041	0.007	0.003	0.094	0.196	0.009	0.038	0.015			
Nitrogen, nitrate + nitrite	mg/L	0.087	0.197	0.291	0.124	0.003	0.0025	0.030	0.865	0.006	0.029	0.007			
Nitrogen, Total	mg/L	0.88	0.93	0.85	0.74	0.67	1.05	0.93	0.89	0.88	0.97	0.92		0.9	Narrative
Nitrogen, Total Kjeldahl	mg/L														
pH	None	7.90	7.50	7.60	7.60	8.00	8.10	7.80	7.70	7.70	7.60	7.70			6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0010	0.017	0.022	0.003	0.002	0.012	0.009	0.056	0.004	0.001	0.002			
Phosphorus, Total	mg/L	0.0690	0.0470	0.0320	0.034	0.0360	0.073	0.0740	0.073	0.0670	0.068	0.0510		0.054	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	488	480	546	638	600	555	466	719	423	489	432			≤ 1275
Temperature	deg C	28.1	25.0	21.2	21.0	22.7	26.7	25.2	30.1	30.0	29.9	31.1			
Total Hardness	mg/L	1	1	0.5	1	1	1	1	1	1	1				
Total Suspended Solids	mg/L	4.0	5.0	1.5	1.5	1.5	2	5.0	6	3.0	4	6.0			
Turbidity	NTU	2.7	3.7	2.0	1.5	1.6	2.8	4.5	3.9	2.4	2.9	3.2			≤ 29
Zinc	mg/L														See Table 5-3, page 2

• Metal exceedences are based on hardness

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• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

Loxahatchee River Watershed Monitoring Events

SITE 69 (Lox)	SAMPLE DATE	10/15/19	11/19/19	1/14/20	2/11/20	3/9/20	4/7/20	5/19/20	6/15/20	7/13/20				Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L	170	144	120	202	207	217	192	115	148					
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L	3.4	3.1	2.9	8.1	3.1	1.7	3.2	6.2	5.6				3.7	≤ 20 AGM
Copper	mg/L														See Table 5-3, page 2
Dissolved Oxygen	% Saturation	45.3	57.2	62.2	54.6	54.4	46.5	65.2	39.5	32.8					> 38
Fecal Coliform	cfu/100mL	31	10	10	20	350	41	121	85	292					
Lead	mg/L														See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.050	0.110	0.043	0.060	0.080	0.190	0.090	0.160	0.100					
Nitrogen, nitrate + nitrite	mg/L	0.151	0.117	0.106	0.143	0.047	0.045	0.031	0.025	0.047					
Nitrogen, Total	mg/L	1.25	0.92	0.90	0.70	0.70	0.70	0.60	1.10	0.90				0.8	Narrative
Nitrogen, Total Kjeldahl	mg/L	1.1	0.8	0.8	0.6	0.7	0.7	0.6	1.1	0.9					
pH	None	7.22	7.20	7.01	7.40	7.58	7.71	7.55	6.97	7.16					6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0190	0.013	0.008	0.014	0.010	0.022	0.020	0.017	0.020					
Phosphorus, Total	mg/L	0.0420	0.0190	0.0320	0.032	0.0260	0.035	0.0290	0.049	0.0420				0.033	Narrative
Salinity	ppth	0.3	0.3	0.2	0.3	0.4	0.4	0.3	0.2	0.2					
Specific Conductivity	umho/cm	556	511	418	526	744.2	784	667	373	500					≤ 1275
Temperature	deg C	27.0	21.5	23.1	21.4	20.7	24.9	26.2	29.5	29.6					
Total Hardness	mg/L														
Total Suspended Solids	mg/L	1.4	0.9	1.7	1.5	1.3	1.5	1.0	3.2	1.5					
Turbidity	NTU	1.7	1.6	2.0	2.1	1.7	1.7	1.6	3	1.6					≤ 29
Zinc	mg/L														See Table 5-3, page 2

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• AGM - Annual Geometric Mean

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

Loxahatchee River Watershed Monitoring Events

SITE 51 (Lox)	SAMPLE DATE	10/16/19	1/29/20	2/26/20	3/25/20	4/29/20	5/27/20	6/30/20	7/29/20					Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L	132	125			130			90						
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														≤ 0.0088
Chlorophyll-a (corrected)	ug/L	4.0	7.3			2.4			10.2					5.2	≤ 4 AGM
Copper	mg/L														≤ 0.0037
Dissolved Oxygen	% Saturation	89.7	87.6	92.6	90.6	95.4	65.5	74.9	70.8						> 42
Fecal Coliform	cfu/100mL	10	41			10			173						
Lead	mg/L														See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.040	0.035			0.030			0.040						
Nitrogen, nitrate + nitrite	mg/L	0.005	0.014			0.002			0.004						
Nitrogen, Total	mg/L	0.21	0.60			0.30			0.90					0.43	≤ .8 AGM
Nitrogen, Total Kjeldahl	mg/L	0.2	0.6			0.3			0.9						
pH	None	7.83	7.73	7.83	7.56	7.81	7.92	7.55	7.55						6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0100	0.006			0.002			0.018						
Phosphorus, Total	mg/L	0.0160	0.0240			0.0160			0.044					0.023	≤ .03 AGM
Salinity	ppth	32.5	33.72	30.99	36.16	35.7	4.8	17	11.1						
Specific Conductivity	umho/cm	49731.8	51219	47576.4	54511	54019	8692	27891	18856						None
Temperature	deg C	27.7	22.5	23.9	26.3	24.9	26.2	32.3	31.1						
Total Hardness	mg/L														
Total Suspended Solids	mg/L	4.8	6.4			8.9			3.7						
Turbidity	NTU	2.2	4.6			5.4			3.2						≤ 29
Zinc	mg/L														See Table 5-3, page 2

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• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.
• AGM - Annual Geometric Mean

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

Loxahatchee River Watershed Monitoring Events (Marine)

SITE 62 (Lox)	SAMPLE DATE	10/15/19	11/19/19	1/29/20	2/26/20	3/25/20	4/29/20	5/27/20	6/30/20	7/29/20				Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L	147	136	117	140	143	143	156	97	132					
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														≤ 0.0088
Chlorophyll-a (corrected)	ug/L	7.7	2.3	3.9	4.5	5.0	2.2	5.4	3.1	2.8				3.8	≤ 5.5 AGM
Copper	mg/L														<0.0037
Dissolved Oxygen	% Saturation	80.2	65.5	84.5	89.4	77.4	81.8	59.9	59.8	61.1					> 42
Fecal Coliform	cfu/100mL	10	148	97	20	10	10	20	52	160					≤ 43 cfu/100ml
Lead	mg/L														≤ 0.0085
Nitrogen, Ammonia	mg/L	0.040	0.100	0.035	0.050	0.080	0.020	0.050	0.120	0.100					
Nitrogen, nitrate + nitrite	mg/L	0.036	0.102	0.100	0.065	0.005	0.011	0.002	0.065	0.083					
Nitrogen, Total	mg/L	0.54	0.80	0.80	0.80	0.50	0.50	0.50	1.20	0.90				0.69	≤ 1.26 AGM
Nitrogen, Total Kjeldahl	mg/L	0.5	0.7	0.7	0.7	0.5	0.5	0.5	1.1	0.8					
pH	None	7.57	7.36	7.60	7.66	7.22	7.56	7.94	7.99	7.94					6.5 to 8.5
Phosphorus, orthophosphate	mg/L	0.0280	0.027	0.021	0.021	0.012	0.024	0.023	0.047	0.036					
Phosphorus, Total	mg/L	0.0390	0.0330	0.0460	0.036	0.0280	0.033	0.0420	0.083	0.0640				0.042	≤ 0.075 AGM
Salinity	ppth	21.7	12.2	22.39	17.93	21.48	24.7	0.4	2.1	0.3					
Specific Conductivity	umho/cm	34567.7	20317.9	35522	29035.8	34216	38901	718	4066	634					None
Temperature	deg C	27.1	21.1	21.5	23.9	26.7	26.1	26.9	31.4	29.5					
Total Hardness	mg/L														
Total Suspended Solids	mg/L	3.4	2.1	3.8	3.9	6.7	5.4	5.0	2.6	5.1					
Turbidity	NTU	1.5	1.9	3.2	2.8	4.2	3.1	2.8	3	4.8					≤ 29
Zinc	mg/L														≤ 0.086

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• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.
• AGM - Annual Geometric Mean

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

Loxahatchee River Watershed Monitoring Events (Marine)

SITE 72	SAMPLE DATE	10/16/19	11/19/19	1/14/20	2/11/20	3/9/20	4/6/20	5/19/20	6/15/20	7/14/20				Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L	138	134	127	135	133	130	121	135	141					
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														≤ 0.0088
Chlorophyll-a (corrected)	ug/L	24.2	4.5	4.5	4.2	6.6	11.2	6.5	6.8	27.8				8.3	≤ 5.5 AGM
Copper	mg/L														<0.0037
Dissolved Oxygen	% Saturation	72.9	71.3	89.9	85.5	95.9	69.8	72.8	68.8	112.3					> 42
Fecal Coliform	cfu/100mL	52	374	168	323	52	160	146	183	75					≤ 43 cfu/100ml
Lead	mg/L														≤ 0.0085
Nitrogen, Ammonia	mg/L	0.040	0.260	0.100	0.160	0.020	0.050	0.260	0.170	0.030					
Nitrogen, nitrate + nitrite	mg/L	0.005	0.038	0.080	0.045	0.002	0.013	0.039	0.04	0.003					
Nitrogen, Total	mg/L	0.61	0.44	0.90	1.10	0.40	0.40	0.50	1.00	0.70				0.63	≤ 1.26 AGM
Nitrogen, Total Kjeldahl	mg/L	0.6	0.4	0.8	1.1	0.4	0.4	0.5	1	0.7					
pH	None	7.69	7.66	7.66	7.74	7.89	7.84	7.48	7.27	7.78					6.5 to 8.5
Phosphorus, orthophosphate	mg/L	0.0130	0.023	0.023	0.014	0.002	0.007	0.008	0.041	0.009					
Phosphorus, Total	mg/L	0.0600	0.0640	0.0410	0.03	0.0270	0.034	0.0220	0.062	0.0470				0.040	≤ 0.075 AGM
Salinity	ppth	30.6	31.7	18.7	9	33.1	35	32.6	10.4	29.8					
Specific Conductivity	umho/cm	47109.9	48559.4	33316	15418.6	50440.5	52966	49898	17670	46188					None
Temperature	deg C	27.8	23.3	23.4	22.2	19.1	24.8	27.0	29.1	31.0					
Total Hardness	mg/L														
Total Suspended Solids	mg/L	5.3	4.0	3.3	3.4	11.5	22.1	6.5	1.9	7.4					
Turbidity	NTU	3.9	1.9	2.7	2.9	6.4	6.3	3.7	1.6	4.1					≤ 29
Zinc	mg/L														≤ 0.086

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• AGM - Annual Geometric Mean • Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2020 - September 2021
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ICWW-N Watershed Monitoring Events

SITE 30 (Lox)	SAMPLE DATE	10/16/19	1/29/20	2/26/20	3/25/20	4/29/20	5/27/20	6/30/20	7/29/20					Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L	133	126			132			132						
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														≤ 0.0088
Chlorophyll-a (corrected)	ug/L	5.3	2.9			3.9			6.9					4.5	≤ 4.7 AGM
Copper	mg/L														<0.0037
Dissolved Oxygen	% Saturation	79.2	84.8	92.2	80.9	82.7	72.4	80.2	75.7						> 42
Fecal Coliform	cfu/100mL	31	31			10			20						≤ 130 cfu/100ml
Lead	mg/L														≤ 0.0085
Nitrogen, Ammonia	mg/L														
Nitrogen, nitrate + nitrite	mg/L	0.019	0.031			0.011			0.003						
Nitrogen, Total	mg/L	0.22	0.50			0.40			0.40					0.36	≤ 0.66 AGM
Nitrogen, Total Kjeldahl	mg/L	0.2	0.5			0.4			0.4						
pH	None	7.66	7.76	7.82	7.48	7.61	7.52	7.54	7.56						6.5 to 8.5
Phosphorus, orthophosphate	mg/L	0.0150	0.011			0.005			0.012						
Phosphorus, Total	mg/L	0.0230	0.0240			0.0230			0.031					0.025	≤ 0.035 AGM
Salinity	ppth	32	34.57	31.28	35.94	35.2	17.4	29.2	25.4						
Specific Conductivity	umho/cm	49146.6	52373	47973.7	54224	53324	28331	45440	40075						None
Temperature	deg C	27.7	21.6	23.6	26.3	25.6	26.2	31.2	30.4						
Total Hardness	mg/L														
Total Suspended Solids	mg/L	6.1	8.0			8.5			4.6						
Turbidity	NTU	2.2	4.4			3.3			2.3						≤ 29
Zinc	mg/L														≤ 0.086

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• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.
• AGM - Annual Geometric Mean • Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2020 - September 2021

Lake Worth Lagoon North Watershed Monitoring Events (Marine)

SITE LWL-1	SAMPLE DATE	10/10/19	11/7/19	1/23/20	2/20/20	4/16/20	5/14/20	6/18/20	7/16/20	8/26/20	9/16/20			Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														≤ 0.0088
Chlorophyll-a (corrected)	ug/L		3.8	0.0	3.73	4.1	6.94		2.77	5.6	4.66			2.4	≤ 2.9 AGM
Copper	mg/L														≤ 0.0037
Dissolved Oxygen	% Saturation		100.9	103.8	111.0	96.9	94.7		105.1	92.8	89.1				> 42
Fecal Coliform	cfu/100mL														
Lead	mg/L														≤ 0.0085
Nitrogen, Ammonia	mg/L		0.008	0.019	0.003	0.008	0.003		0.005	0.005	0.003				
Nitrogen, nitrate + nitrite	mg/L		0.003	0.024	0.0025	0.003	0.0025		0.0025	0.003	0.0025				
Nitrogen, Total	mg/L		0.33	0.31	0.21	0.32	0.30		0.36	0.40	0.30			0.31	≤ 0.54 AGM
Nitrogen, Total Kjeldahl	mg/L														
pH	None			8.00	7.90	7.90	7.80		7.90	7.90	7.80				6.5 to 8.5
Phosphorus, orthophosphate	mg/L		0.008	0.014	0.007	0.010	0.003		0.024	0.019	0.015				
Phosphorus, Total	mg/L		0.0510	0.0300	0.028	0.0270	0.032		0.05	0.0440	0.04			0.037	≤ 0.044 AGM
Salinity	ppth		30.7	31.2	31.2	34.4	34.9		29	29.2	30				
Specific Conductivity	umho/cm		47329	47823	47970	52370	52978		45105	45417	46393				None
Temperature	deg C		27.7	20.0	26.4	28.5	25.9		32.2	30.8	30.8				
Total Hardness	mg/L														
Total Suspended Solids	mg/L		7.0	4.0	7	1.5	8		5	5.0	7				
Turbidity	NTU		0.2	0.8	1.1	1.0	2		0.8	1.0	0.6				≤ 29
Zinc	mg/L														≤ 0.086

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• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

Lake Worth Lagoon North Watershed Monitoring Events (Marine)

SITE 11	SAMPLE DATE	10/9/19	11/7/19	1/23/20	2/10/20	3/19/20	4/16/20	5/14/20	6/22/20	7/8/20	8/26/20	9/1/20		Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L	0.3550	0.0036	0.0036	0.0036	0.0178	0.0071	0.0036	0.0036	0.0036	0.0036	0.0036			≤ 0.05
Cadmium	mg/L	0.0165	0.0002	0.0002	0.0002	0.0002	0.0003	0.0002	0.0002	0.0002	0.0002	0.0002			≤ 0.0088
Chlorophyll-a (corrected)	ug/L	4.5	4.6	4.0	1.8	3.4	2.6	2.6	11.9	0.5	0.5	0.5		2.173	≤ 2.9 AGM
Copper	mg/L	0.0026	0.0042	0.0035	0.003	0.0065	0.0026	0.0013	0.0027	0.0013	0.0013	0.0013			≤ 0.0037
Dissolved Oxygen	% Saturation	77.9	80.7	95.4	94.8	92.6	92.6	93.2	91.3	93.8	88.1	90.2			> 42
Fecal Coliform	cfu/100mL														
Lead	mg/L	0.2300	0.0051	0.0067	0.0023	0.0023	0.0046	0.0023	0.0023	0.0023	0.0023	0.0023			≤ 0.0085
Nitrogen, Ammonia	mg/L	0.018	0.018	0.018	0.018	0.016	0.018	0.018	0.018	0.018	0.018	0.018			
Nitrogen, nitrate + nitrite	mg/L	0.013	0.017	0.017	0.0165	0.017	0.0165	0.017	0.0165	0.017	0.0165	0.017			
Nitrogen, Total	mg/L	0.06	0.20	0.34	0.27	0.28	0.30	0.32	0.06	0.06	0.27	0.31		0.18	≤ 0.54 AGM
Nitrogen, Total Kjeldahl	mg/L	0.043	0.18	0.32	0.25	0.26	0.28	0.3	0.043	0.043	0.25	0.29			
pH	None	8.14		7.92	7.86	7.82	7.87	7.80	7.84	7.88	7.87	7.96			6.5 to 8.5
Phosphorus, orthophosphate	mg/L	0.0350	0.034	0.030	0.028	0.029	0.049	0.040	0.0019	0.002	0.031	0.027			
Phosphorus, Total	mg/L	0.0650	0.0480	0.0520	0.054	0.0480	0.055	0.0540	0.0014		0.047	0.0420		0.036	≤ 0.044 AGM
Salinity	ppth	32.23	30.38	30.89	31.89	34.28	35.62	35.97	24.42	33.96	30.28	30.76			
Specific Conductivity	umho/cm	48421	46879	47447	48800	51771	54020	53852	38996	51877	51990	47529			None
Temperature	deg C	28.3	27.7	18.9	22.4	26.0	28.1	25.8	29.8	30.5	30.7	31.0			
Total Hardness	mg/L	5750	5570	6120								5160			
Total Suspended Solids	mg/L	14.6	33.5	2.7											
Turbidity	NTU	1.6	0.4	2.1	2.3	1.8	1.5	1.9	2	0.1	0.75	1.1			≤ 29
Zinc	mg/L	0.5500	0.0055	0.0112	0.0055	0.0055	0.0110	0.0055	0.0055	0.0055	0.0055	0.0055			≤ 0.086

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• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

Lake Worth Lagoon North Watershed Monitoring Events (Marine)

SITE 13	SAMPLE DATE	10/9/19	11/7/19	1/23/20	2/10/20	3/19/20	4/16/20	5/14/20	6/22/20	7/8/20	8/26/20	9/1/20		Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L	0.0168	0.0036	0.0036	0.0036	0.0355	0.0071	0.0036	0.0036	0.0071	0.0036	0.0036			≤ 0.05
Cadmium	mg/L	0.0003	0.0002	0.0002	0.0002	0.0002	0.0003	0.0002	0.0002	0.0003	0.0002	0.0002			≤ 0.0088
Chlorophyll-a (corrected)	ug/L	6.3	6.6	5.6	4.3	3.8	3.4	2.0	4.1	3.0	0.5	0.5		2.8	≤ 2.9 AGM
Copper	mg/L	0.0026	0.0013	0.0032	0.0027	0.0046	0.0026	0.0013	0.0013	0.0026	0.0013	0.0013			≤ 0.0037
Dissolved Oxygen	% Saturation	85.2	59.9	92.4	92.9	90.9	85.6	95.9	90.0	89.0	86.2	86.8			> 42
Fecal Coliform	cfu/100mL														
Lead	mg/L	0.0046	0.0023	0.0049	0.0023	0.0023	0.0046	0.0023	0.0023	0.0046	0.0023	0.0023			≤ 0.0085
Nitrogen, Ammonia	mg/L	0.018	0.018	0.018	0.018	0.016	0.018	0.018	0.018	0.018	0.018	0.018			
Nitrogen, nitrate + nitrite	mg/L	0.013	0.046	0.076	0.0165	0.017	0.0165	0.017	0.0165	0.017	0.0165	0.017			
Nitrogen, Total	mg/L	0.22	0.28	0.37	0.06	0.31	0.30	0.30	0.34	0.24	0.27	0.06		0.22	≤ 0.54 AGM
Nitrogen, Total Kjeldahl	mg/L	0.21	0.23	0.29	0.043	0.29	0.28	0.28	0.32	0.22	0.25	0.043			
pH	None	8.16		7.93	7.88	7.83	7.82	7.83	7.90	7.82	7.83	7.82			6.5 to 8.5
Phosphorus, orthophosphate	mg/L	0.0330	0.035	0.032	0.025	0.030	0.049	0.040	0.029	0.037	0.029	0.002			
Phosphorus, Total	mg/L	0.0660	0.0680	0.0530	0.0014	0.0530	0.11	0.0520	0.037		0.054	0.0014		0.028	≤ 0.044 AGM
Salinity	ppth	32.36	29.58	26.73	24.88	32.55	34.99	35.81	26.6	32.81	29.12	25.25			
Specific Conductivity	umho/cm	49606	45767	41452	37336	49791	53087	54163	41819	50334	45252	39847			None
Temperature	deg C	28.2	28.0	20.0	22.7	26.3	28.2	25.1	29.9	30.9	30.9	31.5			
Total Hardness	mg/L	5110	4630	5130	4770							0.255			
Total Suspended Solids	mg/L	21.6	28.8	2.5	12.6										
Turbidity	NTU	2.8	0.3	1.7	3.1	2.2	1.7	1.1	1.1	1.2	1.2	1.4			≤ 29
Zinc	mg/L	0.0110	0.0055	0.0055	0.0055	0.0055	0.0110	0.0055	0.0055	0.0110	0.0055	0.0055			≤ 0.086

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• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.
• AGM - Annual Geometric Mean

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Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

Lake Worth Lagoon North Watershed Monitoring Events (Marine)

SITE LWL-4	SAMPLE DATE	10/10/19	11/7/19	1/23/20	2/20/20	4/16/20	5/14/20	6/18/20	7/16/20	8/26/20	9/16/20			Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														≤ 0.0088
Chlorophyll-a (corrected)	ug/L	5.5	4.3	2.4	0.912	2.8	1.87	3.1	3.61	1.2	2.33			2.5	≤ 2.9 AGM
Copper	mg/L														≤ 0.0037
Dissolved Oxygen	% Saturation	109.3	94.5	104.1	98.3	86.4	94.7	93.9	115.7	100.7	104.4			99.9	> 42
Fecal Coliform	cfu/100mL														
Lead	mg/L														≤ 0.0085
Nitrogen, Ammonia	mg/L	0.007	0.011	0.005	0.005	0.020	0.005	0.003	0.005	0.005	0.005			0.006	
Nitrogen, nitrate + nitrite	mg/L	0.005	0.003	0.007	0.005	0.005	0.005	0.003	0.005	0.005	0.005			0.005	
Nitrogen, Total	mg/L	0.49	0.39	0.18	0.14	0.19	0.17	0.25	0.40	0.27	0.23			0.25	≤ 0.54 AGM
Nitrogen, Total Kjeldahl	mg/L														
pH	None	8.10		8.00	8.00	8.00	8.00	8.00	8.00	8.00	7.90			8.00	6.5 to 8.5
Phosphorus, orthophosphate	mg/L	0.0020	0.001	0.006	0.004	0.002	0.003	0.001	0.002	0.003	0.002			0.002	
Phosphorus, Total	mg/L	0.0280	0.0430	0.0220	0.014	0.0180	0.018	0.0140	0.031	0.0160	0.017			0.021	≤ 0.044 AGM
Salinity	ppth	32.9	33.8	33.3	34.2	36.3	36.6	27.6	31.9	33.3	31.7			33.07	
Specific Conductivity	umho/cm	50277	51505	50681	51975	54946	55193	45775	49147	50948	48728			50848	None
Temperature	deg C	28.1	26.8	19.2	26.4	27.4	24.1	28.5	31.4	30.3	30.2			27.0	
Total Hardness	mg/L														
Total Suspended Solids	mg/L	6.0	13.0	8.0	6	7.0	5	4.0	7	3.0	5			5.9	
Turbidity	NTU	2.7	7.6	1.7	1.2	2.6	1.6	1.1	2.9	0.8	0.9			1.8	≤ 29
Zinc	mg/L														≤ 0.086

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• AGM - Annual Geometric Mean
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Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

Lake Worth Lagoon Central Watershed Monitoring Events (Marine)

SITE LWL-8	SAMPLE DATE	10/9/19	11/6/19	1/22/20	2/19/20	3/18/20	4/15/20	5/13/20	6/17/20	7/15/20	8/25/20	9/15/20		AGM or %>TPTV	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														≤ 0.0088
Chlorophyll-a (corrected)	ug/L	5.0	13.8	3.2	3.47	4.1	8.87	9.4	8.3	12.7	7.71	18.5		27%	≤ 10.2 TPTV
Copper	mg/L														≤ 0.0037
Dissolved Oxygen	% Saturation	85.3	109.6	100.2	103.0	96.0	96.6	97.1	89.0	97.5	87.9	94.0			> 42
Fecal Coliform	cfu/100mL														
Lead	mg/L														≤ 0.0085
Nitrogen, Ammonia	mg/L	0.049	0.010	0.007	0.007	0.005	0.005	0.005	0.005	0.006	0.003	0.020			
Nitrogen, nitrate + nitrite	mg/L	0.060	0.018	0.008	0.005	0.005	0.012	0.007	0.005	0.005	0.0025	0.039			
Nitrogen, Total	mg/L	0.51	0.30	0.20	0.29	0.26	0.35	0.28	0.51	0.42	0.45	0.53		0.35	≤ 0.66 AGM
Nitrogen, Total Kjeldahl	mg/L														
pH	None	8.10		8.10	7.90	7.90	7.90	7.80	7.90	7.80	7.80	7.80			6.5 to 8.5
Phosphorus, orthophosphate	mg/L	0.0100	0.007	0.006	0.01	0.004	0.006	0.008	0.011	0.010	0.012	0.006			
Phosphorus, Total	mg/L	0.0470	0.0320	0.0210	0.034	0.0350	0.042	0.0430	0.037	0.0490	0.041	0.0440		0.038	≤ 0.049 AGM
Salinity	ppth	31.1	30.1	36	30.7	33.4	34.7	35.5	22.4	27.2	27.7	20.4			
Specific Conductivity	umho/cm	47849	46402	54268	47193	50962	52845	53756	35757	42616	43248	32846			None
Temperature	deg C	27.7	27.0	18.9	26.2	25.8	28.2	25.4	30.7	31.5	30.1	30.1			
Total Hardness	mg/L														
Total Suspended Solids	mg/L	14.0	8.0	11.0	11	13.0	12	14.0	8	12.0	6	16.0			
Turbidity	NTU	7.7	1.4	3.5	4.4	6.5	6.2	5.4	2.8	4.9	3.3	5.9			≤ 29
Zinc	mg/L														≤ 0.086

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• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.
• TPTV - Ten Percent Threshold Value
• AGM - Annual Geometric Mean • Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

Lake Worth Lagoon Central Watershed Monitoring Events (Marine)

SITE 18C	SAMPLE DATE	10/9/19	11/6/19	1/22/20	2/19/20	3/18/20	4/15/20	5/13/20	6/17/20	7/8/20	8/31/20			AGM or %>TPTV	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L	0.0071	0.0071	0.0036	0.0036	0.0355	0.0071	0.0071	0.0036	0.0071	0.0036				≤ 0.05
Cadmium	mg/L	0.0003	0.0002	0.0002	0.0002	0.0002	0.0003	0.0003	0.0002	0.0003	0.0002				≤ 0.0088
Chlorophyll-a (corrected)	ug/L	2.5	7.1	2.6	3.2	8.4	7.4	4.3	5.8	7.4	4.6			0%	≤ 10.2 TPTV
Copper	mg/L	0.0026	0.0013	0.0013	0.0013	0.0041	0.0026	0.0013	0.0026	0.0026	0.0013				≤ 0.0037
Dissolved Oxygen	% Saturation	71.7	83.0	99.0	107.0	96.8	88.7	86.9	73.8	73.8	75.1				> 42
Fecal Coliform	cfu/100mL														
Lead	mg/L	0.0046	0.0073	0.0046	0.0023	0.0023	0.0046	0.0023	0.0063	0.0046	0.0023				≤ 0.0085
Nitrogen, Ammonia	mg/L	0.110	0.077	0.018	0.018	0.016	0.018	0.046	0.042	0.018	0.018				
Nitrogen, nitrate + nitrite	mg/L	0.083	0.088	0.017	0.0165	0.017	0.0165	0.017	0.0165	0.017	0.0165				
Nitrogen, Total	mg/L	0.51	0.41	0.45	0.41	0.51	0.53	0.54	0.59	0.51	0.42			0.482	≤ 0.66 AGM
Nitrogen, Total Kjeldahl	mg/L	0.43	0.32	0.43	0.39	0.49	0.51	0.52	0.57	0.49	0.4				
pH	None	7.93		8.01	7.90	7.83	7.87	7.78	7.77	7.68	7.86				6.5 to 8.5
Phosphorus, orthophosphate	mg/L	0.0490	0.046	0.028	0.029	0.037	0.051	0.050	0.041	0.041	0.027				
Phosphorus, Total	mg/L	0.0860	0.0820	0.0840	0.078	0.0940	0.088	0.1000	0.067		0.064			0.082	≤ 0.049 AGM
Salinity	ppth	30.83	29.22	33.47	31.21	33.02	35.22	35.99	20.54	22.61	29.59				
Specific Conductivity	umho/cm	48524	49226	50998	47984	50469	53993	53637	33130	36060	45933				None
Temperature	deg C	27.3	26.9	19.9	26.4	27.3	27.9	24.8	30.4	31.1	31.5				
Total Hardness	mg/L	5440	5320	5800											
Total Suspended Solids	mg/L	20.2	39.5	39.8											
Turbidity	NTU	7.1	2.8	12.4	11.7	16.6	10.4	13.5	6.7	5.8	6.8				≤ 29
Zinc	mg/L	0.0110	0.0055	0.0055	0.0055	0.0275	0.0110	0.0055	0.0055	0.0110	0.0110				≤ 0.086

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• TPTV - Ten Percent Threshold Value

• AGM - Annual Geometric Mean

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

Lake Worth Lagoon Central Watershed Monitoring Events (Marine)

SITE 18D	SAMPLE DATE	10/9/19	11/6/19	1/22/20	2/19/20	3/18/20	4/15/20	5/13/20	6/17/20	7/8/20	8/31/20			AGM or %>TPTV	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L	0.0164	0.0036	0.0036	0.0036	0.0355	0.0071	0.0036	0.0036	0.0036	0.0036				≤ 0.05
Cadmium	mg/L	0.0003	0.0002	0.0002	0.0002	0.0002	0.0003	0.0003	0.0002	0.0002	0.0002				≤ 0.0088
Chlorophyll-a (corrected)	ug/L	4.9	5.8	3.6	3.2	7.7	4.5	5.0	3.2	6.7	1.1			0%	≤ 10.2 TPTV
Copper	mg/L	0.0026	0.0013	0.0066	0.0013	0.0041	0.0026	0.0013	0.0026	0.0026	0.0013				≤ 0.0037
Dissolved Oxygen	% Saturation	74.5	92.6	99.9	106.5	104.7	93.4	92.1	79.4	78.5	96.3				> 42
Fecal Coliform	cfu/100mL														
Lead	mg/L	0.0046	0.0064	0.0102	0.0023	0.0023	0.0046	0.0023	0.0050	0.0023	0.0023				≤ 0.0085
Nitrogen, Ammonia	mg/L	0.059	0.082	0.018	0.018	0.016	0.018	0.040	0.018	0.018	0.018				
Nitrogen, nitrate + nitrite	mg/L	0.076	0.070	0.017	0.0165	0.017	0.0165	0.017	0.0165	0.017	0.0165				
Nitrogen, Total	mg/L	0.37	0.32	0.88	0.41	0.44	0.43	0.48	0.51	0.45	0.06			0.371	≤ 0.66 AGM
Nitrogen, Total Kjeldahl	mg/L	0.29	0.25	0.86	0.39	0.42	0.41	0.46	0.49	0.43	0.043				
pH	None	7.74		8.01	7.82	7.88	7.85	7.76	7.80	7.79	7.89				6.5 to 8.5
Phosphorus, orthophosphate	mg/L	0.0420	0.041	0.032	0.027	0.031	0.05	0.046	0.034	0.039	0.0019				
Phosphorus, Total	mg/L	0.0770	0.0620	0.1600	0.064	0.0780	0.075	0.0870	0.052		0.0045			0.056	≤ 0.049 AGM
Salinity	ppth	31.77	29.33	33.17	31.41	32.78	35.43	35.48	21.6	29.01	29.87				
Specific Conductivity	umho/cm	48764	45400	50496	48153	50143	53760	53704	34460	45119	46362				None
Temperature	deg C	27.4	27.0	18.1	26.6	27.1	28.1	24.8	29.6	31.2	32.4				
Total Hardness	mg/L	5960	5440	5890											
Total Suspended Solids	mg/L	24.8	35.5	126.0											
Turbidity	NTU	6.2	4.0	35.1	6.2	10.7	9.1	10.8	2.9	7.0	5				≤ 29
Zinc	mg/L	0.0110	0.0055	0.0055	0.0055	0.0055	0.0110	0.0055	0.0055	0.0055	0.0055				≤ 0.086

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• TPTV - Ten Percent Threshold Value

• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

Lake Worth Lagoon Central Watershed Monitoring Events (Marine)

SITE LWL-11	SAMPLE DATE	10/9/19	11/6/19	1/22/20	2/19/20	3/18/20	4/15/20	5/13/20	6/17/20	7/15/20	8/25/20	9/15/20		AGM or %>TPTV	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														≤ 0.0088
Chlorophyll-a (corrected)	ug/L	3.7	6.8	6.9	3.4	5.7	6.96	7.3	7.83	4.0	5.26	10.6		9%	≤ 10.2 TPTV
Copper	mg/L														≤ 0.0037
Dissolved Oxygen	% Saturation	81.3	97.9	97.8	107.5	98.3	97.4	93.6	98.5	97.0	89.5	123.8			> 42
Fecal Coliform	cfu/100mL														
Lead	mg/L														≤ 0.0085
Nitrogen, Ammonia	mg/L	0.005	0.050	0.008	0.007	0.003	0.005	0.041	0.003	0.008	0.006	0.009			
Nitrogen, nitrate + nitrite	mg/L	0.052	0.045	0.015	0.0025	0.003	0.0025	0.019	0.0025	0.003	0.0025	0.003			
Nitrogen, Total	mg/L	0.49	0.39	0.34	0.22	0.32	0.36	0.48	0.52	0.36	0.40	0.43		0.38	≤ 0.66 AGM
Nitrogen, Total Kjeldahl	mg/L														
pH	None	7.80		8.00	8.00	7.90	8.00	7.80	7.90	7.90	7.90	8.00			6.5 to 8.5
Phosphorus, orthophosphate	mg/L	0.0170	0.009	0.008	0.008	0.003	0.001	0.014	0.007	0.008	0.009	0.001			
Phosphorus, Total	mg/L	0.0470	0.0280	0.0420	0.025	0.0020	0.05	0.0560	0.042	0.0420	0.043	0.0310		0.030	≤ 0.049 AGM
Salinity	ppth	32.6	29.8	32.8	31.6	33.2	35.3	35.7	22.8	29.2	33.7	21.8			
Specific Conductivity	umho/cm	49950	46041	49935	48503	50638	53554	53968	36315	45465	51556	34846			None
Temperature	deg C	27.2	26.8	17.8	26.1	26.2	28.0	25.3	30.4	32.1	30.1	30.5			
Total Hardness	mg/L														
Total Suspended Solids	mg/L	19.0	4.0	20.0	7	21.0	24	21.0	6	11.0	17	7.0			
Turbidity	NTU	7.1	1.5	0.1	2.4	8.6	9.9	10.3	2.3	4.7	6.3	2.4			≤ 29
Zinc	mg/L														≤ 0.086

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

ICWW-S Watershed Monitoring Events (Marine)

SITE LWL-13	SAMPLE DATE	11/5/19	1/21/20	2/18/20	3/17/20	4/14/20	5/12/20	6/16/20	7/14/20	8/24/20	9/14/20			AGM	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														≤ 0.0088
Chlorophyll-a (corrected)	ug/L	4.7	4.6	2.2	3.77	4.8	5.42	3.4	5.99	3.7	11.8			4.6	≤ 5.7 AGM
Copper	mg/L														≤ 0.0037
Dissolved Oxygen	% Saturation	93.6	61.2	103.5	95.2	95.6	87.9	80.6	100.4	92.5	97.2				> 42
Fecal Coliform	cfu/100mL														
Lead	mg/L														≤ 0.0085
Nitrogen, Ammonia	mg/L	0.054	0.025	0.006	0.005	0.005	0.057	0.006	0.005	0.005	0.018				
Nitrogen, nitrate + nitrite	mg/L	0.034	0.014	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.041				
Nitrogen, Total	mg/L	0.36	0.27	0.19	0.47	0.23	0.39	0.37	0.33	0.23	0.62			0.33	≤ 0.59 AGM
Nitrogen, Total Kjeldahl	mg/L														
pH	None		8.00	8.10	8.00	7.70	7.80	7.90	7.90	8.00	7.80				6.5 to 8.5
Phosphorus, orthophosphate	mg/L	0.0110	0.006	0.007	0.002	0.002	0.014	0.007	0.002	0.002	0.015				
Phosphorus, Total	mg/L	0.0280	0.0290	0.0150	0.03	0.0230	0.05	0.0310	0.025	0.0160	0.044			0.027	≤ 0.050 AGM
Salinity	ppth	28.9		31.6	33.7	35.5	35.6	23.4	31.5	34.5	18.7				
Specific Conductivity	umho/cm	44803	47811	48431	51384	53767	53867	50338	48564	52552	30324				None
Temperature	deg C	26.8	20.9	25.1	25.8	27.1	25.3	29.7	30.5	29.8	29.7				
Total Hardness	mg/L														
Total Suspended Solids	mg/L	8.0	12.0	3.0	13	9.0	18	5.0	5	9.0	6				
Turbidity	NTU	1.0	4.4	1.0	4.5	4.5	8.4	1.7	1.6	1.3	1.6				≤ 29
Zinc	mg/L														≤ 0.086

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• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

ICWW-S Watershed Monitoring Events (Marine)

SITE LWL-18	SAMPLE DATE	11/5/19	1/21/20	2/18/20	3/17/20	4/14/20	5/12/20	6/16/20	7/14/20	8/24/20	9/14/20			Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														≤ 0.0088
Chlorophyll-a (corrected)	ug/L	3.9	1.9	1.9	5.87	4.2	4.95	6.8	17.2	5.0	8.41			4.9	≤ 5.7 AGM
Copper	mg/L														≤ 0.0037
Dissolved Oxygen	% Saturation	63.9	0.0	108.0	104.0	79.2	94.9	105.5	99.3	83.0	69.9				> 42
Fecal Coliform	cfu/100mL														
Lead	mg/L														≤ 0.0085
Nitrogen, Ammonia	mg/L	0.063	0.007	0.015	0.003	0.060	0.003	0.003	0.003	0.045	0.089				
Nitrogen, nitrate + nitrite	mg/L	0.036	0.005	0.016	0.0025	0.028	0.0025	0.003	0.007	0.068	0.08				
Nitrogen, Total	mg/L	0.33	0.16	0.26	0.31	0.32	0.23	0.57	0.47	0.41	0.71			0.34	≤ 0.59 AGM
Nitrogen, Total Kjeldahl	mg/L														
pH	None			7.90	8.00	7.60	7.90	7.80	7.60	7.60	7.60				6.5 to 8.5
Phosphorus, orthophosphate	mg/L	0.0280	0.003	0.013	0.002	0.018	0.004	0.028	0.016	0.029	0.043				
Phosphorus, Total	mg/L	0.0460	0.0120	0.0330	0.035	0.0380	0.029	0.0760	0.057	0.0500	0.07			0.040	≤ 0.050 AGM
Salinity	ppth	29.2		31.6	33.4	33.5	34.4	20.4	26.2	30.7	18.9				
Specific Conductivity	umho/cm	45298		48543	50954	51255	52362	32897	41148	47401	30597				None
Temperature	deg C	27.8		26.0	26.4	27.9	26.4	30.4	31.6	30.9	29.5				
Total Hardness	mg/L														
Total Suspended Solids	mg/L	5.0	3.0	7.0	18	10.0	8	16.0	6	4.0	5				
Turbidity	NTU	1.8	1.0	2.0	5.1	3.4	3.8	5.3	3.1	1.4	2.4				≤ 29
Zinc	mg/L														≤ 0.086

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• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

Hillsboro Watershed Monitoring Events

SITE 1	SAMPLE DATE	11/20/19	2/24/20	5/21/20										Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														≤ 0.0088
Chlorophyll-a (corrected)	ug/L														≤ 11 AGM
Copper	mg/L														≤ 0.0037
Dissolved Oxygen	% Saturation														> 42
Fecal Coliform	cfu/100mL														
Lead	mg/L														≤ 0.0085
Nitrogen, Ammonia	mg/L														
Nitrogen, nitrate + nitrite	mg/L														
Nitrogen, Total	mg/L	0.77	0.66	0.62										0.7	Narrative
Nitrogen, Total Kjeldahl	mg/L														
pH	None														6.5 to 8.5
Phosphorus, orthophosphate	mg/L														
Phosphorus, Total	mg/L														Narrative
Salinity	ppth	14.6	18	21.4											
Specific Conductivity	umho/cm														None
Temperature	deg C														
Total Hardness	mg/L														
Total Suspended Solids	mg/L														
Turbidity	NTU	1.1	1.0	1.7											≤ 29
Zinc	mg/L														≤ 0.086

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

Hillsboro Watershed Monitoring Events

SITE 2	SAMPLE DATE	11/18/19	2/26/20	5/20/20										Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														≤ 0.0088
Chlorophyll-a (corrected)	ug/L														≤ 11 AGM
Copper	mg/L														≤ 0.0037
Dissolved Oxygen	% Saturation														> 42
Fecal Coliform	cfu/100mL														
Lead	mg/L														≤ 0.0085
Nitrogen, Ammonia	mg/L														
Nitrogen, nitrate + nitrite	mg/L														
Nitrogen, Total	mg/L	1.17	0.74	1.21										1.0	Narrative
Nitrogen, Total Kjeldahl	mg/L														
pH	None														6.5 to 8.5
Phosphorus, orthophosphate	mg/L														
Phosphorus, Total	mg/L														Narrative
Salinity	ppth	0.28	3.25	0.26										0.62	
Specific Conductivity	umho/cm														None
Temperature	deg C														
Total Hardness	mg/L														
Total Suspended Solids	mg/L														
Turbidity	NTU	1.1	0.9											1.0	≤ 29
Zinc	mg/L														≤ 0.086

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

Hillsboro Watershed Monitoring Events

SITE 3	SAMPLE DATE	11/18/19	2/26/20	5/20/20										Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L														≤ 20 AGM
Copper	mg/L														See Table 5-3, page 2
Dissolved Oxygen	% Saturation														> 38
Fecal Coliform	cfu/100mL														
Lead	mg/L														See Table 5-3, page 2
Nitrogen, Ammonia	mg/L														
Nitrogen, nitrate + nitrite	mg/L														
Nitrogen, Total	mg/L	1.13	1.42	1.14										1.2	Narrative
Nitrogen, Total Kjeldahl	mg/L														
pH	None														6.0 to 8.5
Phosphorus, orthophosphate	mg/L														
Phosphorus, Total	mg/L														Narrative
Salinity	ppth	0.28	0.32	0.27											
Specific Conductivity	umho/cm														≤ 1275
Temperature	deg C														
Total Hardness	mg/L														
Total Suspended Solids	mg/L														
Turbidity	NTU	1.2	1.8												≤ 29
Zinc	mg/L														See Table 5-3, page 2

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• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

Hillsboro Watershed Monitoring Events

SITE S39	SAMPLE DATE	10/22/19	11/5/19	1/14/20	2/11/20	3/10/20	4/21/20	5/19/20	6/16/20	7/14/20	8/25/20	9/8/20		Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L					122	107	97			204				
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L														≤ 20 AGM
Copper	mg/L														See Table 5-3, page 2
Dissolved Oxygen	% Saturation	67.7	71.3	89.2	92.2	93.8	82.2	81.2	59.2	63.7	81.6	70.6			> 38
Fecal Coliform	cfu/100mL														
Lead	mg/L														See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.005				0.013	0.014	0.027			0.024				
Nitrogen, nitrate + nitrite	mg/L	0.005	0.027	0.006	0.005	0.005	0.008	0.014	0.005	0.020	0.005	0.025			
Nitrogen, Total	mg/L	0.05		0.05			1.19	0.05		1.06	1.60	1.61		0.3	Narrative
Nitrogen, Total Kjeldahl	mg/L														
pH	None	7.80	7.70	7.80	8.00	8.20	7.90	7.70	7.60	7.60	8.00	7.80			6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0020	0.003	0.001	0.002	0.002	0.001	0.001	0.002	0.001	0.002	0.002			
Phosphorus, Total	mg/L	0.0020	0.0160	0.0080	0.01	0.0090	0.013	0.0100	0.022	0.0140	0.011	0.0110		0.010	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	778	541	558	583	561	549	496	639	433	946	928			≤ 1275
Temperature	deg C	27.5	27.9	22.6	21.8	20.3	28.0	25.9	29.2	30.7	29.9	30.9			
Total Hardness	mg/L					145.1	131.6	118.6			264.3				
Total Suspended Solids	mg/L					3.0	1.5	1.5			3				
Turbidity	NTU	0.1		0.3		0.6	0.8	0.8		0.6	0.6				≤ 29
Zinc	mg/L														See Table 5-3, page 2

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• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.
• AGM - Annual Geometric Mean
• Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020
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L-8 Watershed Monitoring Events

Culv10	SAMPLE DATE	10/21/19	11/18/19	1/27/20	2/24/20	3/23/20	4/20/20	5/18/20	6/29/20	7/13/20	8/24/20	9/21/20		Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L	108	127	133	115	105	120	116	111	82		66			
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L														≤ 20 AGM
Copper	mg/L														See Table 5-3, page 2
Dissolved Oxygen	% Saturation	81.5	65.3	94.2	94.9	86.1	90.9	53.2	67.3	14.4		37.3			> 38
Fecal Coliform	cfu/100mL														
Lead	mg/L														See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.081	0.035	0.065	0.012	0.009	0.014	0.044	0.016	0.185		0.017			
Nitrogen, nitrate + nitrite	mg/L	0.375	0.257	0.532	0.429	0.433	0.388	0.332	0.099	0.084		0.268			
Nitrogen, Total	mg/L	1.59	1.47	2.09	1.63	1.46	2.66	1.76	1.49	2.12		1.82		1.8	Narrative
Nitrogen, Total Kjeldahl	mg/L														
pH	None	8.50	7.90	7.80	8.00	8.10	8.20	7.80	7.80	7.40		7.30			6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0570	0.035	0.058	0.072	0.072	0.087	0.074	0.088	0.058		0.032			
Phosphorus, Total	mg/L	0.1620	0.0860	0.2580	0.213	0.1580	0.322	0.1900	0.197	0.1410		0.0940		0.169	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	668	451	488	506	416	421	440	442	234		320			≤ 1275
Temperature	deg C	27.6	19.6	16.7	19.9	24.0	25.1	27.0	30.9	29.8		28.5			
Total Hardness	mg/L	134.4		134.7			136.9			95.8					
Total Suspended Solids	mg/L	39.0	9.0	139.0	46	25.0	119	49.0	36	26.0		11.0			
Turbidity	NTU	64.3	16.5	122.0	75.9	37.7	114	51.3	27	17.9		5.6			≤ 29
Zinc	mg/L														See Table 5-3, page 2

• Metal exceedences are based on hardness

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

S-2-6-7 Watershed Monitoring Events

SITE S2	SAMPLE DATE	10/21/19	11/18/19	1/13/20	2/10/20	3/9/20	4/6/20	5/4/20	6/29/20	7/27/20	8/24/20	9/21/20		Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L	215	252	231	241	111	112	119	347	391	358	118			
Arsenic	mg/L														≤ 0.05
Cadmium	mg/L														See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L														≤ 20 AGM
Copper	mg/L														See Table 5-3, page 2
Dissolved Oxygen	% Saturation	69.0	61.8	95.6	68.0	91.2	78.3	96.0	58.8	2.2	81.9	59.8			> 38
Fecal Coliform	cfu/100mL														
Lead	mg/L														See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.067	0.121	0.088	0.152	0.030	0.059	0.019	0.240	0.967	0.108	0.080			
Nitrogen, nitrate + nitrite	mg/L	0.326	0.650	0.595	0.405	0.330	0.239	0.098	0.792	0.473	0.314	0.080			
Nitrogen, Total	mg/L	1.95	2.41	2.11	2.13	1.48	1.56	1.14	3.71	5.11	3.44	1.23		2.1	Narrative
Nitrogen, Total Kjeldahl	mg/L														
pH	None	8.10	7.80	8.00	7.70	8.00	8.00	8.20	7.50	7.10	7.70	7.60			6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0410	0.086	0.063	0.073	0.044	0.055	0.023	0.105	0.136	0.03	0.057			
Phosphorus, Total	mg/L	0.0940	0.1120	0.1070	0.108	0.1200	0.129	0.0730	0.158	0.3800	0.22	0.1030		0.131	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	783	816	1005	1248	429	449	462	1135	1625	1537	435			≤ 1275
Temperature	deg C	28.4	21.3	22.3	21.1	19.4	25.0	26.6	31.9	28.8	30.4	29.7			
Total Hardness	mg/L	279.3		271.5			144.9			349.4					
Total Suspended Solids	mg/L	5.0	3.0	8.0	6	24.0	28	9.0	5	16.0	13	7.0			
Turbidity	NTU	3.6	4.5	6.4	6	24.4	24	10.2	4.2	6.8	4.6	6.4			≤ 29
Zinc	mg/L														See Table 5-3, page 2

• Metal exceedences are based on hardness

Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

S-2-6-7 Watershed Monitoring Events

SITE 39	SAMPLE DATE	11/20/19	2/5/20	3/25/20	5/7/20	7/24/20								Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L	0.0036	0.0036	0.0036	0.0036	0.0036									≤ 0.05
Cadmium	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002									See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L	6.2	3.4	0.8	4.9	14.0								4.1	≤ 20 AGM
Copper	mg/L	0.0013	0.0013	0.0013	0.0013	0.0028									See Table 5-3, page 2
Dissolved Oxygen	% Saturation	80.3	77.9	78.8	78.8	2.2									> 38
Fecal Coliform	cfu/100mL														
Lead	mg/L	0.0023	0.0023	0.0023	0.0023	0.0023									See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.018	0.018	0.059	0.018	2.600									
Nitrogen, nitrate + nitrite	mg/L	0.160	0.017	0.017	0.3	0.017									
Nitrogen, Total	mg/L	1.16	0.06	0.06	1.40	4.82								0.5	Narrative
Nitrogen, Total Kjeldahl	mg/L	1	0.043	0.043	1.1	4.8									
pH	None	8.32	7.90	7.85	7.85	7.25									6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0340	0.002	0.002	0.075	0.340									
Phosphorus, Total	mg/L	0.0690	0.0040	0.0054	0.0034	0.4500								0.019	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	459.3	786	419	419	1765									≤ 1275
Temperature	deg C	20.4	20.1	25.9	25.9	27.0									
Total Hardness	mg/L	161	224	152	152	552									
Total Suspended Solids	mg/L	2.5	2.5	38.4	24	6.0									
Turbidity	NTU	5.8	5.6	33.3	21	3.9									≤ 29
Zinc	mg/L	0.0055	0.0055	0.0055	0.0055	0.0055									See Table 5-3, page 2

• Metal exceedences are based on hardness

Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

S-2-6-7 Watershed Monitoring Events

SITE 43	SAMPLE DATE	11/20/19	2/5/20	3/25/20	5/7/20	7/24/20								Geometric Mean	Numeric Surface Water Quality Standard Criteria
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L	0.0036	0.0036	0.0036	0.0036	0.0036									≤ 0.05
Cadmium	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002									See Table 5-3, page 2
Chlorophyll-a (corrected)	ug/L	7.3	7.0	8.9	7.7	9.2								8.0	≤ 20 AGM
Copper	mg/L	0.0013	0.0013	0.0013	0.0013	0.0029									See Table 5-3, page 2
Dissolved Oxygen	% Saturation	76.1	69.4	78.2	78.2	25.1									> 38
Fecal Coliform	cfu/100mL														
Lead	mg/L	0.0023	0.0023	0.0023	0.0023	0.0023									See Table 5-3, page 2
Nitrogen, Ammonia	mg/L	0.018	0.120	0.059	0.018	1.700									
Nitrogen, nitrate + nitrite	mg/L	0.190	0.290	0.360	0.12	0.470									
Nitrogen, Total	mg/L	1.29	1.49	1.66	1.42	4.07								1.8	Narrative
Nitrogen, Total Kjeldahl	mg/L	1.1	1.2	1.3	1.3	3.6									
pH	None	8.07	7.68	7.86	7.86	7.41									6.0 to 8.5
Phosphorus, orthophosphate	mg/L	0.0430	0.043	0.065	0.05	0.200									
Phosphorus, Total	mg/L	0.0830	0.0800	0.1500	0.14	0.2500								0.128	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	461.2	630	432	432	1747									≤ 1275
Temperature	deg C	20.8	19.7	25.8	25.8	28.2									
Total Hardness	mg/L	165	190	151	204	535									
Total Suspended Solids	mg/L	6.2	2.5	12.3	2.5	6.0									
Turbidity	NTU	6.7	7.1	28.0	15.2	2.9									≤ 29
Zinc	mg/L	0.0055	0.0055	0.0055	0.0055	0.0055									See Table 5-3, page 2

• Metal exceedences are based on hardness

Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2019- September 2020

WPBWS Watershed Monitoring Events

M Canal	SAMPLE DATE	10/27/20	11/10/20	1/14/20	2/11/20	3/23/20	4/7/20	5/12/20	6/9/20	7/28/20	8/11/20	9/22/20		Geometric Mean	
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L														≤ 0.01
Cadmium	mg/L														See Table 5-3, page 6
Chlorophyll-a (corrected)	ug/L	0.5		7.5	4.9	3.7	4.1	7.7	9.1	21.6	0.5	2.5		3.7	≤ 20 AGM
Copper	mg/L														See Table 5-3, page 6
Dissolved Oxygen	% Saturation	96.6	93.8	110.8	79.2	85.2	90.5	82.5	99.0	64.5	84.4	82.3			> 38
Fecal Coliform	cfu/100mL														
Lead	mg/L														See Table 5-3, page 6
Nitrogen, Ammonia	mg/L														
Nitrogen, nitrate + nitrite	mg/L	0.0165		0.043	0.52	0.370	0.23	0.037	0.0165	0.25	0.02	0.0165			
Nitrogen, Total	mg/L	0.76		0.84	1.9	1.4	1.3	1.2	0.93	1.5	2.3	0.72		1.2	Narrative
Nitrogen, Total Kjeldahl	mg/L														
pH	None	7.7	7.8	8.2	7.8	7.7	8	8	8.00	7.5	7.7	7.9			6.0 to 8.5
Phosphorus, orthophosphate	mg/L														
Phosphorus, Total	mg/L	0.049		0.047	0.11	0.082		0.11		0.073	0.14	0.064		0.079	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	309	206	524	906	550	513	502	477	455	710	3.3			≤ 1275
Temperature	deg C	29.2	27.5	24.6	24.2	26.1	25.4	28.9	31.3	29.6	32.5	29			
Total Hardness	mg/L														
Total Suspended Solids	mg/L														
Turbidity	NTU	5.9	9	5.1	21	14	11	18	7.4	7.2	6.2	11			≤ 29
Zinc	mg/L														See Table 5-3, page 6

• Metal exceedences are based on hardness

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

Table 5-4
Monitoring Data
Reporting Period October 2019 September 2020

WPBWS Watershed Monitoring Events

Control 4	SAMPLE DATE	10/27/20	11/10/20	1/14/20	2/11/20	3/23/20	4/7/20	5/12/20	6/9/20	7/28/20	8/11/20	9/22/20		Geometric Mean	
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L														≤ 0.01
Cadmium	mg/L														See Table 5-3, page 6
Chlorophyll-a (corrected)	ug/L	0.5		3.2	5.8	9.3	0.5	4.1	11.1	10.70	0.50	0.5		2.4	≤ 20 AGM
Copper	mg/L														See Table 5-3, page 6
Dissolved Oxygen	% Saturation	68.9	86.8	79.8	84.3	83.5	64.7	52.3	89.5	49.7	63.2	71.2			> 38
Fecal Coliform	cfu/100mL														
Lead	mg/L														See Table 5-3, page 6
Nitrogen, Ammonia	mg/L														
Nitrogen, nitrate + nitrite	mg/L	0.0165		0.0165	0.29	0.160	0.0165	0.0165	0.0165	0.12	0.02	0.0165			
Nitrogen, Total	mg/L	0.67		0.69	1.4	1.8	1.2	1.9	1.00	1.2	0.95	0.83		1.1	Narrative
Nitrogen, Total Kjeldahl	mg/L														
pH	None	6.9	7.6	7.5	7.7	7.7	7.6	7.4	8.00	7.3	7.3	7.3			6.0 to 8.5
Phosphorus, orthophosphate	mg/L														
Phosphorus, Total	mg/L	0.053		0.026	0.05	0.0990		0.0470		0.051	0.05	0.03		0.046	Narrative
Salinity	ppth														
Specific Conductivity	umho/cm	174	196	479	998	533	382	384	554	338	324	0.4			≤ 1275
Temperature	deg C	27.9	27.1	23.5	23.4	26.3	24.9	27	29.2	29.3	30.3	27.3			
Total Hardness	mg/L														
Total Suspended Solids	mg/L														
Turbidity	NTU	1.7	2.8	1.2	7.2	8	4	4.2	3.7	3.4	2.7	2			≤ 29
Zinc	mg/L														See Table 5-3, page 6

• Metal exceedences are based on hardness

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

Table 5-4
Monitoring Data
Reporting Period October 2019 - September 2020

WPBWS Watershed Monitoring Events

Lake Mangonia	SAMPLE DATE	10/27/20	2/11/20	4/7/20	6/9/20	8/11/20								Geometric Mean	
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L														≤ 0.01
Cadmium	mg/L														≤ $[e^{(0.7409\ [lnH]\ -4.719)}]\ 10^{-3}$
Chlorophyll-a (corrected)	ug/L	0.50	4.60	4.10	16.30	0.50								2.4	≤ 20 AGM
Copper	mg/L														≤ $[e^{(0.8545\ [lnH]\ -1.702)}]\ 10^{-3}$
Dissolved Oxygen	% Saturation	97.5	101.0	90.9	98.9	110.0									> 38
Fecal Coliform	cfu/100mL														
Lead	mg/L														≤ $[e^{(1.273\ [lnH]\ -4.705}]\ 10^{-3}$
Nitrogen, Ammonia	mg/L														
Nitrogen, nitrate + nitrite	mg/L	0.02	0.02	0.02	0.02	0.02									
Nitrogen, Total	mg/L	0.60	0.68	0.77	0.89	0.80								0.74	≤ 1.05 to 1.91 AGM
Nitrogen, Total Kjeldahl	mg/L														
pH	None	8.0	8.2	8.3	8.4	8.7									6.0 to 8.5
Phosphorus, orthophosphate	mg/L														
Phosphorus, Total	mg/L	0.026	0.02			0.044								0.028	≤ 0.03 to 0.09 AGM
Salinity	ppth														
Specific Conductivity	umho/cm	324.00	428.00	441.00	429.40	437.00									≤ 1275
Temperature	deg C	27.10	23.50	25.00	28.60	30.80									
Total Hardness	mg/L														
Total Suspended Solids	mg/L														
Turbidity	NTU	2.00	2.60	2.50	2.50	2.70									≤ 29
Zinc	mg/L														≤ $[e^{(0.8473\ [lnH]\ +\ 0.884)}]\ 10^{-3}$

• Metal exceedences are based on hardness

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• For Freshwater Lakes the Total Nitrogen and Total Phosphorus Minimum Values applies if Chlorophyll-a is >20 ug/l, Maximum Values applies if Chlorophyll-a is ≤20 ug/l.

Table 5-4
Monitoring Data
Reporting Period October 2019- September 2020

WPBWS Watershed Monitoring Events

Clear Lake	SAMPLE DATE	10/27/20	2/11/20	4/7/20	6/9/20	8/11/20								Geometric Mean	
PARAMETER	UNITS														
Alkalinity	mg/L														
Arsenic	mg/L														≤ 0.01
Cadmium	mg/L														$\leq [e^{(0.7409\ [lnH]\ -4.719)}]\ 10^{-3}$
Chlorophyll-a (corrected)	ug/L	0.50	2.40	3.40	11.70	0.50								1.9	≤ 20 AGM
Copper	mg/L														$\leq [e^{(0.8545\ [lnH]\ -1.702)}]\ 10^{-3}$
Dissolved Oxygen	% Saturation	103.8	102.9	93.6	108.1	108.5									> 38
Fecal Coliform	cfu/100mL														
Lead	mg/L														$\leq [e^{(1.273\ (lnH)\ -4.705}]\ 10^{-3}$
Nitrogen, Ammonia	mg/L														
Nitrogen, nitrate + nitrite	mg/L	0.02	0.04	0.02	0.02	0.02									
Nitrogen, Total	mg/L	0.66	0.70	0.70	0.82	0.70								0.71	1.05 to 1.91 AGM
Nitrogen, Total Kjeldahl	mg/L														
pH	None	8.4	8.3	8.4	8.4	8.6									6.0 to 8.5
Phosphorus, orthophosphate	mg/L														
Phosphorus, Total	mg/L	0.021	0.015			0.025								0.020	0.03 to 0.09 AGM
Salinity	ppth														
Specific Conductivity	umho/cm	349.00	457.00	417.00	443.90	471.00									≤ 1275
Temperature	deg C	27.40	23.90	25.20	28.80	32.20									
Total Hardness	mg/L														
Total Suspended Solids	mg/L														
Turbidity	NTU	2.00	1.50	1.50	3.40	1.70									≤ 29
Zinc	mg/L														$\leq [e^{(0.8473\ [lnH]\ +\ 0.884)}]\ 10^{-3}$

• Metal exceedences are based on hardness

• Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

• Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

• AGM - Annual Geometric Mean

• For Freshwater Lakes the Total Nitrogen and Total Phosphorus Minimum Values applies if Chlorophyll-a is >20 ug/l, Maximum Values applies if Chlorophyll-a is ≤20 ug/l.

Table 5-5

Summary of Exceedences per Site by Parameter

October 1, 2019 - September 30, 2020

Watershed	Site	Dissolved Oxygen	Turbidity	Fecal Coliform	pH	Specific Conductivity	Chlor-a* (AGM or %TPTV)	Total Nitrogen (AGM)	Total Phosphorus (AGM)
C-15	31E	2/6							
	31C								
	31B								
C-16	22						21.4		
	24								
	27B	1/6							
	27A	1/6			1/6				
	28								
C-17	12A								
	C17S44								
C-18	16								
	15	4/6							
	92								
	81								
C-51	38B					1/5			
	37B								
	C51S155								
Lox	69	1/9							
	51			1/4			5.2		
	62			4/9					
	72			9/9			8.3		
ICWW-N	30								
LWL-N	LWL-1								
	11								
	13								
	LWL-4								
LWL-C	LWL-8						27%		
	18C								0.08
	18D		1/10						0.06
	LWL-11								
ICWW-S	LWL-13								
	LWL-18	1/10							
Hillsboro	1								
	2								
	3								
	S39								
L-8	Culv10a	2/10	6/10						
S-2-6-7	S-2	1/11				2/11			
	39	1/5	1/5			1/5			
	43	1/5				1/5			
WPBWS	M Canal								
	Control 4								
	Lake Mangonia				1/5				
	Clear Lake				1/5				

•AGM - Annual Geometric Mean

• Narrative - Shall not cause an imbalance in flora and fauna

• TPTV- Ten Percent Threshold Value

Table 5-6 Monitoring Data Summary
C-15 Watershed

SITE 31E		Date Range: 03/24/99 - 09/10/20 Samples: 110					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	26	165	164	210	123	22
Arsenic	mg/L	93	0.0027	0.0025	0.0098	0.0005	0.0014
Cadmium	mg/L	107	0.0004	0.0003	0.0050	0.0001	0.0016
Chlorophyll-a (corrected)	ug/L	98	19.6	21.8	120.0	1.1	22.1
Copper	mg/L	106	0.0044	0.0046	0.0200	0.0010	0.0034
Dissolved Oxygen	% Saturation	36	51.4	64.5	127.8	7.7	26.4
Fecal Coliform	cfu/100mL	33	67	50	5000	1	875
Lead	mg/L	96	0.0021	0.0023	0.0050	0.0005	0.0013
Nitrogen, Ammonia	mg/L	103	0.053	0.052	0.820	0.003	0.127
Nitrogen, nitrate + nitrite	mg/L	97	0.042	0.034	0.785	0.001	0.167
Nitrogen, Total	mg/L	96	1.47	1.44	3.87	0.39	0.63
Nitrogen, Total Kjeldahl	mg/L	101	1.39	1.33	3.84	0.37	0.62
pH	None	106	7.6	7.6	8.9	6.3	0.4
osphorus, orthophosphate	mg/L	102	0.133	0.138	1.330	0.003	0.208
Phosphorus, Total	mg/L	99	0.247	0.240	1.490	0.020	0.244
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	108	550	553	833	227	105
Temperature	deg C	108	25.5	26.5	32.0	16.7	3.9
Total Hardness	mg/L	103	199	203	390	99	35
Total Suspended Solids	mg/L	105	5.6	6.5	18.0	1.0	3.6
Turbidity	NTU	106	4.1	4.4	15.9	0.2	2.7
Zinc	mg/L	107	0.0057	0.0055	0.0140	0.0018	0.0028

SITE 31C		Date Range: 01/28/99 - 09/10/20 Samples: 111					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	23	151	152	188	123	16
Arsenic	mg/L	91	0.0030	0.0025	2.2350	0.0005	0.2340
Cadmium	mg/L	108	0.0004	0.0003	0.0050	0.0001	0.0016
Chlorophyll-a (corrected)	ug/L	96	15.1	17.5	93.0	0.1	16.8
Copper	mg/L	108	0.0036	0.0043	0.0295	0.0003	0.0040
Dissolved Oxygen	% Saturation	36	70.1	72.0	137.5	33.1	28.9
Fecal Coliform	cfu/100mL	33	69	70	5000	3	886
Lead	mg/L	96	0.0021	0.0023	0.0070	0.0005	0.0013
Nitrogen, Ammonia	mg/L	105	0.047	0.044	0.456	0.001	0.078
Nitrogen, nitrate + nitrite	mg/L	97	0.065	0.064	1.300	0.006	0.171
Nitrogen, Total	mg/L	98	1.19	1.12	3.09	0.62	0.54
Nitrogen, Total Kjeldahl	mg/L	108	1.06	1.00	3.07	0.11	0.50
pH	None	108	7.5	7.5	8.5	6.3	0.4
osphorus, orthophosphate	mg/L	104	0.048	0.056	0.440	0.003	0.072
Phosphorus, Total	mg/L	101	0.125	0.120	0.560	0.020	0.086
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	110	529	506	11188	391	1020
Temperature	deg C	108	26.2	26.9	32.0	19.2	3.2
Total Hardness	mg/L	105	182	186	260	16	24
Total Suspended Solids	mg/L	100	3.9	3.9	15.7	1.0	3.1
Turbidity	NTU	106	2.5	2.5	13.3	0.1	1.9
Zinc	mg/L	108	0.0057	0.0055	0.1030	0.0016	0.0100

Table 5-6 Monitoring Data Summary
C-15 Watershed

SITE 31B		Date Range: 06/15/00 - 09/10/20 Samples: 145					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	91	149	152	207	32	19
Arsenic	mg/L	56	0.0026	0.0025	0.0070	0.0005	0.0012
Cadmium	mg/L	68	0.0004	0.0003	0.0050	0.0001	0.0016
Chlorophyll-a (corrected)	ug/L	62	12.6	14.7	52.0	1.1	12.3
Copper	mg/L	68	0.0040	0.0038	0.0200	0.0013	0.0033
Dissolved Oxygen	% Saturation	33	94.3	99.9	141.5	50.7	24.4
Fecal Coliform	cfu/100mL	25	85	110	420	1	100
Lead	mg/L	68	0.0021	0.0023	0.0260	0.0003	0.0031
Nitrogen, Ammonia	mg/L	134	0.020	0.018	0.305	0.003	0.052
Nitrogen, nitrate + nitrite	mg/L	139	0.020	0.017	0.470	0.001	0.098
Nitrogen, Total	mg/L	139	0.98	0.98	4.23	0.06	0.39
Nitrogen, Total Kjeldahl	mg/L	143	0.92	0.91	4.18	0.04	0.36
pH	None	142	7.8	7.8	9.1	6.7	0.4
osphorus, orthophosphate	mg/L	139	0.050	0.069	0.344	0.001	0.068
Phosphorus, Total	mg/L	127	0.104	0.105	0.702	0.003	0.087
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	145	491	494	787	392	50
Temperature	deg C	145	25.2	26.5	32.5	15.0	4.0
Total Hardness	mg/L	73	178	178	230	138	18
Total Suspended Solids	mg/L	141	2.9	2.5	43.7	1.0	4.2
Turbidity	NTU	145	2.4	2.6	17.8	0.1	2.1
Zinc	mg/L	68	0.0060	0.0055	0.0492	0.0027	0.0056

Table 5-6 Monitoring Data Summary

C-16 Watershed

SITE 22		Date Range: 01/29/04 - 09/08/20 Samples: 86					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	25	142	141	185	110	16
Arsenic	mg/L	83	0.0026	0.0025	0.0300	0.0005	0.0032
Cadmium	mg/L	83	0.0003	0.0003	0.0026	0.0002	0.0005
Chlorophyll-a (corrected)	ug/L	83	12.6	16.0	62.7	0.8	13.2
Copper	mg/L	83	0.0027	0.0027	0.0180	0.0010	0.0036
Dissolved Oxygen	% Saturation	28	75.5	102.0	149.5	9.4	39.9
Fecal Coliform	cfu/100mL	16	42	39	600	2	210
Lead	mg/L	71	0.0018	0.0022	0.0050	0.0005	0.0009
Nitrogen, Ammonia	mg/L	79	0.025	0.030	1.010	0.002	0.113
Nitrogen, nitrate + nitrite	mg/L	78	0.046	0.029	1.990	0.003	0.260
Nitrogen, Total	mg/L	78	1.01	1.00	3.07	0.53	0.37
Nitrogen, Total Kjeldahl	mg/L	84	0.88	0.88	2.19	0.27	0.27
pH	None	79	8.0	8.1	8.9	6.5	0.4
Phosphorus, orthophosphate	mg/L	79	0.011	0.016	0.086	0.001	0.020
Phosphorus, Total	mg/L	84	0.055	0.059	0.840	0.003	0.096
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	82	492	493	1008	7	134
Temperature	deg C	84	25.7	26.2	36.3	17.1	4.3
Total Hardness	mg/L	82	179	180	239	139	22
Total Suspended Solids	mg/L	83	4.0	4.4	33.8	1.0	4.0
Turbidity	NTU	83	2.5	2.7	6.6	0.1	1.3
Zinc	mg/L	83	0.0052	0.0050	0.0600	0.0013	0.0084

SITE 24		Date Range: 01/25/99 - 09/08/20 Samples: 101					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	19	113	150	177	3	38
Arsenic	mg/L	78	0.0028	0.0025	0.0071	0.0005	0.0012
CFdmium	mg/L	93	0.0004	0.0003	0.0050	0.0002	0.0016
Chlorophyll-a (corrected)	ug/L	89	12.2	14.2	49.0	1.1	11.0
Copper	mg/L	93	0.0030	0.0028	0.0113	0.0007	0.0029
Dissolved Oxygen	% Saturation	28	106.7	105.8	145.6	72.3	21.7
FeCFl Coliform	cfu/100mL	30	67	95	2300	1	491
Lead	mg/L	86	0.0022	0.0023	0.0050	0.0007	0.0013
Nitrogen, Ammonia	mg/L	92	0.025	0.030	0.105	0.007	0.023
Nitrogen, nitrate + nitrite	mg/L	91	0.036	0.025	0.940	0.001	0.145
Nitrogen, Total	mg/L	91	0.75	0.95	2.67	0.06	0.50
Nitrogen, Total Kjeldahl	mg/L	92	0.66	0.86	2.61	0.04	0.47
pH	None	95	8.0	8.0	8.8	7.1	0.4
Phosphorus, orthophosphate	mg/L	94	0.010	0.011	0.230	0.001	0.031
Phosphorus, Total	mg/L	95	0.041	0.055	0.323	0.001	0.049
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	99	511	479	4220	348	391
Temperature	deg C	98	25.2	26.3	33.1	2.8	4.8
Total Hardness	mg/L	90	174	177	233	111	25
Total Suspended Solids	mg/L	95	4.3	5.0	16.5	1.0	3.2
Turbidity	NTU	98	3.1	3.2	11.4	0.6	1.9
Zinc	mg/L	93	0.0057	0.0050	0.0360	0.0013	0.0053

Table 5-6
Monitoring Data Summary
C-16 Watershed

SITE 27B		Date Range: 01/28/99 - 09/10/20 Samples: 92					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	22	178	178	222	121	28
Arsenic	mg/L	73	0.0027	0.0025	0.0120	0.0005	0.0017
Cadmium	mg/L	90	0.0004	0.0003	0.0050	0.0001	0.0017
Chlorophyll-a (corrected)	ug/L	78	13.8	16.4	76.4	0.5	15.7
Copper	mg/L	90	0.0041	0.0043	0.0975	0.0007	0.0104
Dissolved Oxygen	% Saturation	25	52.5	62.6	139.7	12.1	33.9
Fecal Coliform	cfu/100mL	29	139	100	6000	7	1526
Lead	mg/L	84	0.0022	0.0023	0.0067	0.0005	0.0014
Nitrogen, Ammonia	mg/L	86	0.049	0.047	0.740	0.007	0.098
Nitrogen, nitrate + nitrite	mg/L	83	0.069	0.050	0.785	0.006	0.169
Nitrogen, Total	mg/L	82	1.42	1.47	3.42	0.06	0.50
Nitrogen, Total Kjeldahl	mg/L	88	1.28	1.30	3.37	0.04	0.49
pH	None	89	7.6	7.6	8.7	6.7	0.4
Phosphorus, orthophosphate	mg/L	85	0.067	0.070	0.680	0.001	0.158
Phosphorus, Total	mg/L	88	0.160	0.158	0.770	0.004	0.178
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	91	561	564	10481	8	1049
Temperature	deg C	91	25.3	26.7	32.4	16.5	3.9
Total Hardness	mg/L	89	199	205	308	113	38
Total Suspended Solids	mg/L	88	5.4	5.7	20.0	1.0	3.9
Turbidity	NTU	90	3.8	3.9	14.9	0.3	2.7
Zinc	mg/L	89	0.0060	0.0055	0.0350	0.0016	0.0052

SITE 27A		Date Range: 01/28/99 - 09/10/20 Samples: 104					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	25	152	150	191	128	15
Arsenic	mg/L	85	0.0027	0.0025	0.0078	0.0005	0.0014
Cadmium	mg/L	102	0.0005	0.0003	0.0050	0.0001	0.0016
Chlorophyll-a (correEDed)	ug/L	88	12.7	14.0	66.0	1.1	14.5
Copper	mg/L	102	0.0041	0.0044	0.0200	0.0013	0.0031
Dissolved Oxygen	% Saturation	0	None	None	None	None	None
Fecal Coliform	cfu/100mL	32	52	54	1200	4	255
Lead	mg/L	96	0.0022	0.0023	0.0150	0.0005	0.0020
Nitrogen, Ammonia	mg/L	99	0.034	None	2.060	0.002	0.208
Nitrogen, nitrate + nitrite	mg/L	95	0.044	0.040	0.750	0.006	0.127
Nitrogen, Total	mg/L	95	1.05	None	4.32	0.02	0.58
Nitrogen, Total Kjeldahl	mg/L	100	1.01	1.11	3.96	0.04	0.53
pH	None	100	7.9	7.9	9.0	6.5	0.4
Phosphorus, orthophosphate	mg/L	92	0.031	0.038	0.440	0.001	0.091
Phosphorus, Total	mg/L	98	0.103	0.109	1.580	0.001	0.195
Salinity	ppth	1	7.9200	7.9200	7.9200	7.9200	None
Specific Conductivity	umho/cm	102	515	510	939	219	112
Temperature	deg C	100	25.6	26.4	32.6	18.5	3.9
Total Hardness	mg/L	101	181	180	258	117	25
Total Suspended Solids	mg/L	93	3.8	4.4	38.0	0.5	4.6
Turbidity	NTU	101	2.8	3.0	71.5	0.1	7.4
Zinc	mg/L	100	0.0057	0.0050	0.0690	0.0013	0.0085

Table 5-6

Monitoring Data Summary

C-16 Watershed

SITE 28		Date Range: 01/28/99 - 09/10/20 Samples: 143					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	90	147	147	210	119	15
Arsenic	mg/L	49	0.0025	0.0025	0.0071	0.0003	0.0013
Cadmium	mg/L	66	0.0005	0.0003	0.0050	0.0002	0.0019
Chlorophyll-a (corrected)	ug/L	55	8.9	9.8	50.0	1.1	10.1
Copper	mg/L	66	0.0031	0.0031	0.0200	0.0007	0.0037
Dissolved Oxygen	% Saturation	27	71.5	86.0	147.0	12.1	33.7
Fecal Coliform	cfu/100mL	28	104	92	2600	10	663
Lead	mg/L	66	0.0023	0.0025	0.0261	0.0003	0.0032
Nitrogen, Ammonia	mg/L	136	0.026	0.033	2.760	0.001	0.236
Nitrogen, nitrate + nitrite	mg/L	138	0.036	0.042	13.000	0.001	1.106
Nitrogen, Total	mg/L	137	0.95	0.99	13.71	0.06	1.21
Nitrogen, Total Kjeldahl	mg/L	141	0.84	0.87	5.81	0.04	0.51
pH	None	140	7.7	7.8	8.6	6.2	0.4
Phosphorus, orthophosphate	mg/L	140	0.020	0.030	0.250	0.001	0.050
Phosphorus, Total	mg/L	129	0.068	0.067	0.877	0.001	0.095
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	143	452	475	946	5	123
Temperature	deg C	143	25.2	26.0	56.8	13.1	4.8
Total Hardness	mg/L	72	177	177	308	120	27
Total Suspended Solids	mg/L	137	3.0	2.7	24.9	1.0	3.3
Turbidity	NTU	143	2.4	2.5	13.0	0.1	2.0
Zinc	mg/L	66	0.0061	0.0055	0.1180	0.0024	0.0140

Table 5-6 Monitoring Data Summary
C-17 Watershed

SITE 12A		Date Range: 01/19/99 - 09/08/20 Samples: 108					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	29	147	148	186	87	20
Arsenic	mg/L	89	0.0028	0.0025	0.0071	0.0005	0.0014
Cadmium	mg/L	106	0.0005	0.0003	0.0050	0.0001	0.0016
Chlorophyll-a (corrected)	ug/L	94	12.4	15.0	74.8	1.1	11.3
Copper	mg/L	106	0.0032	0.0029	0.0500	0.0010	0.0055
Dissolved Oxygen	% Saturation	30	69.8	74.1	108.9	27.9	19.6
Fecal Coliform	CKu/100mL	35	138	110	4000	23	660
Lead	mg/L	100	0.0020	0.0023	0.0076	0.0004	0.0015
Nitrogen, Ammonia	mg/L	103	0.063	0.057	2.260	0.008	0.247
Nitrogen, nitrate + nitrite	mg/L	98	0.075	0.080	1.590	0.006	0.177
Nitrogen, Total	mg/L	100	1.31	1.13	9.08	0.03	2.18
Nitrogen, Total Kjeldahl	mg/L	105	1.03	1.04	3.10	0.04	0.41
pH	None	103	7.6	7.7	9.4	6.2	0.5
Phosphorus, orthophosphate	mg/L	96	0.008	0.009	0.058	0.001	0.013
Phosphorus, Total	mg/L	102	0.052	0.065	0.340	0.003	0.040
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	106	451	464	831	231	71
Temperature	deg C	106	25.2	26.0	31.7	16.3	3.8
Total Hardness	mg/L	100	163	171	216	86	24
Total Suspended Solids	mg/L	95	4.3	4.8	15.5	1.0	3.1
Turbidity	NTU	95	3.5	3.7	8.4	0.3	1.4
Zinc	mg/L	106	0.0065	0.0055	0.0614	0.0013	0.0078

SITE C17S44		Date Range: 01/19/99 - 09/10/20 Samples: 182					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	78	158	163	192	112	19
Arsenic	mg/L	14	0.0017	0.0019	0.0049	0.0005	0.0011
Cadmium	mg/L	31	0.0014	0.0008	0.0050	0.0002	0.0022
Chlorophyll-a (corrected)	ug/L	23	9.2	9.1	40.0	1.7	9.7
Copper	mg/L	31	0.0042	0.0050	0.0500	0.0007	0.0089
Dissolved Oxygen	% Saturation	32	70.6	71.4	106.9	44.9	16.1
Fecal Coliform	cfu/100mL	31	96	100	730	5	215
Lead	mg/L	31	0.0021	0.0019	0.0250	0.0003	0.0045
Nitrogen, Ammonia	mg/L	178	0.033	0.037	1.500	0.003	0.123
Nitrogen, nitrate + nitrite	mg/L	179	0.032	0.036	0.374	0.001	0.091
Nitrogen, Total	mg/L	176	0.86	0.89	1.51	0.02	0.22
Nitrogen, Total Kjeldahl	mg/L	117	0.87	0.87	1.33	0.20	0.16
pH	None	180	7.7	7.7	8.3	6.6	0.3
Phosphorus, orthophosphate	mg/L	178	0.007	0.007	0.095	0.001	0.017
Phosphorus, Total	mg/L	171	0.042	0.047	0.126	0.002	0.021
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	182	459	465	728	313	48
Temperature	deg C	182	25.6	26.3	90.0	15.7	6.2
Total Hardness	mg/L	40	174	185	233	90	30
Total Suspended Solids	mg/L	178	2.7	3.0	26.0	0.1	3.3
Turbidity	NTU	181	2.4	2.4	18.1	0.7	1.7
Zinc	mg/L	31	0.0080	0.0100	0.0954	0.0032	0.0161

Table 5-6
Monitoring Data Summary
C-18 Watershed

SITE 16		Date Range: 01/19/99 - 09/08/20 Samples: 106					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	30	120	139	216	31	51
Arsenic	mg/L	87	0.0022	0.0025	0.0071	0.0005	0.0012
Cadmium	mg/L	104	0.0004	0.0003	0.0050	0.0001	0.0016
Chlorophyll-a (corrected)	ug/L	90	4.1	3.8	43.0	0.6	6.7
Copper	mg/L	102	0.0020	0.0013	0.0100	0.0003	0.0031
Dissolved Oxygen	% Saturation	30	47.7	46.8	147.1	22.8	28.8
Fecal Coliform	cfu/100mL	34	33	20	1400	2	249
Lead	mg/L	102	0.0021	0.0023	0.0125	0.0005	0.0017
Nitrogen, Ammonia	mg/L	99	0.040	0.040	0.498	0.008	0.073
Nitrogen, nitrate + nitrite	mg/L	97	0.036	0.033	1.210	0.006	0.153
Nitrogen, Total	mg/L	97	0.96	0.99	2.35	0.06	0.41
Nitrogen, Total Kjeldahl	mg/L	104	0.91	0.93	2.30	0.04	0.40
pH	None	95	7.4	7.4	9.7	6.0	0.5
Phosphorus, orthophosphate	mg/L	98	0.007	0.007	0.560	0.001	0.057
Phosphorus, Total	mg/L	99	0.032	0.034	1.500	0.001	0.153
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	98	348	392	980	105	149
Temperature	deg C	98	24.6	25.5	33.4	15.8	3.9
Total Hardness	mg/L	94	131	149	734	30	84
Total Suspended Solids	mg/L	100	2.4	2.3	29.7	1.0	3.9
Turbidity	NTU	102	1.7	1.7	10.2	0.5	1.4
Zinc	mg/L	103	0.0061	0.0050	0.0500	0.0012	0.0108

SITE 15		Date Range: 01/19/99 - 09/08/20 Samples: 103					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	26	110	99	244	41	65
Arsenic	mg/L	84	0.0023	0.0025	0.0071	0.0005	0.0013
Cadmium	mg/L	101	0.0005	0.0003	0.0050	0.0001	0.0017
Chlorophyll-a (corrected)	ug/L	88	2.1	2.2	19.0	0.1	2.4
Copper	mg/L	100	0.0025	0.0015	49.5000	0.0003	6.7364
Dissolved Oxygen	% Saturation	27	35.5	38.5	62.8	19.7	11.8
Fecal Coliform	cfu/100mL	34	48	35	1100	1	230
Lead	mg/L	101	0.0021	0.0024	0.0060	0.0005	0.0013
Nitrogen, Ammonia	mg/L	99	0.042	0.040	8.167	0.007	0.817
Nitrogen, nitrate + nitrite	mg/L	94	0.025	0.020	0.480	0.006	0.082
Nitrogen, Total	mg/L	86	0.87	0.87	4.51	0.01	0.54
Nitrogen, Total Kjeldahl	mg/L	94	0.86	0.81	4.50	0.29	0.51
pH	None	92	7.3	7.3	9.4	2.8	0.7
Phosphorus, orthophosphate	mg/L	94	0.005	0.003	0.071	0.001	0.013
Phosphorus, Total	mg/L	95	0.019	0.016	1.500	0.001	0.262
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	95	310	331	632	91	125
Temperature	deg C	95	23.6	24.1	30.9	15.8	4.0
Total Hardness	mg/L	87	105	103	260	38	53
Total Suspended Solids	mg/L	97	1.8	1.8	15.0	0.5	2.0
Turbidity	NTU	99	0.8	0.7	18.3	0.1	1.9
Zinc	mg/L	101	0.0054	0.0050	0.0300	0.0012	0.0040

Table 5-6
Monitoring Data Summary
C-18 Watershed

SITE 92		Date Range: 01/19/99 - 05/19/20 Samples: 166					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	110	142	140	278	61	53
Arsenic	mg/L	16	0.0011	0.0009	0.0024	0.0005	0.0007
Cadmium	mg/L	33	0.0013	0.0008	0.0050	0.0002	0.0022
Chlorophyll-a (corrected)	ug/L	45	3.7	3.5	15.3	1.0	2.9
Copper	mg/L	33	0.0033	0.0027	0.0100	0.0003	0.0042
Dissolved Oxygen	% Saturation	15	46.3	56.2	78.9	5.7	20.6
Fecal Coliform	cfu/100mL	44	17	12	730	1	139
Lead	mg/L	32	0.0020	0.0013	0.0236	0.0003	0.0042
Nitrogen, Ammonia	mg/L	162	0.031	0.036	1.500	0.003	0.120
Nitrogen, nitrate + nitrite	mg/L	161	0.023	0.032	0.520	0.001	0.064
Nitrogen, Total	mg/L	164	0.82	0.89	1.65	0.00	0.21
Nitrogen, Total Kjeldahl	mg/L	142	0.86	0.87	1.40	0.22	0.16
pH	None	164	7.4	7.5	8.2	6.2	0.3
Phosphorus, orthophosphate	mg/L	165	0.004	0.003	0.500	0.001	0.041
Phosphorus, Total	mg/L	153	0.024	0.023	23.000	0.002	1.857
Salinity	ppth	22	0.2545	0.2000	0.4000	0.2000	0.0875
Specific Conductivity	umho/cm	166	419	415	909	148	169
Temperature	deg C	164	26.4	26.5	3001.0	15.8	232.3
Total Hardness	mg/L	40	158	172	298	60	61
Total Suspended Solids	mg/L	155	1.3	1.5	153.0	0.0	12.2
Turbidity	NTU	165	1.7	1.6	8.6	0.4	1.2
Zinc	mg/L	33	0.0075	0.0100	0.1580	0.0027	0.0270

SITE 81		Date Range: 01/19/99 - 12/17/20 Samples: 165					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	108	132	137	247	59	45
Arsenic	mg/L	16	0.0012	0.0011	0.0024	0.0005	0.0007
Cadmium	mg/L	33	0.0013	0.0008	0.0050	0.0002	0.0022
Chlorophyll-a (correEDed)	ug/L	43	4.9	4.8	15.8	1.0	4.4
Copper	mg/L	33	0.0033	0.0033	0.0100	0.0003	0.0042
Dissolved Oxygen	% Saturation	15	71.4	71.1	109.1	25.0	18.7
Fecal Coliform	cfu/100mL	44	54	50	1600	3	356
Lead	mg/L	33	0.0020	0.0013	0.0236	0.0003	0.0042
Nitrogen, Ammonia	mg/L	158	0.026	None	0.140	0.003	0.029
Nitrogen, nitrate + nitrite	mg/L	162	0.017	0.021	0.244	0.002	0.039
Nitrogen, Total	mg/L	163	0.77	None	1.32	0.00	0.19
Nitrogen, Total Kjeldahl	mg/L	141	0.81	0.82	1.30	0.26	0.15
pH	None	151	7.6	7.7	8.3	6.5	0.4
Phosphorus, orthophosphate	mg/L	162	0.004	0.003	0.082	0.001	0.012
Phosphorus, Total	mg/L	151	0.021	0.021	0.210	0.002	0.022
Salinity	ppth	16	0.1949	0.2000	1.0000	0.1000	0.2154
Specific Conductivity	umho/cm	161	403	401	1588	151	218
Temperature	deg C	162	25.3	26.2	33.2	15.8	4.0
Total Hardness	mg/L	42	156	173	311	60	60
Total Suspended Solids	mg/L	142	1.6	1.5	6.0	0.3	1.0
Turbidity	NTU	165	1.4	1.4	8.7	0.3	0.9
Zinc	mg/L	33	0.0070	0.0080	0.0429	0.0018	0.0075

• Sites C18G92 and C18S46 were substitued by Sites 81 and 92 for the September 2015- October 2016 permit cycle

Table 5-6
Monitoring Data Summary
C-51 Watershed

SITE 38B		Date Range: 01/21/99 - 07/24/20 Samples: 107					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	28	138	135	291	62	55
Arsenic	mg/L	87	0.0026	0.0025	0.0160	0.0005	0.0023
Cadmium	mg/L	104	0.0005	0.0003	0.0050	0.0001	0.0016
Chlorophyll-a (corrected)	ug/L	94	6.5	6.9	70.7	1.0	12.6
Copper	mg/L	102	0.0025	0.0018	0.0100	0.0005	0.0030
Dissolved Oxygen	% Saturation	24	71.3	82.0	137.8	31.6	26.2
Fecal Coliform	cfu/100mL	34	66	80	1090	2	211
Lead	mg/L	104	0.0021	0.0023	0.0152	0.0003	0.0018
Nitrogen, Ammonia	mg/L	103	0.064	0.059	0.830	0.008	0.165
Nitrogen, nitrate + nitrite	mg/L	97	0.168	0.210	1.400	0.006	0.243
Nitrogen, Total	mg/L	93	1.52	1.55	4.05	0.06	0.75
Nitrogen, Total Kjeldahl	mg/L	105	1.31	1.31	4.00	0.04	0.76
pH	None	98	7.7	7.7	14.0	6.6	0.8
Phosphorus, orthophosphate	mg/L	99	0.034	0.047	0.540	0.002	0.065
Phosphorus, Total	mg/L	95	0.096	0.110	0.891	0.003	0.132
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	97	708	736	1837	2	413
Temperature	deg C	100	24.8	25.5	33.4	16.7	4.2
Total Hardness	mg/L	99	212	209	412	59	85
Total Suspended Solids	mg/L	101	9.8	10.5	60.0	1.0	11.4
Turbidity	NTU	103	10.4	11.2	69.9	0.6	13.9
Zinc	mg/L	102	0.0063	0.0055	0.0894	0.0013	0.0110

SITE 37B		Date Range: 01/21/99 - 07/24/20 Samples: 104					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	30	159	167	238	103	36
Arsenic	mg/L	85	0.0024	0.0025	0.0071	0.0002	0.0012
Cadmium	mg/L	101	0.0004	0.0003	0.0050	0.0001	0.0016
Chlorophyll-a (corrected)	ug/L	91	4.2	4.3	22.3	0.4	4.4
Copper	mg/L	101	0.0025	0.0021	0.0100	0.0005	0.0029
Dissolved Oxygen	% Saturation	23	67.4	70.3	97.1	31.0	18.8
Fecal Coliform	cfu/100mL	32	48	44	300	10	88
Lead	mg/L	101	0.0021	0.0023	0.0155	0.0005	0.0018
Nitrogen, Ammonia	mg/L	103	0.058	0.060	0.332	0.008	0.062
Nitrogen, nitrate + nitrite	mg/L	92	0.142	0.181	1.320	0.010	0.214
Nitrogen, Total	mg/L	93	0.96	1.12	6.89	0.06	0.87
Nitrogen, Total Kjeldahl	mg/L	102	0.83	0.92	6.70	0.04	0.79
pH	None	95	7.5	7.6	9.6	2.8	0.6
Phosphorus, orthophosphate	mg/L	98	0.022	0.035	0.193	0.001	0.037
Phosphorus, Total	mg/L	91	0.057	0.075	1.540	0.001	0.179
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	97	666	684	1198	163	172
Temperature	deg C	97	25.3	26.1	32.2	16.8	3.9
Total Hardness	mg/L	97	215	221	305	124	42
Total Suspended Solids	mg/L	100	4.8	5.1	43.3	1.0	7.7
Turbidity	NTU	101	4.9	5.1	87.0	0.1	13.1
Zinc	mg/L	100	0.0061	0.0052	0.1100	0.0013	0.0125

Table 5-6

Monitoring Data Summary

C-51 Watershed

SITE C51S155		Date Range: 01/21/99 - 09/03/20 Samples: 190					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	86	161	163	216	100	24
Arsenic	mg/L	14	0.0014	0.0016	0.0029	0.0005	0.0008
Cadmium	mg/L	30	0.0015	0.0008	0.0050	0.0002	0.0022
Chlorophyll-a (corrected)	ug/L	42	1.3	3.4	45.0	0.0	9.2
Copper	mg/L	29	0.0051	0.0064	0.0230	0.0017	0.0047
Dissolved Oxygen	% Saturation	32	69.6	76.3	111.6	30.2	20.9
Fecal Coliform	cfu/100mL	29	148	150	2000	2	388
Lead	mg/L	30	0.0022	0.0039	0.0152	0.0005	0.0030
Nitrogen, Ammonia	mg/L	185	0.046	0.059	0.520	0.003	0.067
Nitrogen, nitrate + nitrite	mg/L	183	0.100	0.184	20.900	0.003	1.541
Nitrogen, Total	mg/L	184	1.11	1.12	21.79	0.15	1.58
Nitrogen, Total Kjeldahl	mg/L	127	0.96	0.94	3.87	0.41	0.37
pH	None	187	7.6	7.6	8.5	6.2	0.3
Phosphorus, orthophosphate	mg/L	188	0.021	0.031	0.279	0.001	0.040
Phosphorus, Total	mg/L	177	0.065	0.067	0.200	0.003	0.033
Salinity	ppth	1	0.3300	0.3300	0.3300	0.3300	None
Specific Conductivity	umho/cm	189	582	597	1681	6	183
Temperature	ECg C	189	25.3	26.0	56.3	15.3	4.5
Total Hardness	mg/L	50	61	191	337	1	93
Total SuspenECd Solids	mg/L	186	3.6	4.0	47.0	1.0	5.7
Turbidity	NTU	190	4.5	4.1	59.4	1.1	8.1
Zinc	mg/L	30	0.0079	0.0100	0.0310	0.0032	0.0056

Table 5-6

Monitoring Data Summary

Loxahatchee River Watershed

SITE 69		Date Range: 11/20/03 - 07/13/20 Samples: 171					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	161	152	153	245	74	37
Arsenic	mg/L	0	None	None	None	None	None
Cadmium	mg/L	0	None	None	None	None	None
Chlorophyll-a (corrected)	ug/L	159	3.0	3.1	19.5	0.1	3.6
Copper	mg/L	0	None	None	None	None	None
Dissolved Oxygen	% Saturation	78	45.1	47.3	69.6	12.0	12.6
Fecal Coliform	cfu/100mL	161	31	26	13800	3	1090
Lead	mg/L	0	None	None	None	None	None
Nitrogen, Ammonia	mg/L	157	0.085	0.090	0.471	0.025	0.059
Nitrogen, nitrate + nitrite	mg/L	161	0.060	0.059	0.262	0.007	0.047
Nitrogen, Total	mg/L	161	0.98	0.94	38.00	0.52	2.93
Nitrogen, Total Kjeldahl	mg/L	144	0.87	0.90	2.52	0.50	0.28
pH	None	167	7.2	7.3	8.1	6.3	0.3
Phosphorus, orthophosphate	mg/L	161	0.011	0.012	0.104	0.001	0.014
Phosphorus, Total	mg/L	161	0.037	0.034	0.246	0.003	0.030
Salinity	ppth	133	0.2912	0.3000	11.4000	0.1000	1.5762
Specific Conductivity	umho/cm	131	585	491	19200	218	2716
Temperature	deg C	162	25.0	25.2	31.3	17.0	3.7
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	161	2.1	2.0	21.8	0.5	2.2
Turbidity	NTU	89	3.2	3.2	7.2	1.5	1.1
Zinc	mg/L	8	0.0080	0.0100	0.0100	0.0050	0.0024

SITE 51		Date Range: 05/11/00 - 07/29/20 Samples: 102					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	81	119	123	163	62	16
Arsenic	mg/L	0	None	None	None	None	None
Cadmium	mg/L	8	0.0033	0.0050	0.0440	0.0008	0.0146
Chlorophyll-a (corrected)	ug/L	79	4.0	4.0	62.0	0.5	7.4
Copper	mg/L	7	0.0088	0.0050	0.0700	0.0014	0.0296
Dissolved Oxygen	% Saturation	27	83.2	86.8	98.5	41.3	13.2
Fecal Coliform	cfu/100mL	88	15	14	420	1	63
Lead	mg/L	7	0.0034	0.0050	0.0340	0.0011	0.0119
Nitrogen, Ammonia	mg/L	57	0.031	0.030	0.140	0.002	0.028
Nitrogen, nitrate + nitrite	mg/L	89	0.008	0.006	0.068	0.002	0.016
Nitrogen, Total	mg/L	86	0.35	0.30	2.29	0.10	0.45
Nitrogen, Total Kjeldahl	mg/L	78	0.35	0.30	2.23	0.10	0.46
pH	None	90	7.8	7.9	8.4	6.7	0.3
Phosphorus, orthophosphate	mg/L	86	0.006	0.006	0.177	0.001	0.020
Phosphorus, Total	mg/L	89	0.025	0.025	0.222	0.006	0.025
Salinity	ppth	71	23.9211	31.1000	37.5000	0.6000	9.2724
Specific Conductivity	umho/cm	72	37460	47750	56271	1118	13459
Temperature	deg C	88	24.7	25.2	31.1	15.9	3.8
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	89	5.5	5.3	43.5	0.8	6.4
Turbidity	NTU	89	3.2	3.2	7.2	1.5	1.1
Zinc	mg/L	8	0.0080	0.0100	0.0100	0.0050	0.0024

Table 5-6
Monitoring Data Summary
Loxahatchee River Watershed

SITE 62		Date Range: 05/31/00 - 07/29/20 Samples: 172					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	164	133	137	226	64	27
Arsenic	mg/L	0	None	None	None	None	None
Cadmium	mg/L	8	0.0027	0.0050	0.0080	0.0008	0.0027
Chlorophyll-a (corrected)	ug/L	155	5.3	5.6	61.9	0.5	5.7
Copper	mg/L	7	0.0071	0.0100	0.0500	0.0017	0.0184
Dissolved Oxygen	% Saturation	68	67.2	69.6	93.9	37.3	12.7
Fecal Coliform	cfu/100mL	171	60	64	2300	1	217
Lead	mg/L	7	0.0030	0.0050	0.0130	0.0011	0.0042
Nitrogen, Ammonia	mg/L	162	0.053	0.050	0.650	0.010	0.075
Nitrogen, nitrate + nitrite	mg/L	172	0.033	0.048	0.182	0.002	0.040
Nitrogen, Total	mg/L	172	0.77	0.77	3.93	0.23	0.55
Nitrogen, Total Kjeldahl	mg/L	161	0.71	0.70	3.93	0.20	0.56
pH	None	172	7.6	7.6	73.8	7.0	5.1
Phosphorus, orthophosphate	mg/L	170	0.022	0.025	0.121	0.002	0.017
Phosphorus, Total	mg/L	160	0.046	0.047	0.480	0.006	0.041
Salinity	ppth	157	6.9263	11.0000	35.7000	0.2000	9.4984
Specific Conductivity	umho/cm	142	12639	18906	53860	316	15020
Temperature	deg C	167	25.1	25.5	32.8	16.1	3.8
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	160	4.2	4.0	23.2	1.0	3.0
Turbidity	NTU	172	2.9	2.8	22.0	1.2	2.0
Zinc	mg/L	8	0.0124	0.0100	0.0480	0.0050	0.0185

SITE 72		Date Range: 05/11/00 - 07/14/20 Samples: 179					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	170	123	129	178	28	20
Arsenic	mg/L	0	None	None	None	None	None
Cadmium	mg/L	8	0.0035	0.0050	0.0720	0.0008	0.0244
Chlorophyll-a (corrected)	ug/L	173	8.4	9.0	97.9	0.5	11.3
Copper	mg/L	7	0.0076	0.0100	0.0600	0.0010	0.0246
Dissolved Oxygen	% Saturation	80	77.5	81.6	128.1	27.2	16.4
Fecal Coliform	cfu/100mL	177	85	96	1336	1	211
Lead	mg/L	7	0.0044	0.0050	0.0640	0.0011	0.0229
Nitrogen, Ammonia	mg/L	167	0.091	0.100	3.000	0.015	0.241
Nitrogen, nitrate + nitrite	mg/L	178	0.019	0.025	0.172	0.000	0.028
Nitrogen, Total	mg/L	177	0.61	0.63	2.88	0.10	0.37
Nitrogen, Total Kjeldahl	mg/L	160	0.58	0.60	2.85	0.10	0.37
pH	None	179	7.7	7.8	8.2	6.8	0.2
Phosphorus, orthophosphate	mg/L	176	0.009	0.009	0.100	0.001	0.012
Phosphorus, Total	mg/L	178	0.037	0.036	0.640	0.006	0.047
Salinity	ppth	158	18.4127	27.8550	37.9800	0.0400	10.1121
Specific Conductivity	umho/cm	143	28298	42671	63745	500	15613
Temperature	deg C	174	25.9	27.1	32.5	16.0	3.6
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	177	4.9	4.7	22.4	0.5	4.3
Turbidity	NTU	178	3.0	3.1	8.7	0.3	1.3
Zinc	mg/L	8	0.0164	0.0100	0.2780	0.0050	0.0941

Table 5-6
Monitoring Data Summary
ICWW-N River Watershed

SITE 30		Date Range: 05/10/00 - 07/29/20 Samples: 103					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	90	123	125	137	79	9
Arsenic	mg/L	6	0.0035	0.0042	0.0047	0.0021	0.0011
Cadmium	mg/L	8	0.0027	0.0050	0.0080	0.0008	0.0027
Chlorophyll-a (corrected)	ug/L	87	4.0	4.4	36.3	0.5	4.3
Copper	mg/L	7	0.0116	0.0100	0.0900	0.0017	0.0319
Dissolved Oxygen	% Saturation	39	78.4	82.0	92.9	15.6	12.5
Fecal Coliform	cfu/100mL	96	14	13	616	1	91
Lead	mg/L	7	0.0040	0.0050	0.1020	0.0011	0.0375
Nitrogen, Ammonia	mg/L	59	0.049	0.040	0.300	0.010	0.088
Nitrogen, nitrate + nitrite	mg/L	98	0.011	0.010	0.146	0.003	0.026
Nitrogen, Total	mg/L	97	0.29	0.31	2.04	0.02	0.40
Nitrogen, Total Kjeldahl	mg/L	87	0.34	0.30	2.02	0.10	0.38
pH	None	102	7.8	7.8	8.3	7.1	0.2
Phosphorus, orthophosphate	mg/L	90	0.006	0.006	0.100	0.001	0.012
Phosphorus, Total	mg/L	98	0.026	0.024	0.130	0.010	0.017
Salinity	ppth	79	30.0209	31.9000	37.9000	15.6000	5.1359
Specific Conductivity	umho/cm	90	37163	48446	56789	281	11847
Temperature	deg C	100	25.7	26.2	32.3	17.7	3.6
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	98	5.5	5.5	15.6	2.0	3.1
Turbidity	NTU	98	2.9	2.9	7.6	1.1	1.3
Zinc	mg/L	8	0.0182	0.0100	0.1210	0.0016	0.0470

Table 5-6
Monitoring Data Summary
Lake Worth Lagoon North Watershed

SITE LWL-1		Date Range: 01/26/99 - 09/16/20 Samples: 145					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	7	0.0039	0.0025	0.0089	0.0023	0.0029
Cadmium	mg/L	7	0.0009	0.0006	0.0025	0.0002	0.0011
Chlorophyll-a (corrected)	ug/L	117	4.8	5.0	19.7	0.0	3.5
Copper	mg/L	31	0.0029	0.0030	0.0048	0.0017	0.0008
Dissolved Oxygen	mg/L	22	99.1	99.8	119.0	85.7	7.8
Fecal Coliform	cfu/100mL	2	14	26	47	4	30
Lead	mg/L	7	0.0031	0.0025	0.0246	0.0013	0.0085
Nitrogen, Ammonia	mg/L	133	0.010	0.010	0.260	0.001	0.029
Nitrogen, nitrate + nitrite	mg/L	115	0.006	0.003	0.120	0.003	0.019
Nitrogen, Total	mg/L	112	0.35	0.35	0.96	0.00	0.17
Nitrogen, Total Kjeldahl	mg/L	96	0.36	0.35	0.92	0.09	0.17
pH	None	140	7.9	7.9	8.9	7.2	0.2
Phosphorus, orthophosphate	mg/L	128	0.007	0.008	0.104	0.001	0.012
Phosphorus, Total	mg/L	126	0.032	0.033	0.120	0.002	0.017
Salinity	ppth	104	30.6025	31.2000	36.1000	21.1000	3.1135
Specific Conductivity	umho/cm	143	45814	47775	67154	4184	6514
Temperature	deg C	143	26.0	26.8	32.8	14.6	4.4
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	110	4.4	5.0	33.0	1.5	5.7
Turbidity	NTU	141	1.6	2.0	6.0	0.1	0.8
Zinc	mg/L	6	0.0041	0.0042	0.0050	0.0034	0.0009

SITE 11		Date Range: 01/26/99 - 09/01/20 Samples: 170					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	1	130	130	130	130	None
Arsenic	mg/L	26	0.0114	0.0036	2.5000	0.0028	0.8107
Cadmium	mg/L	39	0.0010	0.0004	0.2500	0.0001	0.0670
Chlorophyll-a (corrected)	ug/L	151	3.1	2.9	29.9	0.1	4.4
Copper	mg/L	37	0.0075	0.0042	6.2500	0.0013	1.1796
Dissolved Oxygen	mg/L	33	92.9	93.8	111.0	73.0	7.9
Fecal Coliform	DZu/100mL	39	16	15	170	2	38
Lead	mg/L	38	0.0066	0.0036	2.5000	0.0002	0.6803
Nitrogen, Ammonia	mg/L	161	0.036	0.034	0.250	0.007	0.044
Nitrogen, nitrate + nitrite	mg/L	141	0.044	0.035	1.200	0.007	0.165
Nitrogen, Total	mg/L	141	0.39	0.42	1.87	0.04	0.33
Nitrogen, Total Kjeldahl	mg/L	161	0.34	0.37	1.86	0.04	0.30
pH	None	160	7.8	7.9	8.7	6.6	0.3
Phosphorus, orthophosphate	mg/L	156	0.014	0.025	0.650	0.001	0.056
Phosphorus, Total	mg/L	159	0.035	0.042	1.110	0.001	0.095
Salinity	ppth	136	30.6045	31.7700	35.9700	9.5400	4.0661
Specific Conductivity	umho/cm	161	43473	48698	54441	425	8594
Temperature	deg C	149	25.8	26.0	32.4	16.5	3.7
Total Hardness	mg/L	5	5433	5570	6120	4680	555
Total Suspended Solids	mg/L	18	15.6	21.5	59.0	1.0	16.0
Turbidity	NTU	165	1.7	1.9	12.4	0.1	1.5
Zinc	mg/L	34	0.0179	0.0100	5.0000	0.0034	1.4337

Table 5-6 Monitoring Data Summary
Lake Worth Lagoon North Watershed

SITE 13		Date Range: 05/11/00 - 09/01/20 Samples: 164					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	1	140	140	140	140	None
Arsenic	mg/L	28	0.0092	0.0036	2.5000	0.0026	0.7855
Cadmium	mg/L	35	0.0007	0.0004	0.2500	0.0001	0.0707
Chlorophyll-a (corrected)	ug/L	150	3.9	3.9	24.1	0.1	4.3
Copper	mg/L	33	0.0063	0.0027	12.9000	0.0013	2.4045
Dissolved Oxygen	mg/L	33	90.1	90.8	109.5	59.9	10.8
Fecal Coliform	cfu/100mL	36	53	51	3200	6	533
Lead	mg/L	34	0.0056	0.0046	2.5000	0.0002	0.7186
Nitrogen, Ammonia	mg/L	159	0.044	0.040	13.000	0.007	1.028
Nitrogen, nitrate + nitrite	mg/L	145	0.048	0.047	1.517	0.003	0.213
Nitrogen, Total	mg/L	148	0.46	0.48	2.14	0.06	0.38
Nitrogen, Total Kjeldahl	mg/L	161	0.41	0.45	1.83	0.04	0.31
pH	None	154	7.8	7.8	8.4	6.4	0.2
Phosphorus, orthophosphate	mg/L	153	0.016	0.025	0.650	0.001	0.058
Phosphorus, Total	mg/L	154	0.039	0.044	1.400	0.001	0.127
Salinity	ppth	135	25.5658	30.1400	38.3000	0.6300	7.3571
Specific Conductivity	umho/cm	153	38127	46665	59740	531	11514
Temperature	deg C	153	26.0	26.4	32.8	16.0	3.8
Total Hardness	mg/L	6	976	4940	5840	0	2122
Total Suspended Solids	mg/L	15	20.4	28.8	56.0	2.5	16.8
Turbidity	NTU	157	1.9	2.2	13.0	0.1	1.4
Zinc	mg/L	29	0.0172	0.0100	5.0000	0.0034	1.5453

SITE LWL-4		Date Range: 04/05/04 - 09/16/20 Samples: 143					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	7	0.0041	0.0025	0.0090	0.0023	0.0033
Cadmium	mg/L	7	0.0004	0.0003	0.0017	0.0003	0.0005
Chlorophyll-a (corrected)	ug/L	119	2.5	2.2	14.7	0.1	2.6
Copper	mg/L	30	0.0019	0.0018	0.0031	0.0009	0.0006
Dissolved Oxygen	mg/L	24	101.1	103.0	132.3	72.5	11.2
Fecal Coliform	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	7	0.0025	0.0025	0.0157	0.0005	0.0052
Nitrogen, Ammonia	mg/L	135	0.008	0.008	0.390	0.003	0.035
Nitrogen, nitrate + nitrite	mg/L	124	0.004	0.003	0.050	0.003	0.007
Nitrogen, Total	mg/L	123	0.28	0.27	0.74	0.00	0.14
Nitrogen, Total Kjeldahl	mg/L	94	0.29	0.27	0.73	0.13	0.15
pH	None	139	8.0	8.0	9.0	7.5	0.2
Phosphorus, orthophosphate	mg/L	125	0.003	0.003	0.183	0.001	0.017
Phosphorus, Total	mg/L	123	0.022	0.021	0.064	0.011	0.010
Salinity	ppth	107	32.5812	33.3000	36.6000	24.7000	2.7365
Specific Conductivity	umho/cm	142	48681	50392	68870	4594	5992
Temperature	deg C	142	25.5	26.5	32.2	15.2	4.3
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	112	6.6	7.0	52.0	1.5	7.4
Turbidity	NTU	141	2.4	2.6	10.3	0.8	1.7
Zinc	mg/L	6	0.0051	0.0042	0.0197	0.0034	0.0065

Table 5-6

Monitoring Data Summary

Lake Worth Lagoon Central Watershed

SITE LWL-8		Date Range: 01/26/99 - 09/15/20 Samples: 178					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	4	120	124	141	95	19
Arsenic	mg/L	6	0.0043	0.0045	0.0098	0.0023	0.0032
Cadmium	mg/L	18	0.0016	0.0035	0.0060	0.0003	0.0023
Chlorophyll-a (corrected)	ug/L	143	5.7	5.4	41.2	0.5	7.2
Copper	mg/L	38	0.0029	0.0017	0.0500	0.0012	0.0110
Dissolved Oxygen	mg/L	44	94.5	97.3	135.8	61.2	11.4
Fecal Coliform	cfu/100mL	16	30	36	700	2	169
Lead	mg/L	17	0.0041	0.0050	0.0530	0.0011	0.0121
Nitrogen, Ammonia	mg/L	165	0.024	0.025	3.046	0.001	0.250
Nitrogen, nitrate + nitrite	mg/L	157	0.024	0.032	0.430	0.003	0.058
Nitrogen, Total	mg/L	146	0.51	0.49	1.67	0.02	0.30
Nitrogen, Total Kjeldahl	mg/L	102	0.45	0.47	1.50	0.13	0.31
pH	None	174	7.8	7.9	10.6	1.9	0.6
Phosphorus, orthophosphate	mg/L	159	0.014	0.015	0.130	0.001	0.016
Phosphorus, Total	mg/L	157	0.047	0.045	0.270	0.012	0.030
Salinity	ppth	126	25.5743	28.8500	36.4000	9.3200	6.9937
Specific Conductivity	umho/cm	178	38141	43239	63187	2762	10950
Temperature	deg C	177	25.6	26.7	34.1	12.1	4.4
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	145	9.2	9.0	82.0	1.0	11.5
Turbidity	NTU	177	4.9	5.4	14.7	1.2	2.7
Zinc	mg/L	18	0.0088	0.0100	0.1200	0.0034	0.0271

SITE 18C		Date Range: 01/30/04 - 08/31/20 Samples: 148					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	1	140	140	140	140	None
Arsenic	mg/L	27	0.0096	0.0036	2.5000	0.0023	0.7987
Cadmium	mg/L	26	0.0005	0.0002	0.2500	0.0001	0.0814
Chlorophyll-a (corrected)	ug/L	138	5.3	5.8	32.0	0.1	5.5
Copper	mg/L	26	0.0048	0.0021	4.8000	0.0013	1.0842
Dissolved Oxygen	mg/L	32	90.0	92.0	156.6	62.4	17.0
Fecal Coliform	cfu/100mL	25	26	20	300	2	75
Lead	mg/L	26	0.0072	0.0026	2.5000	0.0009	0.8131
Nitrogen, Ammonia	mg/L	134	0.048	0.050	0.310	0.009	0.055
Nitrogen, nitrate + nitrite	mg/L	133	0.084	0.100	1.677	0.006	0.259
Nitrogen, Total	mg/L	129	0.74	0.79	20.80	0.03	1.84
Nitrogen, Total Kjeldahl	mg/L	136	0.63	0.66	20.70	0.04	1.78
pH	None	130	7.8	7.8	9.4	7.1	0.2
Phosphorus, orthophosphate	mg/L	138	0.025	0.037	0.156	0.001	0.024
Phosphorus, Total	mg/L	131	0.067	0.074	1.280	0.001	0.117
Salinity	ppth	102	22.9443	28.9550	3388.0000	4.7400	333.1868
Specific Conductivity	umho/cm	119	33401	45057	55098	537	14524
Temperature	deg C	129	26.6	27.9	33.9	14.1	4.4
Total Hardness	mg/L	5	5171	5320	5800	4590	491
Total Suspended Solids	mg/L	5	35.5	39.8	42.0	20.2	9.3
Turbidity	NTU	142	8.9	11.0	222.0	0.1	19.3
Zinc	mg/L	22	0.0184	0.0063	5.0000	0.0034	1.7532

Table 5-6
Monitoring Data Summary
Lake Worth Lagoon Central Watershed

SITE 18D		Date Range: 07/28/05 - 08/31/20 Samples: 134					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	26	0.0098	0.0036	2.5000	0.0023	0.8124
Cadmium	mg/L	26	0.0006	0.0002	0.2500	0.0001	0.0813
Chlorophyll-a (corrected)	ug/L	125	5.2	5.7	41.1	0.1	8.1
Copper	mg/L	26	0.0048	0.0021	3.0000	0.0013	0.6613
Dissolved Oxygen	mg/L	32	97.5	98.9	132.8	74.5	13.9
Fecal Coliform	CRu/100mL	15	18	20	400	1	101
Lead	mg/L	26	0.0070	0.0026	2.5000	0.0002	0.8131
Nitrogen, Ammonia	mg/L	128	0.042	0.042	0.400	0.007	0.059
Nitrogen, nitrate + nitrite	mg/L	114	0.058	0.064	1.477	0.006	0.236
Nitrogen, Total	mg/L	106	0.55	0.59	3.87	0.03	0.49
Nitrogen, Total Kjeldahl	mg/L	124	0.47	0.49	3.86	0.04	0.42
pH	mg/L	104	7.9	7.9	9.3	7.3	0.2
Phosphorus, orthophosphate	mg/L	124	0.016	0.027	0.500	0.000	0.051
Phosphorus, Total	mg/L	126	0.061	0.062	1.620	0.004	0.169
Salinity	mg/L	95	26.8306	30.3900	352.2000	9.3600	34.1492
SpeCRfic Conductivity	mg/L	102	39664	46331	54782	3311	11370
Temperature	mg/L	117	26.9	27.1	263.7	16.6	22.3
Total Hardness	mg/L	5	5380	5440	5960	4340	648
Total Suspended Solids	mg/L	3	48.0	35.5	126.0	24.8	55.6
Turbidity	mg/L	131	5.0	6.5	72.2	0.1	7.2
Zinc	mg/L	21	0.0150	0.0055	5.0000	0.0034	1.7907

SITE LWL-11		Date Range: 01/26/99 - 09/15/20 Samples: 156					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	6	0.0040	0.0025	0.0173	0.0023	0.0060
Cadmium	mg/L	6	0.0004	0.0004	0.0006	0.0003	0.0002
Chlorophyll-a (corrected)	ug/L	124	5.7	6.1	59.2	0.0	7.4
Copper	mg/L	29	0.0019	0.0017	0.0160	0.0008	0.0035
Dissolved Oxygen	mg/L	26	96.9	97.2	123.8	68.3	11.9
Fecal Coliform	cfu/100mL	3	12	20	63	1	32
Lead	mg/L	6	0.0035	0.0025	0.0198	0.0024	0.0071
Nitrogen, Ammonia	mg/L	142	0.017	0.013	0.410	0.001	0.048
Nitrogen, nitrate + nitrite	mg/L	136	0.014	0.015	0.190	0.003	0.045
Nitrogen, Total	mg/L	130	0.47	0.49	1.54	0.00	0.27
Nitrogen, Total Kjeldahl	mg/L	92	0.47	0.49	1.40	0.05	0.27
pH	None	154	7.9	8.0	10.7	1.8	0.6
Phosphorus, orthophosphate	mg/L	140	0.009	0.010	0.086	0.001	0.013
Phosphorus, Total	mg/L	136	0.044	0.044	0.180	0.002	0.023
Salinity	ppth	114	27.3948	29.7500	36.4000	11.3000	6.0325
Specific Conductivity	umho/cm	156	40745	45105	65170	3117	9876
Temperature	deg C	156	26.0	26.8	233.0	13.0	17.2
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	122	8.8	8.0	65.0	1.0	8.3
Turbidity	NTU	156	4.6	4.8	29.5	0.1	3.5

Table 5-6
Monitoring Data Summary
ICWW-S Watershed

SITE LWL-13		Date Range: 04/05/04 - 09/14/20 Samples: 149					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	7	0.0041	0.0025	0.0095	0.0023	0.0033
Cadmium	mg/L	7	0.0004	0.0003	0.0006	0.0003	0.0002
Chlorophyll-a (corrected)	ug/L	126	5.0	4.4	39.5	1.6	5.8
Copper	mg/L	31	0.0017	0.0017	0.0039	0.0009	0.0007
Dissolved Oxygen	mg/L	24	94.9	97.0	134.7	61.2	13.3
Fecal Coliform	CZu/100mL	3	100	100	100	100	0
Lead	mg/L	7	0.0028	0.0025	0.0229	0.0005	0.0078
Nitrogen, Ammonia	mg/L	144	0.013	0.011	0.500	0.002	0.057
Nitrogen, nitrate + nitrite	mg/L	133	0.010	0.005	0.200	0.003	0.044
Nitrogen, Total	mg/L	125	0.38	0.39	1.42	0.00	0.26
Nitrogen, Total Kjeldahl	mg/L	95	0.39	0.35	1.40	0.16	0.26
pH	None	147	8.0	8.0	9.2	7.0	0.2
Phosphorus, orthophosphate	mg/L	139	0.006	0.007	0.067	0.001	0.012
Phosphorus, Total	mg/L	131	0.033	0.031	0.170	0.013	0.021
Salinity	ppth	111	29.0758	31.6000	37.2000	14.4000	5.6095
Specific Conductivity	umho/cm	149	44161	48233	385822	3532	29370
Temperature	deg C	149	25.6	26.7	33.3	11.7	4.3
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	116	6.2	6.0	28.0	1.0	5.3
Turbidity	NTU	139	2.9	2.8	12.0	0.7	1.8
Zinc	mg/L	6	0.0041	0.0042	0.0050	0.0034	0.0009

SITE LWL-18		Date Range: 05/11/00 - 09/14/20 Samples: 155					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	7	0.0033	0.0025	0.0087	0.0023	0.0024
Cadmium	mg/L	15	0.0020	0.0008	0.0050	0.0002	0.0022
Chlorophyll-a (corrected)	ug/L	127	8.2	5.2	58.1	1.6	8.6
Copper	mg/L	37	0.0053	0.0033	0.0500	0.0017	0.0080
Dissolved Oxygen	mg/L	29	88.8	89.0	131.9	0.0	23.9
Fecal Coliform	cfu/100mL	8	40	17	180	4	59
Lead	mg/L	14	0.0056	0.0025	0.0250	0.0008	0.0070
Nitrogen, Ammonia	mg/L	147	0.034	0.020	0.410	0.003	0.045
Nitrogen, nitrate + nitrite	mg/L	139	0.034	0.018	0.210	-0.005	0.041
Nitrogen, Total	mg/L	130	0.50	0.43	1.51	0.00	0.26
Nitrogen, Total Kjeldahl	mg/L	106	0.86	0.44	39.00	0.07	3.75
pH	None	152	7.9	7.9	9.1	6.5	0.3
Phosphorus, orthophosphate	mg/L	145	0.023	0.015	0.160	0.001	0.024
Phosphorus, Total	mg/L	139	0.052	0.044	0.230	0.001	0.033
Salinity	ppth	110	28.5161	30.3000	36.7000	9.3700	6.1643
Specific Conductivity	umho/cm	154	43328	45753	64472	3790	9702
Temperature	deg C	153	26.7	27.0	33.6	16.3	4.0
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	123	10.5	8.0	56.0	1.0	8.4
Turbidity	NTU	144	4.0	3.6	17.0	0.7	2.2
Zinc	mg/L	14	0.0204	0.0100	0.1160	0.0019	0.0297

Table 5-6
Monitoring Data Summary
Hillsboro Watershed

SITE 1		Date Range: 02/22/06 - 05/21/20 Samples: 56					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	0	None	None	None	None	None
Cadmium	mg/L	0	None	None	None	None	None
Chlorophyll-a (corrected)	ug/L	45	5.6	6.2	27.1	1.2	4.4
Copper	mg/L	0	None	None	None	None	None
Dissolved Oxygen	mg/L	14	65.4	68.8	83.9	41.0	13.2
Fecal Coliform	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	0	None	None	None	None	None
Nitrogen, Ammonia	mg/L	9	0.068	0.071	0.143	0.036	0.033
Nitrogen, nitrate + nitrite	mg/L	11	0.042	0.057	0.488	0.001	0.136
Nitrogen, Total	mg/L	42	0.78	0.78	1.75	0.25	0.38
Nitrogen, Total Kjeldahl	mg/L	11	0.82	1.02	1.65	0.28	0.46
pH	None	10	7.5	7.6	7.7	7.4	0.1
Phosphorus, orthophosphate	mg/L	3	0.058	0.059	0.061	0.054	0.004
Phosphorus, Total	mg/L	38	0.099	0.099	0.542	0.045	0.078
Salinity	ppth	55	11.1555	18.0000	33.7000	0.1810	9.2890
Specific Conductivity	umho/cm	53	19196	28600	49200	659	14248
Temperature	deg C	13	26.9	28.4	31.6	20.1	3.7
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	0	None	None	None	None	None
Turbidity	NTU	16	1.9	1.8	4.4	1.0	1.0
Zinc	mg/L	0	None	None	None	None	None

SITE 2		Date Range: 02/22/06 - 05/20/20 Samples: 56					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	0	None	None	None	None	None
Cadmium	mg/L	0	None	None	None	None	None
Chlorophyll-a (corrected)	ug/L	51	6.8	6.8	37.2	0.8	8.4
Copper	mg/L	0	None	None	None	None	None
Dissolved Oxygen	mg/L	14	69.7	79.2	95.8	40.3	19.7
Fecal Coliform	DZu/100mL	0	None	None	None	None	None
Lead	mg/L	0	None	None	None	None	None
Nitrogen, Ammonia	mg/L	9	0.044	0.051	0.102	0.004	0.029
Nitrogen, nitrate + nitrite	mg/L	11	0.053	0.042	0.315	0.004	0.096
Nitrogen, Total	mg/L	43	1.23	1.24	1.68	0.67	0.22
Nitrogen, Total Kjeldahl	mg/L	11	1.09	1.07	1.53	0.59	0.29
pH	None	10	7.6	7.6	7.9	7.3	0.2
Phosphorus, orthophosphate	mg/L	3	0.082	0.105	0.110	0.047	0.035
Phosphorus, Total	mg/L	36	0.086	0.098	0.270	0.025	0.049
Salinity	ppth	27	0.3258	0.3100	3.2500	0.2100	0.5691
Specific Conductivity	umho/cm	53	588	630	806	66	118
Temperature	deg C	13	26.7	27.8	31.7	20.6	3.6
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	0	None	None	None	None	None
Turbidity	NTU	15	1.2	1.4	3.1	0.6	0.6
Zinc	mg/L	0	None	None	None	None	None

Table 5-6
Monitoring Data Summary
Hillsboro Watershed

SITE 3		Date Range: 02/22/06 - 05/20/20 Samples: 57					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	0	None	None	None	None	None
Cadmium	mg/L	0	None	None	None	None	None
Chlorophyll-a (corrected)	ug/L	40	7.1	10.4	33.2	0.8	8.6
Copper	mg/L	0	None	None	None	None	None
Dissolved Oxygen	mg/L	4	61.7	66.3	83.3	39.6	18.1
Fecal Coliform	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	0	None	None	None	None	None
Nitrogen, Ammonia	mg/L	4	0.087	0.083	0.210	0.042	0.075
Nitrogen, nitrate + nitrite	mg/L	4	0.039	0.027	0.156	0.022	0.066
Nitrogen, Total	mg/L	31	1.42	1.42	1.68	1.04	0.15
Nitrogen, Total Kjeldahl	mg/L	3	1.30	1.37	1.53	1.06	0.24
pH	None	4	7.6	7.6	7.8	7.5	0.1
Phosphorus, orthophosphate	mg/L	0	None	None	None	None	None
Phosphorus, Total	mg/L	27	0.098	0.103	0.257	0.039	0.055
Salinity	ppth	15	0.3125	0.3100	0.3800	0.2100	0.0515
Specific Conductivity	umho/cm	44	647	668	834	413	100
Temperature	deg C	4	26.1	27.0	31.6	20.4	4.9
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	0	None	None	None	None	None
Turbidity	NTU	4	0.8	0.9	1.2	0.5	0.3
Zinc	mg/L	0	None	None	None	None	None

SITE S39		Date Range: 01/03/00 - 09/08/20 Samples: 246					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	217	73	120	347	1	62
Arsenic	mg/L	2	2.9626	3.1535	4.2340	2.0730	1.5281
Cadmium	mg/L	2	0.1500	0.1500	0.1500	0.1500	0.0000
Chlorophyll-a (corrected)	ug/L	0	None	None	None	None	None
Copper	mg/L	0	None	None	None	None	None
Dissolved Oxygen	mg/L	34	73.3	77.4	93.8	29.2	13.8
Fecal Coliform	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	2	0.4000	0.4000	0.4000	0.4000	0.0000
Nitrogen, Ammonia	mg/L	222	0.015	0.017	0.167	0.003	0.020
Nitrogen, nitrate + nitrite	mg/L	245	0.010	0.009	0.875	0.002	0.084
Nitrogen, Total	mg/L	35	0.16	0.94	1.62	0.01	0.65
Nitrogen, Total Kjeldahl	mg/L	224	1.14	1.32	2.71	0.03	0.44
pH	None	246	7.7	7.7	8.5	6.8	0.3
Phosphorus, orthophosphate	mg/L	0	None	None	None	None	None
Phosphorus, Total	mg/L	246	0.017	0.017	0.169	0.001	0.019
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	0	None	None	None	None	None
Temperature	deg C	246	25.3	26.4	31.5	13.7	4.0
Total Hardness	mg/L	153	100	141	354	0	65
Total Suspended Solids	mg/L	105	1.9	1.5	11.0	0.5	1.6
Turbidity	NTU	237	1.1	1.1	11.3	0.1	1.5
Zinc	mg/L	2	2.0000	2.0000	2.0000	2.0000	0.0000

Table 5-6
Monitoring Data Summary
L-8 Watershed

SITE Culv10a		Date Range: 01/10/00 - 09/21/20 Samples: 240					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	240	115	114	362	1	49
Arsenic	mg/L	0	None	None	None	None	None
Cadmium	mg/L	0	None	None	None	None	None
Chlorophyll-a (corrected)	ug/L	12	2.3	3.1	10.3	0.5	3.5
Copper	mg/L	5	2.3733	3.0270	4.5710	0.6000	1.4254
Dissolved Oxygen	mg/L	232	8.0	7.4	99.8	0.5	24.6
Fecal Coliform	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	5	0.8600	0.4000	4.7300	0.4000	1.8752
Nitrogen, Ammonia	mg/L	240	0.040	0.034	3.074	0.005	0.312
Nitrogen, nitrate + nitrite	mg/L	240	0.197	0.294	6.557	0.002	0.488
Nitrogen, Total	mg/L	33	2.04	1.78	4.95	1.46	0.82
Nitrogen, Total Kjeldahl	mg/L	209	1.52	1.48	4.78	0.03	0.70
pH	None	239	7.8	7.9	9.2	6.4	0.4
Phosphorus, orthophosphate	mg/L	240	0.048	0.053	0.177	0.002	0.026
Phosphorus, Total	mg/L	240	0.144	0.148	0.669	0.002	0.096
Salinity	ppth	3	0.1598	0.1600	0.1700	0.1500	0.0100
Specific Conductivity	umho/cm	239	504	465	3390	83	355
Temperature	deg C	239	24.1	25.7	31.7	9.0	4.6
Total Hardness	mg/L	80	158	144	774	46	97
Total Suspended Solids	mg/L	240	25.0	25.1	360.0	0.5	54.7
Turbidity	NTU	240	27.6	28.6	284.0	0.1	46.8
Zinc	mg/L	5	3.1486	2.0000	8.2950	2.0000	2.7690

Table 5-6 Monitoring Data Summary
S-2-6-7 Watershed

SITE S-2		Date Range: 01/25/99 - 09/21/20 Samples: 259					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	32	169	124	391	94	101
Arsenic	mg/L	13	0.0027	0.0040	0.0076	0.0008	0.0023
Cadmium	mg/L	12	0.0002	0.0002	0.0005	0.0002	0.0001
Chlorophyll-a (corrected)	ug/L	7	2.6	3.1	52.1	0.5	18.8
Copper	mg/L	13	0.0012	0.0012	0.0030	0.0006	0.0010
Dissolved Oxygen	% Saturation	21	62.9	76.3	96.0	2.2	20.3
Fecal Coliform	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	13	0.0004	0.0004	0.0004	0.0004	0.0000
Nitrogen, Ammonia	mg/L	253	0.105	0.108	2.057	0.003	0.372
Nitrogen, nitrate + nitrite	mg/L	253	0.179	0.231	2.726	0.002	0.502
Nitrogen, Total	mg/L	30	1.91	1.67	5.11	1.14	1.03
Nitrogen, Total Kjeldahl	mg/L	218	1.62	1.60	12.81	0.03	1.65
pH	None	251	7.7	7.7	8.7	6.8	0.3
Phosphorus, orthophosphate	mg/L	253	0.033	0.043	0.232	0.001	0.047
Phosphorus, Total	mg/L	254	0.091	0.103	1.653	0.001	0.153
Salinity	ppth	2	0.7200	0.7500	0.9600	0.5400	0.2970
Specific Conductivity	umho/cm	251	738	635	2079	145	422
Temperature	deg C	251	24.8	25.4	32.2	13.0	4.3
Total Hardness	mg/L	11	208	193	496	127	117
Total Suspended Solids	mg/L	253	6.6	6.0	131.2	0.5	13.2
Turbidity	NTU	253	6.2	6.6	70.4	0.1	10.4
Zinc	mg/L	13	0.0022	0.0020	0.0066	0.0020	0.0013

SITE 39		Date Range: 04/18/17 - 07/24/20 Samples: 19					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	1	151	151	151	151	None
Arsenic	mg/L	17	0.0077	0.0036	2.2350	0.0007	0.7410
Cadmium	mg/L	17	0.0004	0.0002	0.1950	0.0001	0.0647
Chlorophyll-a (corrected)	ug/L	19	4.7	5.0	14.0	0.8	4.0
Copper	mg/L	17	0.0031	0.0013	0.9750	0.0003	0.3233
Dissolved Oxygen	% Saturation	19	48.1	63.3	84.6	2.2	23.8
Fecal Coliform	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	17	0.0054	0.0023	2.1000	0.0007	0.6965
Nitrogen, Ammonia	mg/L	19	0.104	0.097	2.600	0.018	0.599
Nitrogen, nitrate + nitrite	mg/L	16	0.153	0.220	1.400	0.017	0.344
Nitrogen, Total	mg/L	16	1.20	1.49	4.82	0.06	1.22
Nitrogen, Total Kjeldahl	mg/L	19	0.67	1.10	4.80	0.03	1.13
pH	None	17	7.9	7.9	9.2	7.3	0.4
Phosphorus, orthophosphate	mg/L	18	0.045	0.066	0.340	0.002	0.085
Phosphorus, Total	mg/L	19	0.072	0.110	0.450	0.003	0.106
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	19	626	586	1765	374	344
Temperature	deg C	19	25.0	25.9	34.1	17.3	4.9
Total Hardness	mg/L	16	228	219	552	129	115
Total Suspended Solids	mg/L	17	6.8	5.0	43.6	2.5	12.7
Turbidity	NTU	19	8.1	6.3	33.3	2.5	10.2
Zinc	mg/L	17	0.0062	0.0055	0.0202	0.0015	0.0042

Table 5-6 Monitoring Data Summary
S-2-6-7 Watershed

SITE 43		Date Range: 04/18/17 - 07/24/20 Samples: 19					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	17	0.0053	0.0036	2.2350	0.0007	0.5411
Cadmium	mg/L	17	0.0003	0.0002	0.1950	0.0001	0.0472
Chlorophyll-a (corrected)	ug/L	19	7.6	7.7	61.2	1.4	13.2
Copper	mg/L	17	0.0021	0.0013	0.9750	0.0003	0.2361
Dissolved Oxygen	% Saturation	19	58.0	66.2	160.0	19.0	31.4
Fecal Coliform	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	17	0.0054	0.0023	2.1000	0.0007	0.6965
Nitrogen, Ammonia	mg/L	19	0.088	0.105	1.700	0.018	0.385
Nitrogen, nitrate + nitrite	mg/L	19	0.190	0.245	1.400	0.013	0.370
Nitrogen, Total	mg/L	19	1.73	1.47	4.10	1.08	1.00
Nitrogen, Total Kjeldahl	mg/L	19	1.48	1.27	3.60	1.00	0.73
pH	None	17	8.0	7.9	9.1	7.1	0.5
Phosphorus, orthophosphate	mg/L	18	0.044	0.045	0.200	0.003	0.060
Phosphorus, Total	mg/L	19	0.113	0.100	0.250	0.036	0.058
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	19	600	501	1747	395	340
Temperature	ECg C	19	25.0	25.8	32.6	17.6	4.7
Total Hardness	mg/L	16	237	212	535	147	119
Total SuspenECd Solids	mg/L	17	5.0	5.0	17.0	2.5	4.0
Turbidity	NTU	19	8.5	7.1	35.0	2.6	9.2
Zinc	mg/L	17	0.0060	0.0055	0.0200	0.0015	0.0046

Table 5-6
Monitoring Data Summary
WPBWS Watershed

SITE M Canal		Date Range: 03/15/11 - 11/10/20 Samples: 80					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	0	None	None	None	None	None
Cadmium	mg/L	0	None	None	None	None	None
Chlorophyll-a (corrected)	ug/L	58	3.5	4.4	24.3	0.5	4.8
Copper	mg/L	0	None	None	None	None	None
Dissolved Oxygen	mg/L	5	96.6	96.6	118.5	78.0	14.7
Fecal Coliform	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	0	None	None	None	None	None
Nitrogen, Ammonia	mg/L	0	None	None	None	None	None
Nitrogen, nitrate + nitrite	mg/L	65	0.115	0.170	3.600	0.005	0.582
Nitrogen, Total	mg/L	68	1.32	1.25	5.20	0.66	0.84
Nitrogen, Total Kjeldahl	mg/L	64	1.09	1.10	3.00	0.30	0.47
pH	None	69	7.8	7.8	8.6	6.8	0.3
Phosphorus, orthophosphate	mg/L	0	None	None	None	None	None
Phosphorus, Total	mg/L	66	0.092	0.093	0.600	0.018	0.094
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	0	None	None	None	None	None
Temperature	deg C	69	26.7	27.6	33.2	18.4	3.8
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	0	None	None	None	None	None
Turbidity	NTU	69	13.5	12.0	152.0	2.5	26.8
Zinc	mg/L	0	None	None	None	None	None

SITE Control 4		Date Range: 04/15/11 - 11/10/20 Samples: 111					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	0	None	None	None	None	None
Cadmium	mg/L	0	None	None	None	None	None
Chlorophyll-a (corrected)	ug/L	46	2.9	3.0	18.7	0.5	4.5
Copper	mg/L	0	None	None	None	None	None
Dissolved Oxygen	mg/L	110	8.0	5.3	106.1	0.1	29.3
Fecal Coliform	cfu/100mL	1	12	12	12	12	None
Lead	mg/L	0	None	None	None	None	None
Nitrogen, Ammonia	mg/L	0	None	None	None	None	None
Nitrogen, nitrate + nitrite	mg/L	56	0.059	0.038	0.530	0.013	0.166
Nitrogen, Total	mg/L	56	1.11	1.05	1.90	0.67	0.29
Nitrogen, Total Kjeldahl	mg/L	46	0.97	0.98	1.70	0.60	0.19
pH	None	111	7.4	7.4	8.7	6.2	0.4
Phosphorus, orthophosphate	mg/L	32	0.016	0.014	0.082	0.002	0.025
Phosphorus, Total	mg/L	56	0.055	0.053	0.160	0.017	0.035
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	66	380	410	1697	0	281
Temperature	deg C	111	25.8	26.3	34.1	18.3	3.5
Total Hardness	mg/L	67	141	142	252	76	40
Total Suspended Solids	mg/L	0	None	None	None	None	None
Turbidity	NTU	109	5.7	5.3	48.4	0.9	9.0
Zinc	mg/L	0	None	None	None	None	None

Table 5-6
Monitoring Data Summary
WPBWS Watershed

SITE Lake Mangonia		Date Range: 03/15/11 - 10/27/20 Samples: 56					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	0	None	None	None	None	None
Cadmium	mg/L	0	None	None	None	None	None
Chlorophyll-a (corrected)	ug/L	46	5.0	7.7	34.6	0.5	7.3
Copper	mg/L	0	None	None	None	None	None
Dissolved Oxygen	mg/L	56	9.3	7.4	110.0	5.1	26.6
Fecal Coliform	DZu/100mL	0	None	None	None	None	None
Lead	mg/L	0	None	None	None	None	None
Nitrogen, Ammonia	mg/L	0	None	None	None	None	None
Nitrogen, nitrate + nitrite	mg/L	53	0.026	0.017	1.300	0.005	0.204
Nitrogen, Total	mg/L	56	0.86	0.81	2.40	0.60	0.29
Nitrogen, Total Kjeldahl	mg/L	48	0.81	0.80	1.20	0.56	0.15
pH	None	56	8.2	8.2	8.7	7.2	0.3
Phosphorus, orthophosphate	mg/L	16	0.007	0.009	0.039	0.002	0.011
Phosphorus, Total	mg/L	53	0.024	0.025	0.200	0.003	0.025
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	56	476	451	970	274	157
Temperature	deg C	56	26.0	26.3	31.8	19.3	3.4
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	0	None	None	None	None	None
Turbidity	NTU	56	2.6	2.6	8.9	0.6	1.7
Zinc	mg/L	0	None	None	None	None	None

SITE Clear Lake		Date Range: 03/15/11 - 10/27/20 Samples: 56					
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	0	None	None	None	None	None
Cadmium	mg/L	0	None	None	None	None	None
Chlorophyll-a (corrected)	ug/L	11	1.9	1.4	8.8	0.5	3.4
Copper	mg/L	0	None	None	None	None	None
Dissolved Oxygen	mg/L	21	7.9	7.8	10.0	6.6	0.8
Fecal Coliform	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	0	None	None	None	None	None
Nitrogen, Ammonia	mg/L	0	None	None	None	None	None
Nitrogen, nitrate + nitrite	mg/L	18	0.053	0.061	1.800	0.013	0.439
Nitrogen, Total	mg/L	21	0.80	0.74	2.30	0.21	0.47
Nitrogen, Total Kjeldahl	mg/L	18	0.66	0.66	1.50	0.18	0.29
pH	None	21	8.3	8.3	8.7	7.9	0.2
Phosphorus, orthophosphate	mg/L	0	None	None	None	None	None
Phosphorus, Total	mg/L	21	0.012	0.012	0.025	0.001	0.009
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	21	495	496	850	304	152
Temperature	deg C	21	25.9	27.3	30.8	21.0	3.4
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	0	None	None	None	None	None
Turbidity	NTU	21	1.3	1.3	2.5	0.6	0.5
Zinc	mg/L	0	None	None	None	None	None

TABLE 5-7

Summary of Geometric Mean Values for TN, TP, Chl-a

January 1999 - September 2020

Watershed	Site	Total Nitrogen mg/L	Total Phosphorus mg/L	Chlorophyll-a ug/L
C-15	31E	1.47	0.25	19.63
	31C	1.19	0.12	15.13
	31B	0.98	0.10	12.62
C-16	22	1.01	0.05	12.62
	24	0.75	0.04	12.23
	27B	1.42	0.16	13.83
	27A	1.05	0.10	12.66
	28	0.95	0.07	8.90
C-17	12A	1.31	0.05	12.43
	C17S44	0.86	0.04	9.16
C-18	16	0.96	0.03	4.06
	15	0.87	0.02	2.14
	92	0.82	0.02	3.66
	81	0.77	0.02	4.92
C-51	38B	1.52	0.10	6.51
	37B	0.96	0.06	4.23
	C51S155	1.11	0.06	1.34
Lox	69	0.98	0.04	2.99
	51	0.35	0.02	4.04
	62	0.77	0.05	5.30
	72	0.61	0.04	8.40
ICWW-N	30	0.29	0.03	4.00
LWL-N	LWL-1	0.35	0.03	4.78
	11	0.39	0.04	3.08
	13	0.46	0.04	3.85
	LWL-4	0.28	0.02	2.56
LWL-C	LWL-8	0.51	0.05	5.69
	18C	0.74	0.07	5.33
	18D	0.55	0.06	5.20
	LWL-11	0.47	0.04	5.72
ICWW-S	LWL-13	0.38	0.03	4.97
	LWL-18	0.41	0.04	5.84
Hillsboro	1	0.78	0.10	5.63
	2	1.23	0.09	6.76
	3	1.41	0.09	7.02
	S39	0.15	0.02	
L-8	Culv10a	1.97	0.14	1.53
S-2-6-7	S-2		0.09	2.65
	39	1.20	0.07	4.74
	43	1.73	0.11	7.57
WPBWS	M Canal	1.32	0.09	3.66
	Control 4	1.11	0.05	2.85
	Lake Mangonia	0.86	0.02	4.95
	Clear Lake	0.81	0.02	3.19

- C-15, a Class III Freshwater has a minimum level of chlorophyll-a (corrected) AGM of 20 µg/L
- Northern Lake Worth Lagoon has a minimum level of chlorophyll-a (corrected) AGM of 2.9 µg/L
- Northern Lake Worth Lagoon has a minimum level of Total Nitrogen AGM of .54 mg/L
- Northern Lake Worth Lagoon has a minimum level of Total Phosphorus AGM of .044 mg/L
- Central Lake Worth Lagoon has a minimum level of Total Nitrogen AGM of .66 mg/L
- Central Lake Worth Lagoon has a minimum level of Total Phosphorus AGM of .049 mg/L

Table 5-8

Total Nitrogen (Annual Geometric Mean)

(Page 1 of 4)

	C-15				C-16						C-17		
	31E	31C	31B	Basin	22	24	27B	27A	28	Basin	12A	C17S44	Basin
2011	○	○	○	○	●	●	○	○	○	○	○	○	○
2012	○	○	○	○	●	●	○	○	○	○	○	○	○
2013	○	○	○	○	●	●	○	○	○	○	○	○	○
2014	○	○	○	○	●	●	○	○	○	○	○	○	○
2015	○	○	○	○	●	●	○	○	○	○	○	○	○
2016	○	○	○	○	●	●	○	○	○	○	○	○	○
2017	○	○	○	○	●	●	○	○	○	○	○	○	○
2018	○	○	○	○	●	●	○	○	○	○	○	○	○
2019	○	○	○	○	●	○	○	○	○	○	○	○	○
2020	○	○	○	○	●	○	○	○	○	○	○	○	○
FDEP Criteria	No Criteria	No Criteria	No Criteria	No Criteria	Varies	Varies	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria

● Meeting criteria
● Not meeting criteria
○ No numeric criteria

Values Used (mg/l)

2011	1.56	1.01	1.09	1.20	1.10	1.32	1.44	1.09	0.88	1.15	1.31	0.91	1.09
2012	1.30	1.08	0.97	1.11	1.01	1.00	1.44	1.16	1.01	1.11	1.16	0.91	1.02
2013	1.20	1.00	0.97	1.05	0.80	0.76	1.18	0.92	1.01	0.92	0.92	0.89	0.91
2014	1.30	0.84	0.76	0.94	0.82	0.72	1.14	0.86	0.74	0.85	0.93	0.39	0.60
2015	1.21	0.76	0.88	0.93	0.91	0.83	1.31	0.80	1.46	1.03	1.07	0.77	0.91
2016	1.61	1.09	1.02	1.21	0.96	0.85	1.33	1.22	0.82	1.02	0.98	0.88	0.93
2017	1.19	1.09	1.07	1.12	0.84	1.05	1.43	1.22	0.57	0.97	1.03	0.69	0.84
2018	1.19	1.00	0.92	1.03	1.13	0.90	1.29	0.39	0.80	0.84	0.39	0.86	0.58
2019	1.33	0.99	0.56	0.90	0.92	0.09	1.34	0.51	0.31	0.44	0.98	0.78	0.88
2020	1.07	0.96	0.89	0.97	0.93	0.15	0.84	0.62	0.14	0.40	0.68	0.78	0.73

Varies for sites 22 and 24 TN ≤ 1.27 AGM when Chlorophyll-a >20 mg/l
TN ≤ 2.23 AGM when Chlorophyll-a ≤20 mg/l

Table 5-8

Total Nitrogen (Annual Geometric Mean)

	C-18					C-51				Lox	Lox			
	16	15	92	81	Basin	38B	37B	C51S155	Basin	69	51	62	72	Basin
2011	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2012	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2013	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2014	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2015	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2016	●		●	●	●	●	●	●	●	●	●	●	●	●
2017	●		●	●	●	●	●	●	●	●	●	●	●	●
2018	●		●	●	●	●	●	●	●	●	●	●	●	●
2019	●		●	●	●	●	●	●	●	●	●	●	●	●
2020	●		●	●	●	●	●	●	●	●	●	●	●	●
FDEP Criteria	<=1.54	<=1.54	<=1.54	<=1.54	<=1.54	No Criteria	No Criteria	No Criteria	No Criteria	<=1.54	<=0.8	<=1.26	<=1.26	No Criteria

● Meeting criteria
● Not meeting criteria
● No numeric criteria

Values Used (mg/l)

2011	1.27	1.27	0.93	0.86	1.07	2.13	1.26	0.88	1.33	0.67	0.87	0.76	0.38	0.63
2012	1.08	0.93	0.95	0.90	0.96	1.40	0.76	0.95	1.00	1.30	0.22	0.57	0.51	0.40
2013	0.87	0.64	0.88	0.82	0.79	1.15	1.26	1.96	1.42	0.81	0.15	0.62	0.41	0.33
2014	0.66	0.66	0.23	0.25	0.39	1.39	1.16	0.73	1.06	0.91	0.35	0.79	0.57	0.54
2015	0.77	0.76	0.80	0.74	0.77	1.19	1.09	0.97	1.08	0.85	0.20	0.58	0.52	0.39
2016	0.94		0.97	0.91	0.94	1.37	1.02	1.14	1.17	0.91	0.25	0.72	0.70	0.50
2017	0.88		0.87	0.97	0.91	1.14	0.80	0.79	0.90	1.01	0.22	0.57	0.69	0.44
2018	1.08	0.27	1.13	0.83	0.72	2.22	1.65	1.34	1.70	0.95	0.52	0.71	0.79	0.66
2019	0.96	0.74	0.84	0.87	0.85	0.48	0.14	0.96	0.40	0.87	0.27	0.69	0.58	
2020	0.62	0.70	0.81	0.87	0.74	1.75	0.17	0.88	0.64	0.84	0.43	0.69	0.63	

Table 5-8

Total Nitrogen (Annual Geometric Mean)

(Page 3 of 4)

	ICWW-N	LWL-N					LWL-C					ICWW-S		
	30	LWL-1	11	13	LWL-4	Basin	LWL-8	18C	18D	LWL-11	Basin	LWL-13	LWL-18	Basin
2011	●	●	●	●		●	●	●	●	●	●	●	●	●
2012	●	●	●	●		●	●	●	●	●	●	●	●	●
2013	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2014	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2015	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2016	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2017	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2018	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2019	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2020	●	●	●	●	●	●	●	●	●	●	●	●	●	●
FDEP Criteria	<=0.66	<=0.54	<=0.54	<=0.54	<=0.54	<=0.54	<=0.66	<=0.66	<=0.66	<=0.66	<=0.66	<=0.59	<=0.59	<=0.59

● Meeting criteria
● Not meeting criteria
● No numeric criteria

Values Used (mg/l)

2011	0.34	0.22	0.45	0.50		0.36	0.14	0.83	0.52	0.26	0.35	0.22	0.24	0.2303
2012	0.21	0.33	0.72	0.81		0.58	0.42	0.94	0.84	0.42	0.61	0.35	0.42	0.3854
2013	0.15	0.28	0.53	0.59	0.23	0.38	0.54	0.93	0.90	0.48	0.68	0.41	0.44	0.4217
2014	0.24	0.19	0.25	0.33	0.14	0.22	0.32	0.65	0.52	0.16	0.37	0.14	0.15	0.1442
2015	0.20	0.32	0.22	0.25	0.21	0.25	0.39	0.62	0.30	0.39	0.41	0.30	0.46	0.3718
2016	0.25	0.33	0.23	0.37	0.31	0.31	0.55	0.45	0.30	0.53	0.45	0.32	0.46	0.3882
2017	0.25	0.34	0.13	0.14	0.25	0.20	0.67	0.21	0.15	0.66	0.35	0.99	0.56	0.7437
2018	0.37	0.41	0.20	0.40	0.31	0.32	0.74		0.70	0.47	0.62	0.44	0.27	0.34
2019	0.28	0.33	0.29	0.31	0.24	0.29	0.42	0.43	0.42	0.43	0.42	0.34	0.36	0.35
2020	0.36	0.31	0.18	0.22	0.25	0.23	0.35	0.48	0.37	0.38	0.39	0.33	0.34	0.34

Table 5-8

Total Nitrogen (Annual Geometric Mean)

Page 4 of 4)

	Hillsboro					L-8	S-2-6-7				WPBWS				
	1	2	3	S39	Basin	Culv10A	S-2	39	43	Basin	M Canal	Control 4	Lake Mangonia	Clear Lake	Basin
2011	●	●	●		●						●		●	●	●
2012	●	●	●		●						●		●	●	●
2013	●	●	●		●						●		●	●	●
2014											●	●	●	●	●
2015											●	●	●	●	●
2016	●	●	●		●						●	●	●	●	●
2017	●	●	●		●			●	●	●	●	●	●	●	●
2018	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2019	●	●	●		●	●	●	●	●	●	●	●	●	●	●
2020	●	●	●		●		●	●	●	●	●	●	●	●	●
FDEP Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	1.05 to 1.91	1.05 to 1.91	1.05 to 1.91

● No numeric criteria

Values Used (mg/l)

2011	0.54	1.11	1.37		0.94						1.26		0.92	0.86	1.00
2012	0.75	1.36	1.42		1.13						1.14		0.88	0.75	0.91
2013	0.67	1.30	1.38		1.06						1.30		0.79	0.67	0.88
2014											1.40	1.12	0.89	1.00	1.09
2015											1.25	0.94	0.95	0.91	1.00
2016	1.19	1.25	1.42		1.28						1.34	1.11	0.84	0.89	1.03
2017	0.59	1.38	1.38		1.04			4.23	5.22	4.70	1.61	1.19	0.95	0.82	1.11
2018	1.41	1.47	1.52	0.03	0.56	2.23	1.77	1.62	1.57	1.65	1.24	1.08	0.85	0.80	0.98
2019	0.60	1.13	1.45		0.99	2.21	1.79	2.00	1.93	1.90	1.38	1.12	0.80	0.75	0.98
2020	0.68	1.02	1.22	0.33	0.73	1.78	2.15	0.49	1.79	1.23	1.20	1.10	0.74	0.71	0.91

Varies for Lake Magnonia and Clear Lake TN ≤ 1.27 AGM when Chlorophyll-a >20 mg/l

TN ≤ 2.23 AGM when Chlorophyll-a ≤20 mg/l

Table 5-9

Total Phosphorus (Annual Geometric Mean)

	C-15				C-16						C-17		
	31E	31C	31B	Basin	22	24	27B	27A	28	Basin	12A	C17S44	Basin
2011	○	○	○	○	○	●	○	○	○	○	○	○	○
2012	○	○	○	○	○	○	○	○	○	○	○	○	○
2013	○	○	○	○	●	○	○	○	○	○	○	○	○
2014	○	○	○	○	●	○	○	○	○	○	○	○	○
2015	○	○	○	○	○	○	○	○	○	○	○	○	○
2016	○	○	○	○	○	●	○	○	○	○	○	○	○
2017	○	○	○	○	○	○	○	○	○	○	○	○	○
2018	○	○	○	○	○	○	○	○	○	○	○	○	○
2019	○	○	○	○	○	○	○	○	○	○	○	○	○
2020	○	○	○	○	○	○	○	○	○	○	○	○	○
FDEP Criteria	No Criteria	No Criteria	No Criteria	No Criteria	Varies	Varies	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria	No Criteria

● Meeting criteria
● Not meeting criteria
○ No numeric criteria

Values Used (mg/l)

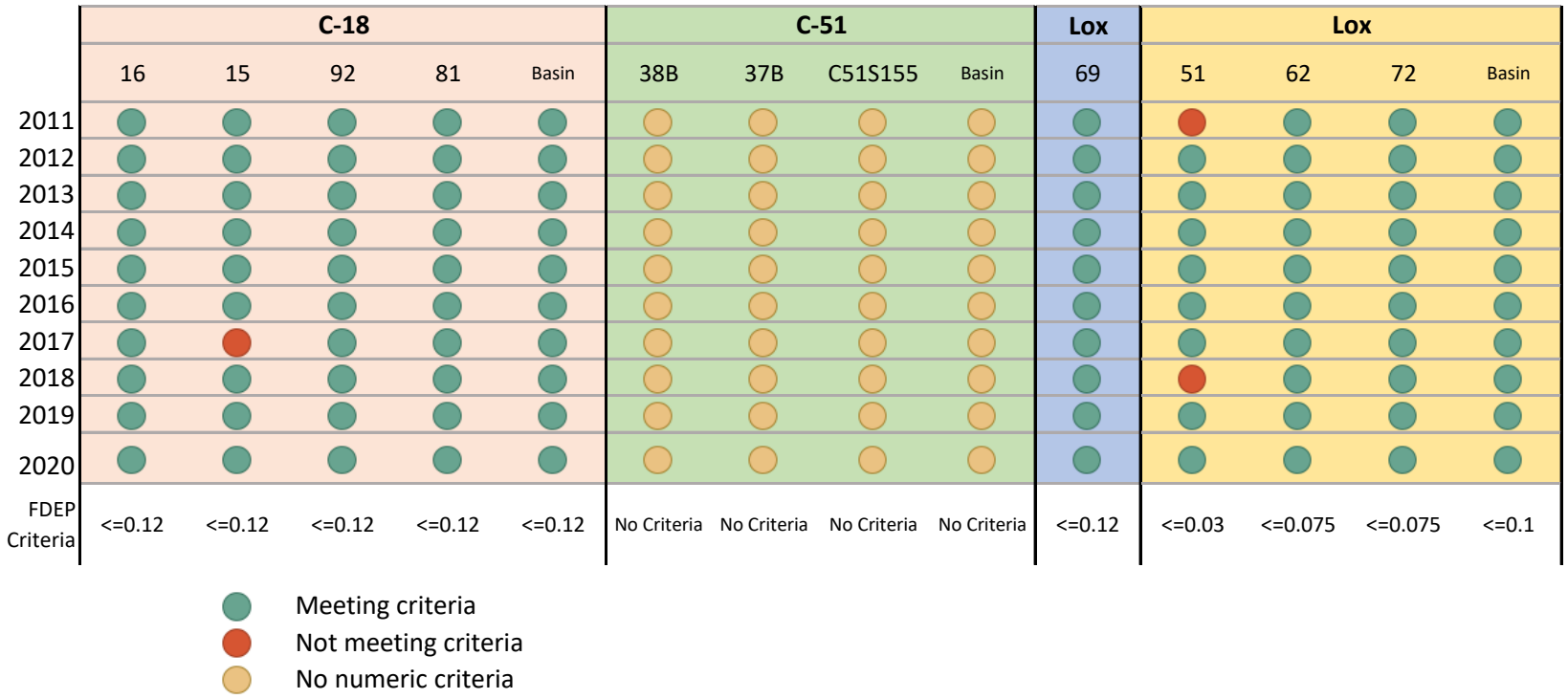
2011	0.19	0.08	0.09	0.11	0.03	0.09	0.13	0.08	0.04	0.07	0.06	0.05	0.05
2012	0.24	0.12	0.09	0.14	0.05	0.05	0.14	0.12	0.06	0.08	0.06	0.05	0.05
2013	0.25	0.15	0.09	0.15	0.06	0.07	0.07	0.10	0.06	0.07	0.06	0.05	0.05
2014	0.28	0.12	0.10	0.15	0.12	0.06	0.18	0.11	0.07	0.10	0.05	0.04	0.05
2015	0.16	0.07	0.05	0.08	0.05	0.07	0.16	0.05	0.05	0.07	0.04	0.04	0.04
2016	0.30	0.16	0.13	0.19	0.06	0.05	0.33	0.14	0.14	0.11	0.06	0.04	0.05
2017	0.18	0.12	0.02	0.08	0.01	0.02	0.11	0.07	0.03	0.03	0.05	0.03	0.04
2018	0.16	0.12		0.13	0.07	0.06	0.14	0.03	0.08	0.07	0.06	0.05	0.06
2019	0.32	0.13	0.07	0.15	0.07	0.00	0.17	0.03	0.02		0.07	0.05	
2020	0.25	0.12	0.10	0.14	0.06	0.01	0.11	0.07	0.01	0.03	0.05	0.05	0.05

Varies for sites 22 and 24 TP ≤ 0.050 AGM when Chlorophyll-a >20 mg/l
TP ≤ 0.16 AGM when Chlorophyll-a ≤20 mg/l

Table 5-9

Total Phosphorus (Annual Geometric Mean)

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Values Used (mg/l)

2011	0.03	0.02	0.02	0.02	0.02	0.07	0.06	0.04	0.05	0.06	0.06	0.02	0.03	0.03
2012	0.03	0.01	0.02	0.02	0.02	0.13	0.04	0.03	0.06	0.04	0.03	0.04	0.04	0.03
2013	0.03	0.00	0.02	0.02	0.02	0.09	0.08	0.06	0.08	0.03	0.03	0.06	0.04	0.04
2014	0.01	0.01	0.04	0.02	0.02	0.11	0.14	0.06	0.10	0.04	0.03	0.06	0.04	0.04
2015	0.02	0.01	0.02	0.02	0.02	0.11	0.08	0.08	0.09	0.03	0.02	0.05	0.04	0.03
2016	0.02	0.01	0.03	0.03	0.02	0.08	0.09	0.06	0.08	0.03	0.02	0.05	0.05	0.04
2017	0.03	0.15	0.04	0.02	0.04	0.18	0.05	0.06	0.08	0.04	0.02	0.04	0.03	0.03
2018	0.02	0.01	0.06	0.03	0.02	0.16	0.11	0.09	0.11	0.06	0.03		0.04	0.03
2019	0.03	0.01	0.03	0.02		0.04	0.01	0.07		0.03	0.02	0.05	0.04	0.03
2020	0.03	0.01	0.03	0.02	0.02	0.08	0.01	0.05	0.04	0.03	0.02	0.04	0.04	

Table 5-9

Total Phosphorus (Annual Geometric Mean)

(Page 3 of 4)

	ICWW-N	LWL-N					LWL-C					ICWW-S		
	30	LWL-1	11	13	LWL-4	Basin	LWL-8	18C	18D	LWL-11	Basin	LWL-13	LWL-18	Basin
2011	●	●	●	●		●	●	●	●	●	●	●	●	●
2012	●	●	●	●		●	●	●	●	●	●	●	●	●
2013	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2014	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2015	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2016	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2017	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2018	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2019	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2020	●	●	●	●	●	●	●	●	●	●	●	●	●	●
FDEP Criteria	<=0.035	<=0.044	<=0.044	<=0.044	<=0.044	<=0.044	<=0.049	<=0.049	<=0.049	<=0.049	<=0.049	<=0.05	<=0.05	<=0.05

● Meeting criteria
● Not meeting criteria
● No numeric criteria

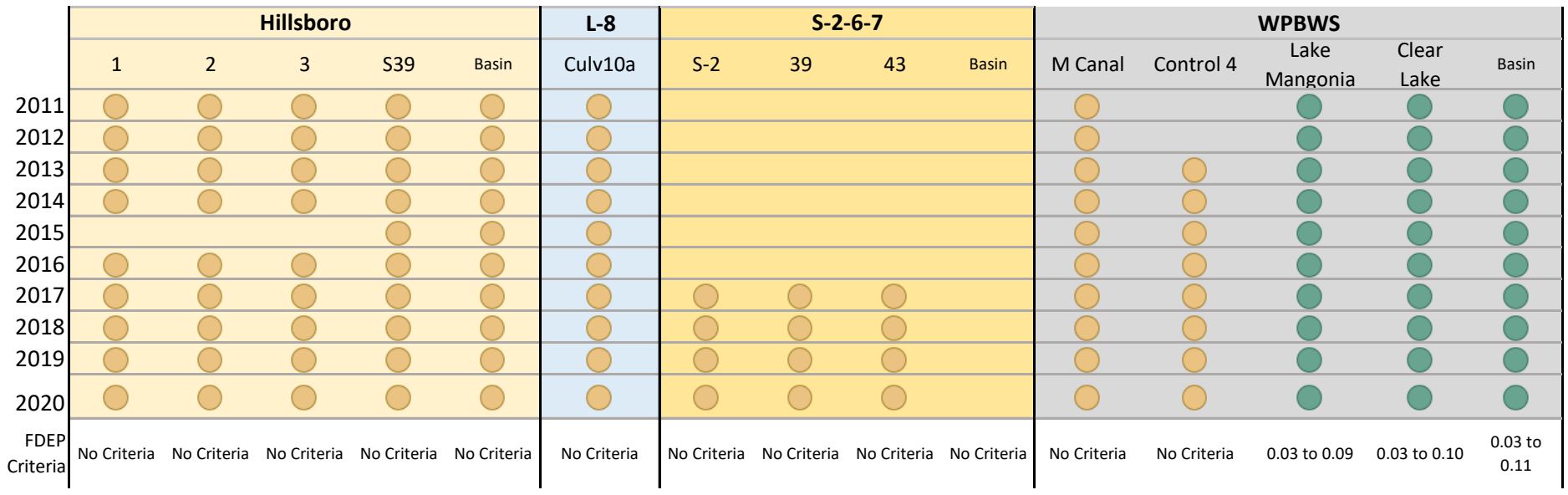
Values Used (mg/l)

2011	0.05	0.02	0.05	0.06		0.04	0.01	0.07	0.07	0.03	0.04	0.03	0.03	0.0269
2012	0.03	0.04	0.03	0.04		0.04	0.04	0.01	0.04	0.04	0.03	0.03	0.04	0.037
2013	0.02	0.03	0.07	0.06	0.02	0.04	0.05	0.08	0.08	0.06	0.07	0.04	0.05	0.0436
2014	0.02	0.03	0.06	0.04	0.02	0.03	0.05	0.07	0.06	0.05	0.06	0.03	0.04	0.0368
2015	0.02	0.03	0.06	0.06	0.02	0.04	0.04	0.08	0.07	0.04	0.05	0.02	0.05	0.034
2016	0.02	0.03	0.04	0.04	0.02	0.03	0.05	0.08	0.06	0.04	0.06	0.03	0.05	0.0369
2017	0.02	0.03	0.01	0.01	0.02	0.01	0.06	0.05	0.02	0.06	0.04	0.07	0.07	0.0725
2018	0.03	0.04	0.03	0.04	0.02	0.03	0.07	0.07	0.06	0.03	0.06	0.03	0.03	0.03
2019	0.02	0.03	0.05	0.05	0.02	0.03	0.04	0.09	0.06	0.04	0.06	0.03	0.05	0.04
2020	0.03	0.04	0.04	0.03	0.02	0.03	0.04	0.08	0.06	0.03	0.05	0.03	0.04	0.03

Table 5-9

Total Phosphorus (Annual Geometric Mean)

(Page 4 of 4)



No numeric criteria

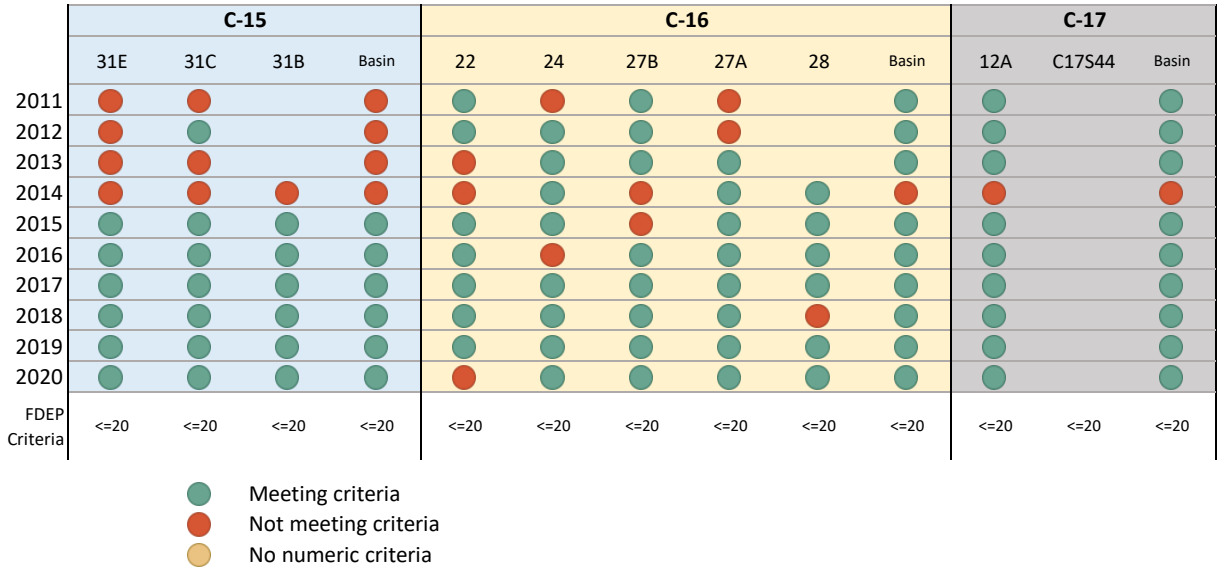
Values Used (mg/l)

2011	0.08	0.06	0.07	0.01	0.04	0.12					0.04		0.01	0.01	0.02
2012	0.10	0.09	0.14	0.02	0.07	0.10					0.05		0.03	0.02	0.03
2013	0.08	0.08	0.07	0.02	0.05	0.14					0.10	0.07	0.02	0.01	0.03
2014	0.11	0.10	0.07	0.01	0.06	0.16					0.09	0.08	0.02	0.01	0.03
2015				0.01	0.01	0.15					0.12	0.06	0.04	0.02	0.05
2016	0.18	0.10	0.13	0.01	0.08	0.15					0.11	0.04	0.03	0.02	0.04
2017	0.11	0.05	0.06	0.01	0.04	0.19	0.11	0.12	0.09	0.11	0.12	0.05	0.03	0.02	0.04
2018	0.07	0.06	0.06	0.02	0.04	0.17	0.13	0.13	0.13	0.13	0.10	0.06	0.02	0.01	0.03
2019	0.13	0.10	0.10	0.01	0.07	0.16	0.10	0.11	0.10	0.10	0.11	0.07	0.02	0.02	0.04
2020				0.01	0.01	0.17	0.13	0.02	0.13	0.07	0.08	0.05	0.03	0.02	0.04

Varies for sites Lake and Clear Lake TP ≤ 0.03 AGM when Chlorophyll-a >20 mg/l
TP ≤ 0.09 AGM when Chlorophyll-a ≤20 mg/l

Table 5-10

Chlorophyll-A (Annual Geometric Mean)



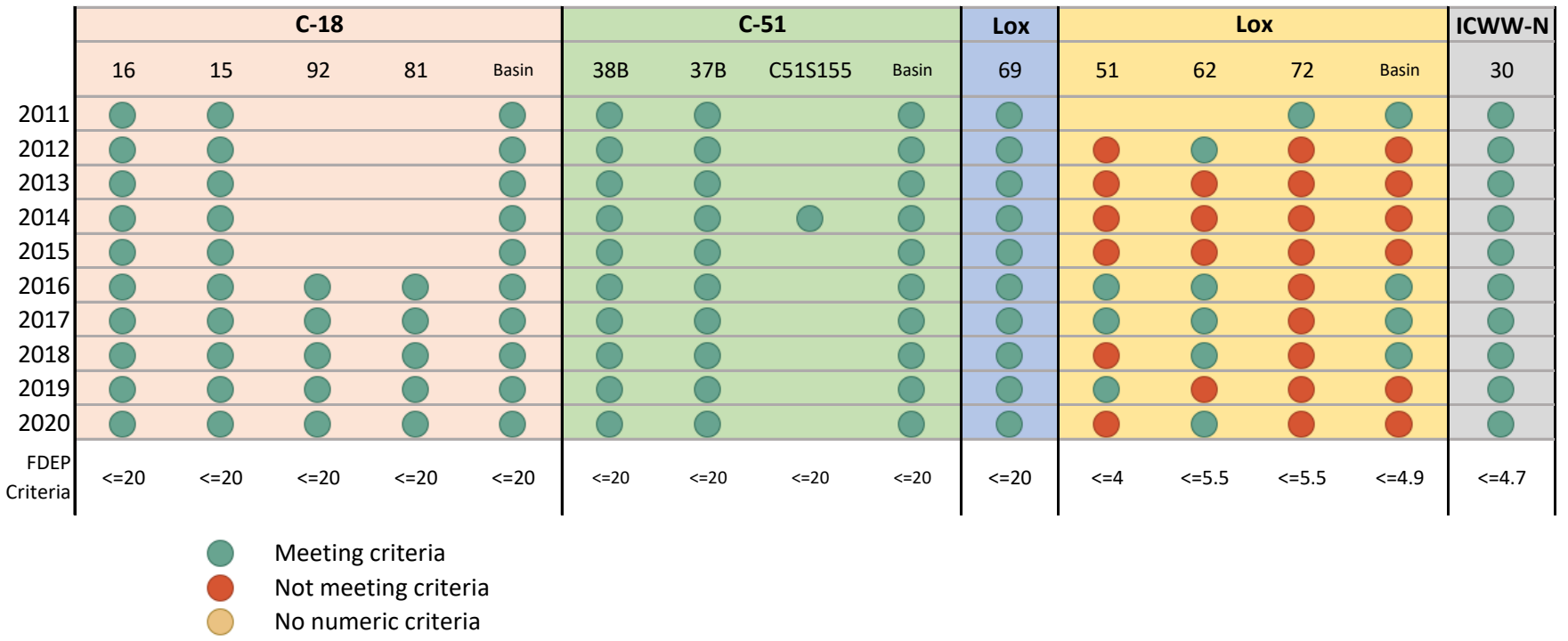
Values Used (ug/l)

2011	28.22	23.48		25.74	17.83	20.25	15.35	20.92		18.45	12.41		12.41
2012	24.95	16.18		20.09	17.67	18.51	18.54	20.44		18.76	17.74		17.74
2013	43.87	24.19		32.57	28.64	15.83	7.38	17.32		15.51	12.50		12.50
2014	39.23	28.66	27.53	31.39	22.70	17.75	35.79	18.36	15.53	21.03	20.44		20.44
2015	16.28	9.10	18.72	14.05	9.86	13.62	26.83	8.03	8.27	11.91	12.94		12.94
2016	9.72	8.42	17.18	11.20	12.73	20.70	7.45	8.11	5.56	9.76	11.78		11.78
2017	16.15	15.39	19.16	16.82	18.04	6.14	9.60	8.04	4.57	8.29	8.10		8.10
2018	14.58	9.63	16.84	13.32	9.52	4.58	3.39	10.83	20.68	8.02	5.98		5.98
2019	8.11	13.38	8.39	9.69	11.97	5.77	11.96	3.86	5.83	7.14	7.61		7.61
2020	17.54	12.22	11.39	13.47	21.37	19.80	18.01	10.93	13.99	16.34	14.67		14.67

Table 5-10

Chlorophyll-A (Annual Geometric Mean)

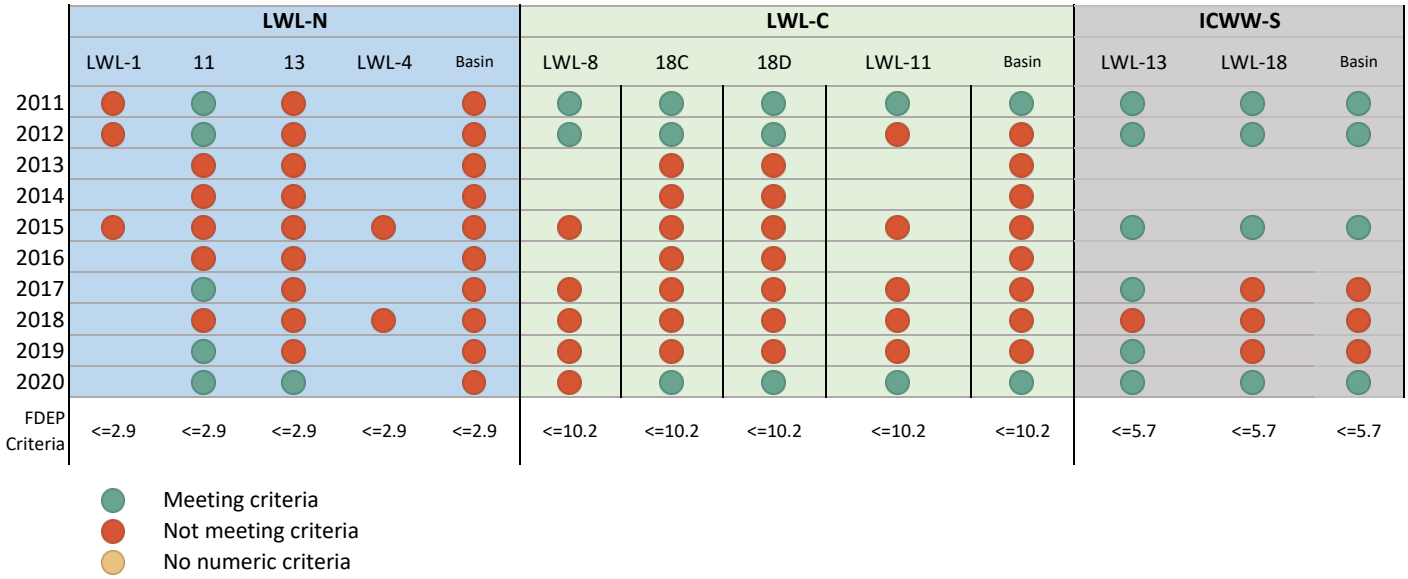
(Page 2 of 4)



Values Used (ug/l)

2011	6.44	1.52			3.13	19.35	4.84		9.68	2.94			3.48	3.48	
2012	6.17	1.52			3.06	8.64	4.21		6.03	2.01	4.17	4.64	9.86	5.04	
2013	5.65	2.09			3.44	5.16	4.36		4.75	2.36	4.28	6.10	8.66	5.30	
2014	2.14	2.14			2.14	4.07	2.79	0.03	0.66	3.00	4.49	5.50	11.23	5.82	
2015	2.54	1.26			1.79	5.64	2.06		3.41	1.92	4.07	5.94	10.83	5.70	
2016	5.63	2.34	6.51	8.05	5.13	10.17	3.93		6.32	2.47	2.95	4.76	7.07	4.33	
2017	4.80	2.02	3.44	6.71	3.87	3.16	3.98		3.55	2.09	2.29	5.33	7.71	4.29	
2018	2.57	2.58	3.09	5.52	3.26	4.22	4.99		4.59	3.30	5.96	4.83	4.90	4.63	
2019	2.71	2.02	5.04	7.80	3.83	3.90	2.35		3.03	3.70	3.72	5.91	9.45	5.92	3.75
2020	6.83	1.12	3.35	6.76	3.63	19.55	8.26	0.72	4.88	3.75	5.17	3.79	8.30	5.46	4.51

Table 5-10
Chlorophyll-A (Annual Geometric Mean)
(Page 3 of 4)



Values Used (ug/l)

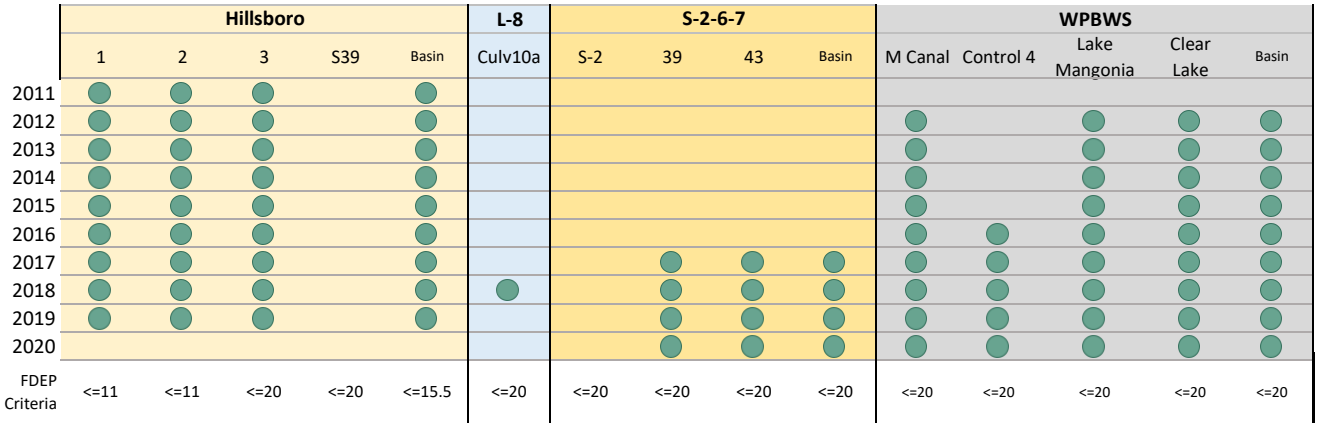
2011	3.48	2.89	4.05		3.44	0/2	1/11	1/11	0/2	2/28	3	3	3
2012	4.73	2.85	4.12		3.81	1/11	1/12	1/12	1/10	5/47	4.3	5.5	4.9
2013		3.90	4.55		4.22		4/12	5/12		9/12			
2014		5.23	7.51		6.26		6/9	8/9		14/18			
2015	5.10	3.28	3.41	1.81	3.19	1/10	2/7	1/7	2/10	6/44	4.08	5.11	4.6
2016		7.06	3.82		5.19		1/5	1/5		2/5			
2017		2.81	3.92		3.32	1/7	1/6	1/6	2/7	5/26	5.4	7.9	6.7
2018	6.92	3.12	4.26	5.79	4.81	9/10	5/6	5/6	9/10	28/32	11.11	5.73	7.98
2019	4.37	1.73	2.94	1.81	2.52	2/9	1/9	1/9	1/9	5/36	4.60	7.72	5.96
2020	2.40	2.17	2.79	2.47	2.45	3/10	0/10	0/10	1/11	4/42	4.59	4.94	4.76

Note: Chlorophyll-a criteria for LWL-C shall not be exceeded in more than 10 percent of the measurements

Table 5-10

Chlorophyll-A (Annual Geometric Mean)

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2011	4.14	4.54	8.76		5.48										
2012	3.71	10.50	8.86		7.01						1.48		3.92	1.22	1.92
2013	7.00	5.27	4.58		5.52						3.97		1.48	0.82	1.69
2014	6.85	4.62	7.26		6.13						3.31		10.84	3.98	5.23
2015	4.33	4.61	3.61		4.16						5.33		7.78	3.69	5.35
2016	3.55	2.76	3.10		3.12						4.54	3.39	9.04	8.40	5.85
2017	3.13	2.22	0.85		1.81			4.23	5.22	4.70	4.49	5.45	6.61	4.63	5.23
2018	6.14	4.34	5.17		5.16	2.23		7.17	8.20	7.67	2.13	1.90	3.37	3.17	2.56
2019	7.56	9.13	12.05		9.41			4.03	8.16	5.73	4.70	2.80	3.69	3.05	3.49
2020								4.10	7.97	5.72	3.73	2.36	2.38	1.89	2.51

Table 5-11
Water Quality Trends
C-15 Watershed

Total Nitrogen

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
31C	1999 - 2020	-0.360266	-0.000103	< 0.0001	Significant Decreasing Trend
31E	1999 - 2020	-0.347464	-0.000106	< 0.0001	Significant Decreasing Trend
31B	2000 - 2020	-0.234134	-0.000041	< 0.0001	Significant Decreasing Trend

Total Phosphorus

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
31C	1999 - 2020	-0.095470	-0.000004	0.161344	Decreasing Trend
31E	1999 - 2020	-0.043254	-0.000005	0.529378	Decreasing Trend
31B	2000 - 2020	-0.172056	-0.000007	0.004242	Significant Decreasing Trend

Total Chlorophyll-a (corrected)

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
31C	1999 - 2020	-0.153779	-0.001587	0.026919	Significant Decreasing Trend
31E	1999 - 2020	-0.070992	-0.000808	0.302378	Decreasing Trend
31B	2000 - 2020	-0.049311	-0.000326	0.576217	Decreasing Trend

[1] Even if the p-value is determined to be statistically significant, the result may not be ecologically significant. For example, if a trend is statistically significantly declining (negative trend) and the concentration is low in the water, then it may not be realistic to assume that an improvement in water quality by reductions in TN or TP may positively impact the ecological system in a measurable way. A negative slope is an indication of a decreasing trend, while a positive slope is an indication of an increasing trend.

[2] Results contain serial correlation (as per autocorrelation analysis results) used the p-value adjusted for serial correlation.

[3] If the p-value is less than 0.05, then a decreasing trend may suggest an improvement in water quality, and an increasing trend may suggest a decline in water quality.

Table 5-11 Water Quality Trends
C-16 Watershed

Total Nitrogen

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
22	2004 - 2020	-0.230705	-0.000054	0.002868	Significant Decreasing Trend
24	1999 - 2020	-0.359409	-0.000091	< 0.0001	Significant Decreasing Trend
27B	1999 - 2020	-0.206242	-0.000059	0.006233	Significant Decreasing Trend
27A	1999 - 2020	-0.404348	-0.000109	< 0.0001	Significant Decreasing Trend
28	1999 - 2020	-0.227021	-0.000055	< 0.0001	Significant Decreasing Trend

Total Phosphorus

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
22	2004 - 2020	0.000576	0.000000	0.996917	Increasing Trend
24	1999 - 2020	-0.209974	-0.000006	0.002776	Significant Decreasing Trend
27B	1999 - 2020	-0.039555	-0.000003	0.588715	Decreasing Trend
27A	1999 - 2020	-0.280684	-0.000016	< 0.0001	Significant Decreasing Trend
28	1999 - 2020	-0.166445	-0.000005	0.005374	Significant Decreasing Trend

Total Chlorophyll-a (corrected)

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
22	2004 - 2020	0.216566	0.002062	0.003843	Significant Increasing Trend
24	1999 - 2020	0.079489	0.000650	0.271925	Increasing Trend
27B	1999 - 2020	0.019330	0.000147	0.805730	Increasing Trend
27A	1999 - 2020	-0.179249	-0.001453	0.013682	Significant Decreasing Trend
28	1999 - 2020	0.197098	0.001028	0.034605	Significant Increasing Trend

[1] Even if the p-value is determined to be statistically significant, the result may not be ecologically significant. For example, if a trend is statistically significantly declining (negative trend) and the concentration is low in the water, then it may not be realistic to assume that an improvement in water quality by reductions in TN or TP may positively impact the ecological system in a measurable way. A negative slope is an indication of a decreasing trend, while a positive slope is an indication of an increasing trend.

[2] Results contain serial correlation (as per autocorrelation analysis results) used the p-value adjusted for serial correlation.

[3] If the p-value is less than 0.05, then a decreasing trend may suggest an improvement in water quality, and an increasing trend may suggest a decline in water quality.

Table 5-11
Water Quality Trends
C-17 Watershed

Total Nitrogen

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
12A	1999 - 2020	-0.266357	-0.000069	< 0.0001	Significant Decreasing Trend
C17S44	1999 - 2020	-0.371641	-0.000047	< 0.0001	Significant Decreasing Trend

Total Phosphorus

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
12A	1999 - 2020	-0.031471	0.000000	0.643489	Decreasing Trend
C17S44	1999 - 2020	-0.003606	0.0000000	0.945666	Decreasing Trend

Total Chlorophyll-a (corrected)

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
12A	1999 - 2020	-0.049994	-0.000350	0.478397	Decreasing Trend
C17S44	1999 - 2020	-0.019921	-0.000200	0.915730	Decreasing Trend

[1] Even if the p-value is determined to be statistically significant, the result may not be ecologically significant. For example, if a trend is statistically significantly declining (negative trend) and the concentration is low in the water, then it may not be realistic to assume that an improvement in water quality by reductions in TN or TP may positively impact the ecological system in a measurable way. A negative slope is an indication of a decreasing trend, while a positive slope is an indication of an increasing trend.

[2] Results contain serial correlation (as per autocorrelation analysis results) used the p-value adjusted for serial correlation.

[3] If the p-value is less than 0.05, then a decreasing trend may suggest an improvement in water quality, and an increasing trend may suggest a decline in water quality.

Table 5-11
Water Quality Trends
C-18 Watershed
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Total Nitrogen

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
16	1999 - 2020	-0.094378	-0.000024	0.172204	Decreasing Trend
15	1999 - 2020	-0.297808	-0.000059	< 0.0001	Significant Decreasing Trend
92	1999 - 2020	-0.073153	-0.000011	0.165168	Decreasing Trend
81	1999 - 2020	-0.053101	-0.000007	0.315784	Decreasing Trend

Total Phosphorus

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
16	1999 - 2020	-0.136475	-0.000002	0.046923	Significant Decreasing Trend
15	1999 - 2020	-0.249021	-0.000002	0.000397	Significant Decreasing Trend
92	1999 - 2020	0.158854	0.000001	0.004056	Significant Increasing Trend
81	1999 - 2020	0.002512	0.000000	0.965314	Increasing Trend

Total Chlorophyll-a (corrected)

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
16	1999 - 2020	0.066224	0.000114	0.359161	Increasing Trend
15	1999 - 2020	-0.211908	-0.000197	0.003623	Significant Decreasing Trend
92	1999 - 2020	0.081302	0.000096	0.439332	Increasing Trend
81	1999 - 2020	0.241820	0.000522	0.023125	Significant Increasing Trend

[1] Even if the p-value is determined to be statistically significant, the result may not be ecologically significant. For example, if a trend is statistically significantly declining (negative trend) and the concentration is low in the water, then it may not be realistic to assume that an improvement in water quality by reductions in TN or TP may positively impact the ecological system in a measurable way. A negative slope is an indication of a decreasing trend, while a positive slope is an indication of an increasing

[2] Results contain serial correlation (as per autocorrelation analysis results) used the p-value adjusted for serial correlation.

[3] If the p-value is less than 0.05, then a decreasing trend may suggest an improvement in water quality, and an increasing trend may suggest a decline in water quality.

Table 5-11
Water Quality Trends
C-51 Watershed

Total Nitrogen

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
38B	1999 - 2020	-0.282505	-0.000113	< 0.0001	Significant Decreasing Trend
37B	1999 - 2020	-0.330602	-0.000120	< 0.0001	Significant Decreasing Trend
C51S155	1999 - 2020	-0.228062	-0.000055	< 0.0001	Significant Decreasing Trend

Total Phosphorus

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
38B	1999 - 2020	0.064687	0.000003	0.359049	Increasing Trend
37B	1999 - 2020	-0.043207	-0.000002	0.548406	Decreasing Trend
C51S155	1999 - 2020	-0.001354	0.000000	0.979754	Decreasing Trend

Total Chlorophyll-a (corrected)

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
38B	1999 - 2020	0.016504	0.000037	0.816593	Increasing Trend
37B	1999 - 2020	-0.007587	-0.000019	0.918074	Decreasing Trend
C51S155	1999 - 2020	-0.211701	-0.000379	0.050898	Decreasing Trend

[1] Even if the p-value is determined to be statistically significant, the result may not be ecologically significant. For example, if a trend is statistically significantly declining (negative trend) and the concentration is low in the water, then it may not be realistic to assume that an improvement in water quality by reductions in TN or TP may positively impact the ecological system in a measurable way. A negative slope is an indication of a decreasing trend, while a positive slope is an indication of an increasing trend.

[2] Results contain serial correlation (as per autocorrelation analysis results) used the p-value adjusted for serial correlation.

[3] If the p-value is less than 0.05, then a decreasing trend may suggest an improvement in water quality, and an increasing trend may suggest a decline in water quality.

Table 5-11
Water Quality Trends
Loxahatchee Watershed

Total Nitrogen

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
69	2003 - 2020	-0.213041	-0.000048	< 0.0001	Significant Decreasing Trend
51	2000 - 2020	-0.229555	-0.000049	0.001234	Significant Decreasing Trend
62	2000 - 2020	-0.224752	-0.000072	< 0.0001	Significant Decreasing Trend
72	2000 - 2020	-0.081554	-0.000023	0.107944	Decreasing Trend

Total Phosphorus

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
69	2003 - 2020	-0.009410	0.000000	0.861829	Decreasing Trend
51	2000 - 2020	-0.057438	0.000000	0.413442	Decreasing Trend
62	2000 - 2020	0.074540	0.000001	0.165299	Increasing Trend
72	2000 - 2020	-0.015302	0.0000000	0.765424	Decreasing Trend

Total Chlorophyll-a (corrected)

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
69	2003 - 2020	-0.055612	-0.000120	0.301857	Decreasing Trend
51	2000 - 2020	-0.075457	-0.000145	0.304517	Decreasing Trend
62	2000 - 2020	-0.055570	-0.000148	0.307113	Decreasing Trend
72	2000 - 2020	-0.062153	-0.000319	0.226102	Decreasing Trend

[1] Even if the p-value is determined to be statistically significant, the result may not be ecologically significant. For example, if a trend is statistically significantly declining (negative trend) and the concentration is low in the water, then it may not be realistic to assume that an improvement in water quality by reductions in TN or TP may positively impact the ecological system in a measurable way. A negative slope is an indication of a decreasing trend, while a positive slope is an indication of an increasing trend.

[2] Results contain serial correlation (as per autocorrelation analysis results) used the p-value adjusted for serial correlation.

[3] If the p-value is less than 0.05, then a decreasing trend may suggest an improvement in water quality, and an increasing trend may suggest a decline in water quality.

Table 5-11
Water Quality Trends
ICWW-N Watershed

Total Nitrogen

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
30	2000 - 2020	-0.219147	-0.000060	0.001723	Significant Decreasing Trend

Total Phosphorus

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
30	2000 - 2020	-0.096400	-0.000001	0.166691	Decreasing Trend

Total Chlorophyll-a (corrected)

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
30	2000 - 2020	-0.114973	-0.000268	0.118170	Decreasing Trend

[1] Even if the p-value is determined to be statistically significant, the result may not be ecologically significant. For example, if a trend is statistically significantly declining (negative trend) and the concentration is low in the water, then it may not be realistic to assume that an improvement in water quality by reductions in TN or TP may positively impact the ecological system in a measurable way. A negative slope is an indication of a decreasing trend, while a positive slope is an indication of an increasing trend.

[2] Results contain serial correlation (as per autocorrelation analysis results) used the p-value adjusted for serial correlation.

[3] If the p-value is less than 0.05, then a decreasing trend may suggest an improvement in water quality, and an increasing trend may suggest a decline in water quality.

Table 5-11 Water Quality Trends
Lake Worth Lagoon North Watershed

Total Nitrogen

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
LWL-1	1999 - 2020	-0.273935	-0.000035	< 0.0001	Significant Decreasing Trend
11	1999 - 2020	-0.359838	-0.000086	< 0.0001	Significant Decreasing Trend
13	2000 - 2020	-0.322581	-0.000083	< 0.0001	Significant Decreasing Trend
LWL-4	2004 - 2020	-0.243326	-0.000024	< 0.0001	Significant Decreasing Trend

Total Phosphorus

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
LWL-1	1999 - 2020	-0.113614	-0.000001	0.062129	Decreasing Trend
11	1999 - 2020	0.165389	0.000003	0.002193	Significant Increasing Trend
13	2000 - 2020	0.098895	0.000002	0.071381	Increasing Trend
LWL-4	2004 - 2020	-0.253186	-0.000001	< 0.0001	Significant Decreasing Trend

Total Chlorophyll-a (corrected)

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
LWL-1	1999 - 2020	-0.145941	-0.000293	0.020744	Significant Decreasing Trend
11	1999 - 2020	0.006199	0.000003	0.911591	Increasing Trend
13	2000 - 2020	0.035742	0.000073	0.518773	Increasing Trend
LWL-4	2004 - 2020	-0.086708	-0.000076	0.167931	Decreasing Trend

[1] Even if the p-value is determined to be statistically significant, the result may not be ecologically significant. For example, if a trend is statistically significantly declining (negative trend) and the concentration is low in the water, then it may not be realistic to assume that an improvement in water quality by reductions in TN or TP may positively impact the ecological system in a measurable way. A negative slope is an indication of a decreasing trend, while a positive slope is an indication of an increasing trend.

[2] Results contain serial correlation (as per autocorrelation analysis results) used the p-value adjusted for serial correlation.

[3] If the p-value is less than 0.05, then a decreasing trend may suggest an improvement in water quality, and an increasing trend may suggest a decline in water quality.

Table 5-11
Water Quality Trends
Lake Worth Lagoon Center Watershed

Total Nitrogen

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
LWL-8	1999 - 2020	-0.092964	-0.000018	0.096594	Decreasing Trend
18C	2004 - 2020	-0.337820	-0.000110	< 0.0001	Significant Decreasing Trend
18D	2005 - 2020	-0.362541	-0.000116	< 0.0001	Significant Decreasing Trend
LWL-11	1999 - 2020	-0.187209	-0.000040	0.001601	Significant Decreasing Trend

Total Phosphorus

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
LWL-8	1999 - 2020	-0.062378	-0.0000009	0.250379	Decreasing Trend
18C	2004 - 2020	0.010971	0.000000	0.854730	Increasing Trend
18D	2005 - 2020	0.003443	0.000000	0.956265	Increasing Trend
LWL-11	1999 - 2020	-0.136591	-0.000002	0.019405	Significant Decreasing Trend

Total Chlorophyll-a (corrected)

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
LWL-8	1999 - 2020	0.184086	0.000475	0.001197	Significant Increasing Trend
18C	2004 - 2020	0.017272	0.000060	0.765541	Increasing Trend
18D	2005 - 2020	0.074984	0.000304	0.216560	Increasing Trend
LWL-11	1999 - 2020	0.013584	0.000016	0.825553	Increasing Trend

[1] Even if the p-value is determined to be statistically significant, the result may not be ecologically significant. For example, if a trend is statistically significantly declining (negative trend) and the concentration is low in the water, then it may not be realistic to assume that an improvement in water quality by reductions in TN or TP may positively impact the ecological system in a measurable way. A negative slope is an indication of a decreasing trend, while a positive slope is an indication of an increasing trend.

[2] Results contain serial correlation (as per autocorrelation analysis results) used the p-value adjusted for serial correlation.

[3] If the p-value is less than 0.05, then a decreasing trend may suggest an improvement in water quality, and an increasing trend may suggest a decline in water quality.

Table 5-11
Water Quality Trends
ICWW-S Watershed
(Page 10 of 14)

Total Nitrogen

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
LWL-13	2004 - 2020	-0.238523	-0.000039	< 0.0001	Significant Decreasing Trend
LWL-18	2000 - 2020	-0.235708	-0.000042	< 0.0001	Significant Decreasing Trend

Total Phosphorus

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
LWL-13	2004 - 2020	-0.227294	-0.000002	0.000141	Significant Decreasing Trend
LWL-18	2000 - 2020	-0.049988	-0.000001	0.386904	Decreasing Trend

Total Chlorophyll-a (corrected)

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
LWL-13	2004 - 2020	-0.070164	-0.000125	0.248290	Decreasing Trend
LWL-18	2000 - 2020	0.076600	0.000174	0.204251	Increasing Trend

[1] Even if the p-value is determined to be statistically significant, the result may not be ecologically significant. For example, if a trend is statistically significantly declining (negative trend) and the concentration is low in the water, then it may not be realistic to assume that an improvement in water quality by reductions in TN or TP may positively impact the ecological system in a measurable way. A negative slope is an indication of a decreasing trend, while a positive slope is an indication of an increasing trend.

[2] Results contain serial correlation (as per autocorrelation analysis results) used the p-value adjusted for serial correlation.

[3] If the p-value is less than 0.05, then a decreasing trend may suggest an improvement in water quality, and an increasing trend may suggest a decline in water quality.

Table 5-11
Water Quality Trends
Hillsboro Watershed

Total Nitrogen

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
1	2006 - 2020	-0.109239	-0.000033	0.313485	Decreasing Trend
2	2006 - 2020	-0.115492	-0.000020	0.280912	Decreasing Trend
3	2006 - 2020	-0.155735	-0.000027	0.156750	Decreasing Trend
S39	2000 - 2020	-0.153852	-0.000011	0.219738	Decreasing Trend

Total Phosphorus

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
1	2006 - 2020	-0.052782	-0.000002	0.650742	Decreasing Trend
2	2006 - 2020	-0.103586	-0.000004	0.383131	Decreasing Trend
3	2006 - 2020	-0.098727	-0.000004	0.405841	Decreasing Trend
S39	2000 - 2020	-0.390696	-0.000003	< 0.0001	Significant Decreasing Trend

Total Chlorophyll-a (corrected)

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
1	2006 - 2020	-0.091966	-0.000316	0.378615	Decreasing Trend
2	2006 - 2020	-0.320126	-0.001834	0.000947	Significant Decreasing Trend
3	2006 - 2020	-0.255719	-0.001915	0.009054	Significant Decreasing Trend
S39	No Data	No Data	No Data	No Data	

[1] Even if the p-value is determined to be statistically significant, the result may not be ecologically significant. For example, if a trend is statistically significantly declining (negative trend) and the concentration is low in the water, then it may not be realistic to assume that an improvement in water quality by reductions in TN or TP may positively impact the ecological system in a measurable way. A negative slope is an indication of a decreasing trend, while a positive slope is an indication of an increasing trend.

[2] Results contain serial correlation (as per autocorrelation analysis results) used the p-value adjusted for serial correlation.

[3] If the p-value is less than 0.05, then a decreasing trend may suggest an improvement in water quality, and an increasing trend may suggest a decline in water quality.

Table 5-11
Water Quality Trends
L-8 Watershed

Total Nitrogen

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
Culv10a	2000 - 2020	-0.058880	-0.000079	0.641932	Decreasing Trend

Total Phosphorus

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
Culv10a	2000 - 2020	0.011774	0.0000007	0.786942	Increasing Trend

Total Chlorophyll-a (corrected)

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
Culv10a	2000 - 2020	0.496780	0.001145	0.035240	Significant Increasing Trend

[1] Even if the p-value is determined to be statistically significant, the result may not be ecologically significant. For example, if a trend is statistically significantly declining (negative trend) and the concentration is low in the water, then it may not be realistic to assume that an improvement in water quality by reductions in TN or TP may positively impact the ecological system in a measurable way. A negative slope is an indication of a decreasing trend, while a positive slope is an indication of an increasing trend.

[2] Results contain serial correlation (as per autocorrelation analysis results) used the p-value adjusted for serial correlation.

[3] If the p-value is less than 0.05, then a decreasing trend may suggest an improvement in water quality, and an increasing trend may suggest a decline in water quality.

Table 5-11
Water Quality Trends
S-2-6-7 Watershed

Total Nitrogen

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
S-2	1999 - 2020	0.110472	0.000317	0.401659	Increasing Trend
39	2017 - 2020	-0.084037	-0.000500	0.684723	Decreasing Trend
43	2017 - 2020	0.134503	0.000000	0.441488	Increasing Trend

Total Phosphorus

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
S-2	1999 - 2020	0.047016	0.000002	0.266064	Increasing Trend
39	2017 - 2020	-0.279807	-0.000085	0.105675	Decreasing Trend
43	2017 - 2020	0.088764	0.000010	0.623425	Increasing Trend

Total Chlorophyll-a (corrected)

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
S-2	1999 - 2020	0.000000	0.000000	1.000000	Increasing Trend
39	2017 - 2020	0.005918	0.000000	1.000000	Increasing Trend
43	2017 - 2020	0.082112	0.002253	0.649044	Increasing Trend

[1] Even if the p-value is determined to be statistically significant, the result may not be ecologically significant. For example, if a trend is statistically significantly declining (negative trend) and the concentration is low in the water, then it may not be realistic to assume that an improvement in water quality by reductions in TN or TP may positively impact the ecological system in a measurable way. A negative slope is an indication of a decreasing trend, while a positive slope is an indication of an increasing trend.

[2] Results contain serial correlation (as per autocorrelation analysis results) used the p-value adjusted for serial correlation.

[3] If the p-value is less than 0.05, then a decreasing trend may suggest an improvement in water quality, and an increasing trend may suggest a decline in water quality.

Table 5-11
Water Quality Trends
WPBWS Watershed

Total Nitrogen

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
M Canal	2011 - 2020	-0.001720	0.000000	0.985957	Decreasing Trend
Control 4	2011 - 2020	-0.033052	0.000000	0.728493	Decreasing Trend
Lake Mangonia	2011 - 2020	-0.095997	-0.000015	0.304800	Decreasing Trend
Clear Lake	2011 - 2020	-0.064096	-0.000013	0.492730	Decreasing Trend

Total Phosphorus

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
M Canal	2011 - 2020	0.118285	0.000008	0.143404	Increasing Trend
Control 4	2011 - 2020	-0.065795	-0.000003	0.483482	Decreasing Trend
Lake Mangonia	2011 - 2020	0.214019	0.000001	0.029559	Significant Increasing Trend
Clear Lake	2011 - 2020	0.058412	0.000000	0.552364	Increasing Trend

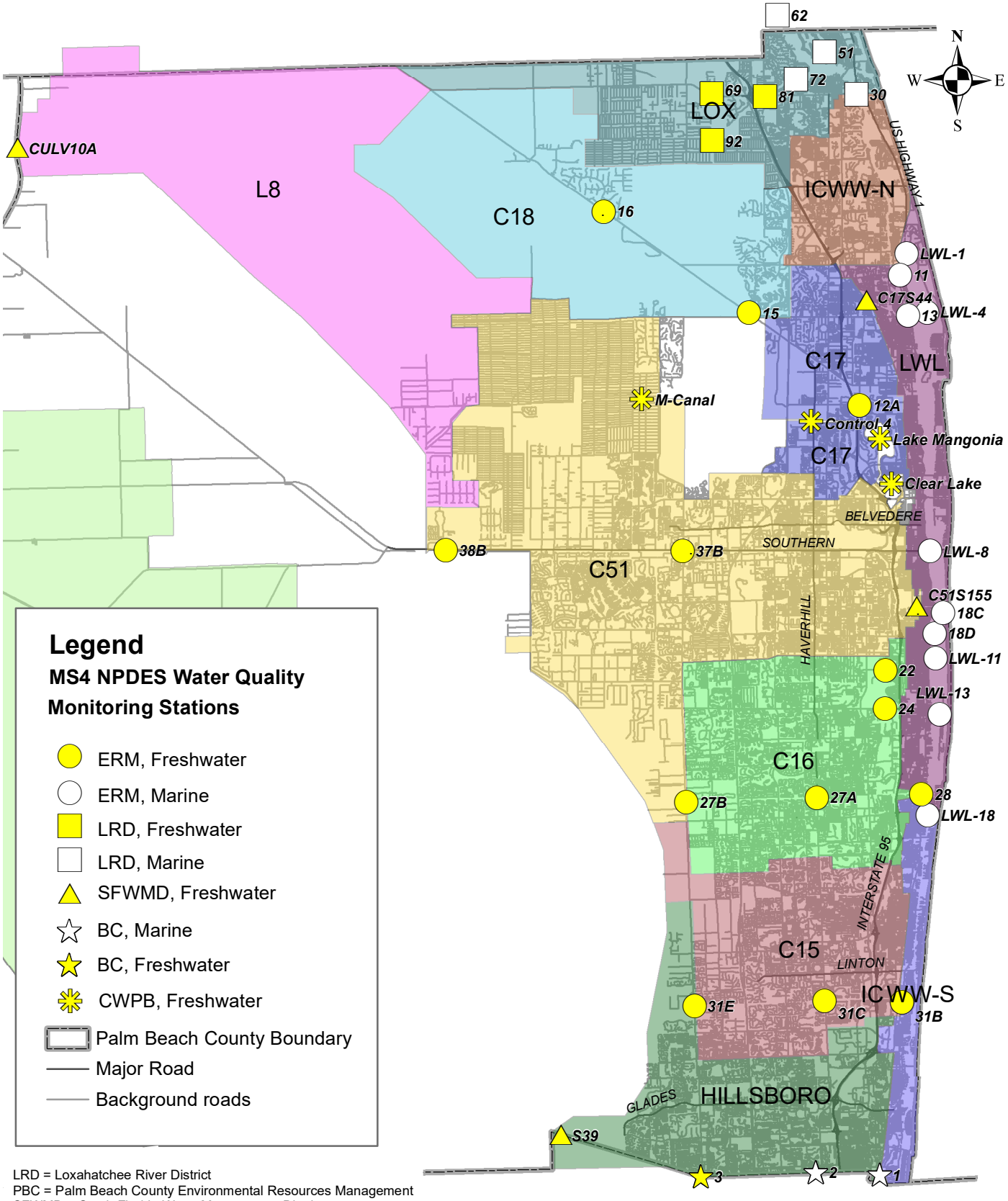
Total Chlorophyll-a (corrected)

Site	Date Range	Tau	Slope[1]	Selected P-Value[2]	Statistical Trend Interpretation[3]
M Canal	2011 - 2020	0.005061	0.000000	0.956722	Increasing Trend
Control 4	2011 - 2020	-0.106625	-0.000595	0.311741	Decreasing Trend
Lake Mangonia	2011 - 2020	-0.109220	-0.000985	0.292661	Decreasing Trend
Clear Lake	2011 - 2020	0.033657	0.000000	0.753668	Increasing Trend

[1] Even if the p-value is determined to be statistically significant, the result may not be ecologically significant. For example, if a trend is statistically significantly declining (negative trend) and the concentration is low in the water, then it may not be realistic to assume that an improvement in water quality by reductions in TN or TP may positively impact the ecological system in a measurable way. A negative slope is an indication of a decreasing trend, while a positive slope is an indication of an increasing trend.

[2] Results contain serial correlation (as per autocorrelation analysis results) used the p-value adjusted for serial correlation.

[3] If the p-value is less than 0.05, then a decreasing trend may suggest an improvement in water quality, and an increasing trend may suggest a decline in water quality.



LRD = Loxahatchee River District
PBC = Palm Beach County Environmental Resources Management
SFWMD = South Florida Water Management District
BC = Broward County
LWL = Lake Worth Lagoon
CWPB = City of West Palm Beach

F:\npbc\npbcnpds\WQmonitoring\2018-2019\WQ_Stations.mxd

P.A. No.: B6050.90

Palm Beach County (Eastern Area) Watershed Boundaries and Water Quality Monitoring Stations

Figure 5-1

Figure 5-2 Total Phosphorous Trend

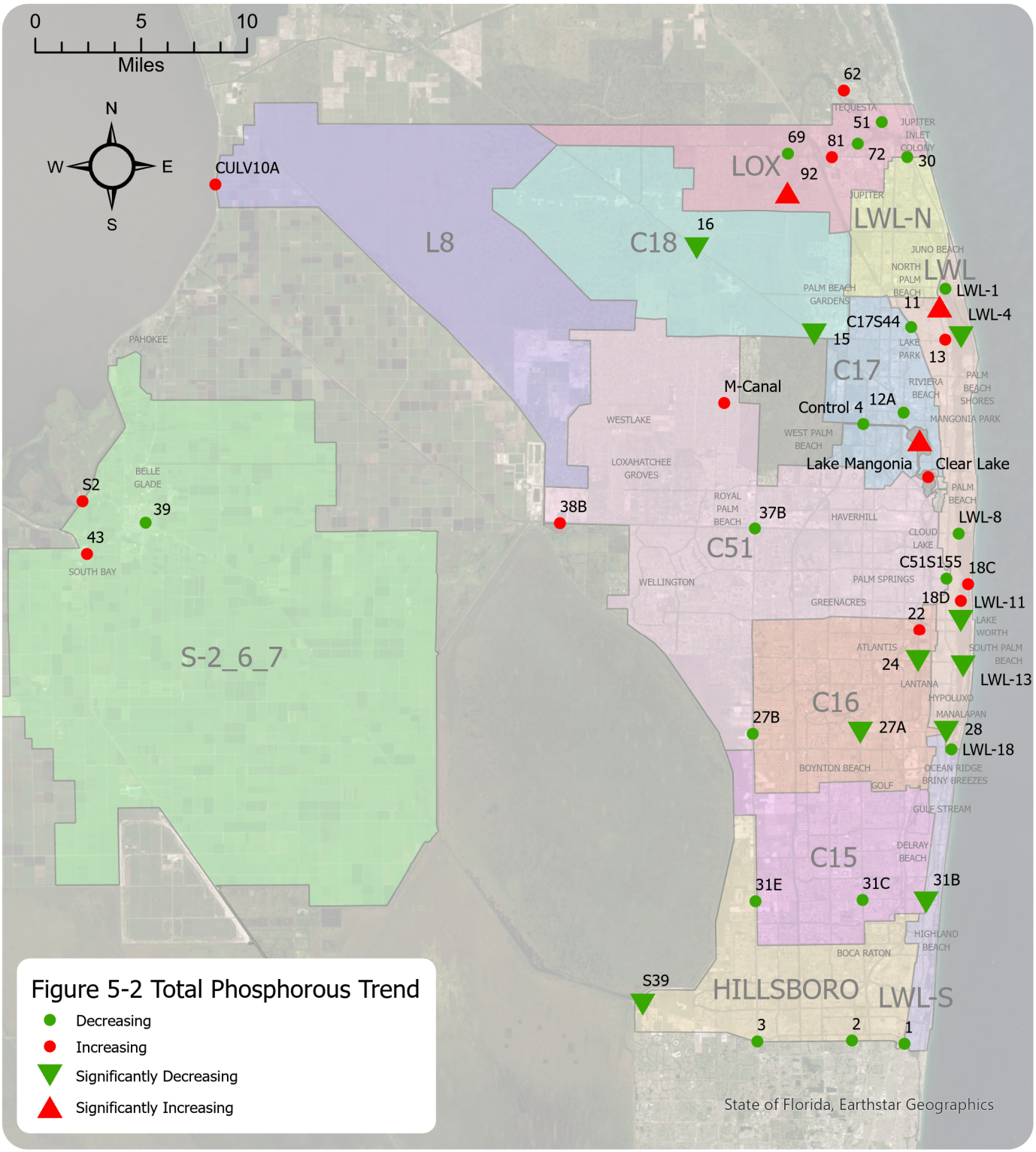


Figure 5-3 Total Nitrogen Trend

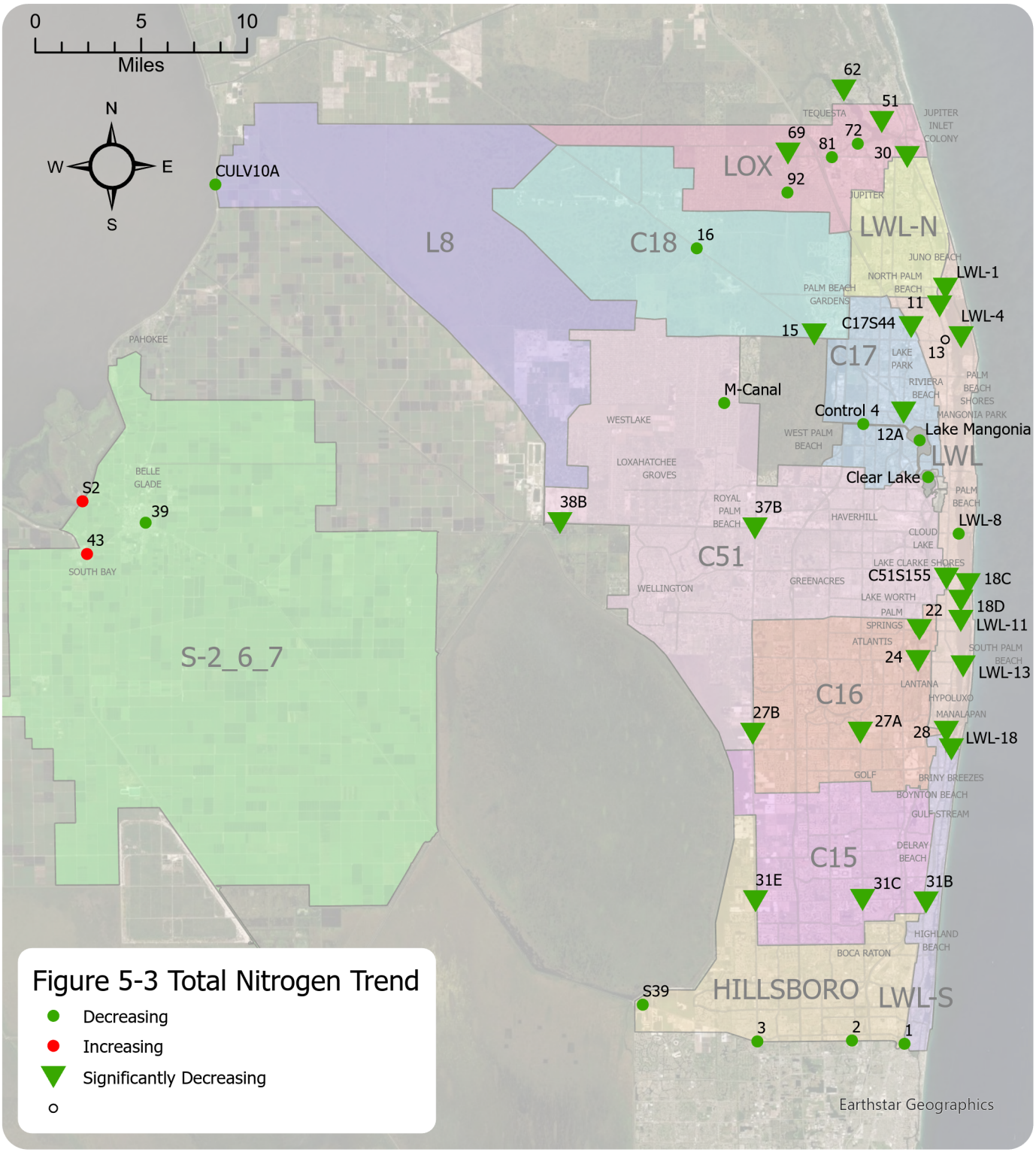


Figure 5-4 Chlorophyll-a (corrected) Trend

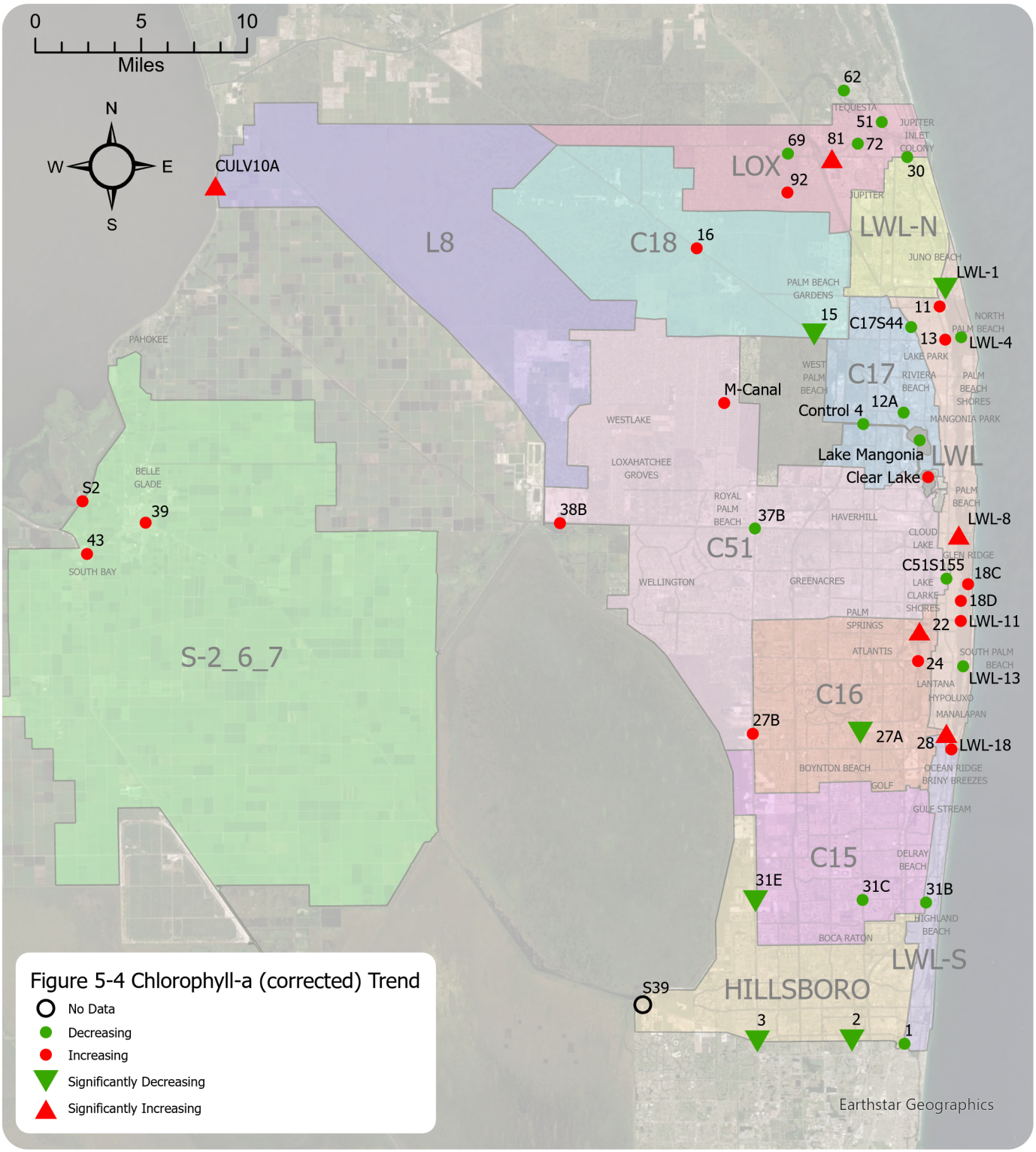


Figure 5-5

Decreasing Trend Not Significant Example

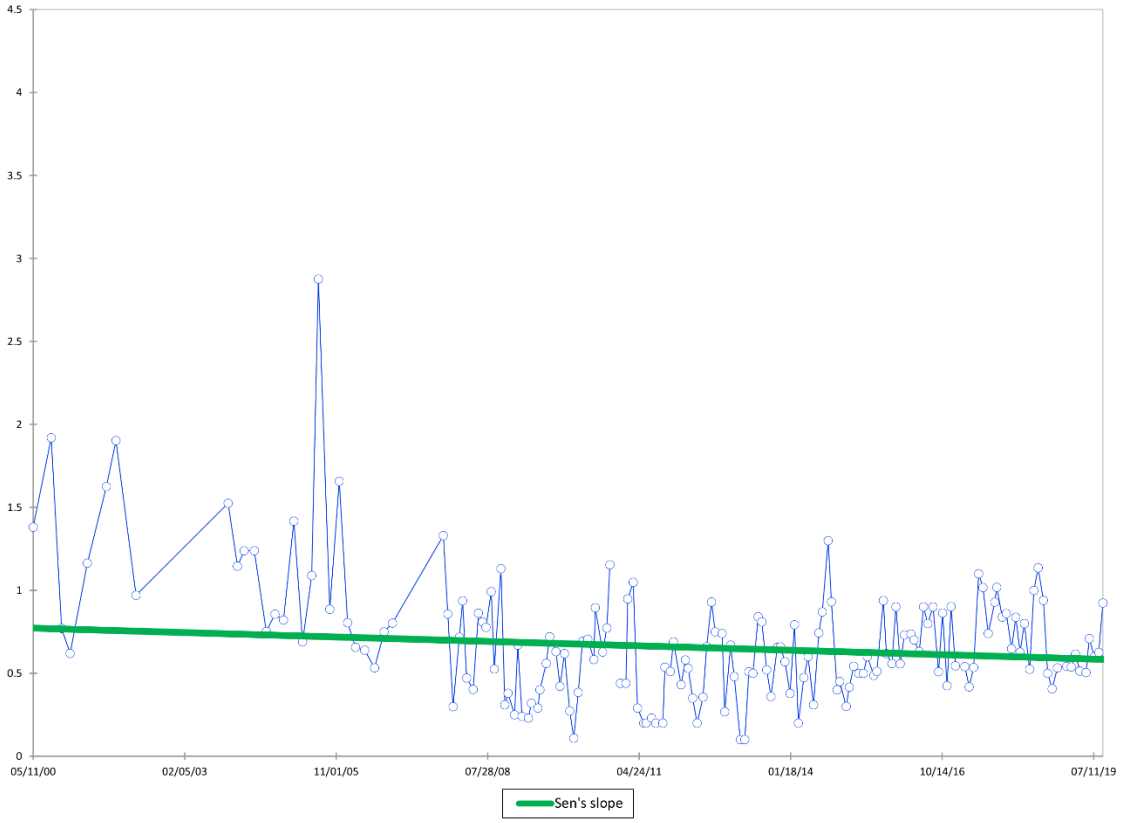
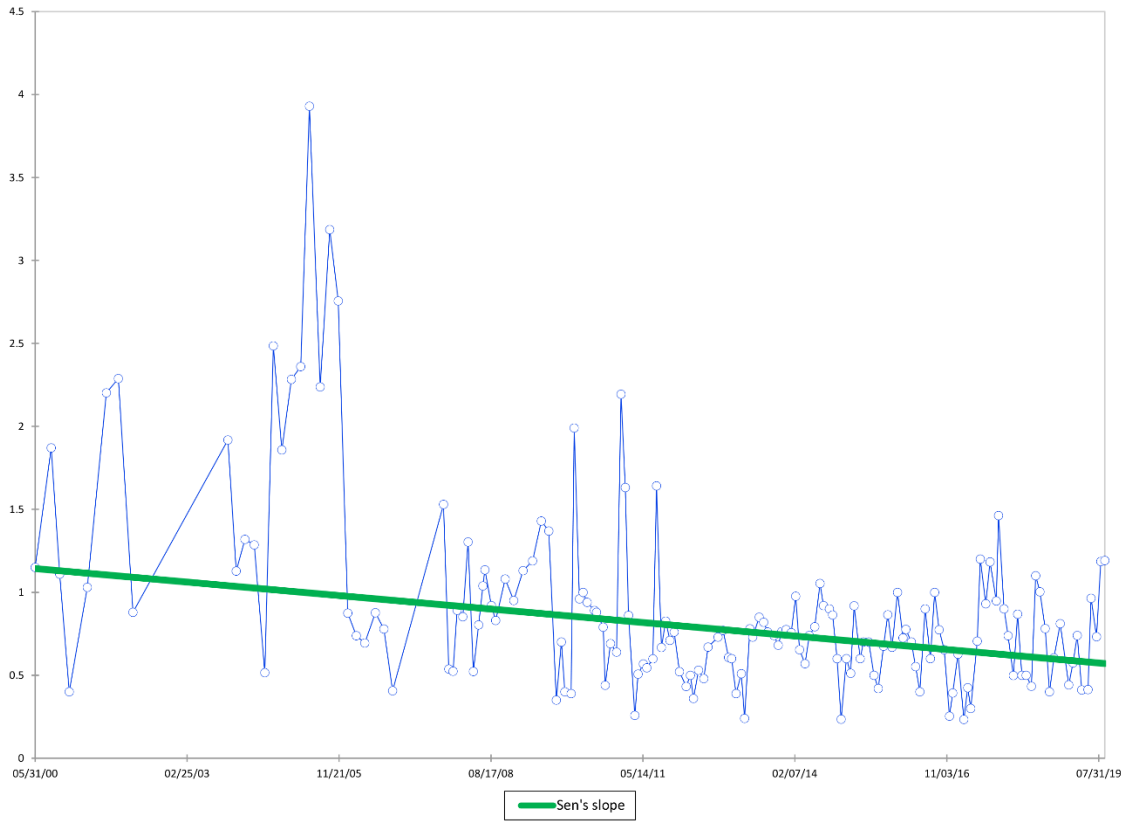


Figure 5-6
Decreasing Trend Significant Example



Appendix A: Permit Requirements

For Phase I MS4 Permit Reapplication, the following items are required to be attached to the Year 4 annual report:

1. *A statement with the timely filing of the Year 4 Annual Report that the Year 4 Annual Report is to serve as the principal component for re-application (may be included in a transmittal letter or as an attachment, note in Section V of the report). Include proposed revisions requested to the permittee's activities required under the existing permit, if applicable. Per 62-624.420(2), F.A.C.*

   The Year 4 Joint Annual Report Constitutes the primary component of Palm Beach County MS4s re-application. All co-permittees have referenced the Joint Annual Report in their individual Annual Report Form and have signed/executed their Annual Report Forms indicating authorization.

   There are two sections of the permit for which there are recommended revisions for the Cycle 5 Permit:

   1. **Special Districts (Indian Trail Improvement District, Northern Palm Beach County Improvement District, South Indian River Water Control District, and Florida Department of Transportation - District 4 and the Turnpike Enterprise) should all be treated equally pertaining to legal authority to implement and enforce elements of the required stormwater management programs, such as Parts III. A. 2., A.5., A.6, A.7.a., A.7.c., A.7.e., A.7.f., A.7.g., A.8.a., A.8.b., and A.9.a. All five Special Districts noted above lack the legal authority by State Statute or law to adopt ordinances, adopt land development regulations and/or codes, enforce regulations and/or codes, and inspect facilities outside their easements and/or rights-of way. For consistency amongst the 5 Special Districts, revisions are needed for Part(s) III. A.5., A.7.a., A.7.c., A.7.e., A.7.f., A.7.g., A.8.a., A.8.b., and A.9.a.**

   2. **The other section recommended for revision is Part VIII.B - Basin Management Action Plans.**

      a. **A provision should be added that the permittee is considered to be in compliance with the BMAP and/or implementation plan requirements if its SWMP activities meet the BMAP reduction goals. Any equitable reduction allocation amongst the stakeholders must provide credit for the permittee's SWMP.**
      b. **Total Maximum Daily Load Prioritization Plan - The Cycle 4 process of each permittee individually prioritizing, estimating pollutant loads, monitoring, and implementing supplemental SWMP TMDL activities is not an effective way to allocate resources and achieve TMDL restoration goals. The Cycle 4 prioritization process can result in**

prolonged TMDL pollutant reduction efforts because any one TMDL may not be prioritized by a sufficient number of stakeholders. In contrast, the Cycle 3 Permit TMDL prioritization process engaged more permittees, had more collaboration and resulted in allocating/sharing resources to address at least one or more TMDLs during the permit cycle.

c. **TMDL Monitoring – Add a third option. If sufficient water quality monitoring data already exists to estimate the MS4 pollutant loading contributions, no additional monitoring, before implementation of programs/projects to reduce loading, is required.**

Permittees also reserve the right to review and submit comments on DEP's draft of the Cycle 5 Permit.

2. *Current information for Section I of the Year 4 Annual Report. Per 62-624.440(1) (a-c), F.A.C.*
   Please refer to Table 1-1 Permittee Contacts in the Year 4 Joint Annual Report. This summarizes the information from Section I of each permittee's individual Annual Report Form.

3. *Listing of changes in co-applicants (co-permittees) since issuance of initial Ms4 permit. Per 62-624.440(1)(d), F.A.C.*

   There is one name change in the current listing of the-permittees: The City of Lake Worth changed its name to the City of Lake Worth Beach. Depending on when the Cycle 5 permit is issued, there may be two additions to the co-permittee list: Seminole Improvement District (SID) and Town of Loxahatchee Groves (LG). Steps involved to add these two permittees include: 1) DEP notification of MS4 Permit coverage required based on 2020 census, 2) request by SID and/or LG to become a co-permittee in the Palm Beach County Phase I Program, 3) acceptance by PBC NPDES Steering Committee, and 4) entering into an interlocal agreement with Northern Palm Beach County Improvement District (lead permittee).

4. *Identification of any previously unidentified water bodies receiving discharges from the MS4; and a summary of any known water quality impacts on the newly identified water bodies from the MS4 discharge. Per 62- 624.440(1) (e,f), F.A.C.*

   One new water body was identified by the Village of North Palm Beach: North Palm Beach Waterway. There is no information on any water quality impacts on this water body.

5. *Summary of known or estimated reductions in stormwater pollutant loads discharged from the MS4 resulting from implementation of the stormwater management plan (SWMP) during the term of the most recent permit. Per 62-624.440(1)(g), F.A.C.*

Refer to the individual permittee annual Assessment Reports. These, along with the Year 3 Joint Annual Report Appendix B Average Annual Pollutant Loading Model Activities. All the MS4s, in all the major watersheds, are showing reduction in pollutant loading from Cycle 3 to Cycle 4.

6. *If the total annual pollutant loadings have not decreased from the previous permit cycles, appropriate revisions to the SWMP shall be included. Per Permit Part V.A.3.*

   Total Annual Pollutant Loadings for all MS4s decreased from Cycle 3 to Cycle 4. Refer to individual annual Assessment Reports.

7. *The permittees shall submit a copy of the assessment program as an attachment to the Year 4 ANNUAL REPORT, including any suggested changes to improve the plan, for Department review and approval. Specifically, the submission of the assessment program shall (per Permit Part V.B.5- Submission of the Assessment Program for Reissuance:*

   a. *Based on an analysis of the assessment results, identify any evidence of water quality and/or pollutant loading improvements or degradation over the permit period or a statement indicating that the results are inconclusive; and*

   b. *Determine whether the assessment program is providing data that can be used to assess the effectiveness of the SWMP in reducing stormwater pollutant loadings, assess the effectiveness of specific BMPs, and determine where stormwater retrofitting projects should be prioritized for implementation. If not, identify any additional assessment elements needed to assist in the evaluation of the effectiveness of the SWMP, and include any requested changes and the rationale for each change.*

   Refer to Section 5 Water Quality Monitoring Program in Year 4 Joint Annual Report, Appendix B Average Annual Pollutant Loading Model Activities in Year 3 Joint Annual Report, and the permittee individual annual Assessment Reports. Review of this information indicates the existing SWMP are effective in reducing pollutant loadings.

8. *Submit a copy of the existing Monitoring Plan as an attachment, to include revisions made since last permit cycle and permit elements Part V.B.3.a-d. Is this referring to the group's "water quality monitoring program" or the individual permittees' "Assessment Programs" (which contain a WQ component)?*

Refer to Section 5 Water Quality Monitoring Program in Year 4 Joint Annual Report. Any additional monitoring by individual permittees is covered in their individual annual Assessment Report.

9. *TMDL Implementation Plan / Supplemental SWMP to be submitted as part of the permit renewal application (if applicable TMDL activities have been undertaken). Per Permit Part VIII.B.3.d.*

   Only two (2) permittees were required to submit supplemental SWMP programs for a TMDL Implementation Plan. Refer to Year 4 Annual Reports from Boynton Beach and Delray Beach for information on their supplemental SWMP.