

Environmental Protection Agency  
National Pollutant Discharge  
Elimination System

**Palm Beach County MS4**  
Permit No. FLS000018

## **Joint Annual Report**

submitted by  
**Northern Palm Beach County**  
**Improvement District**  
as Lead Permittee

prepared by  
Mock, Roos & Associates, Inc.

August 1998

**EPA/NPDES**

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A	Palm Beach County	U	Town of Mangonia Park
B	City of Atlantis	V	Village of North Palm Beach
C	City of Belle Glade	W	Town of Ocean Ridge
D	City of Boca Raton	X	City of Pahokee
E	City of Boynton Beach	Y	Town of Palm Beach
F	Town of Cloud Lake	Z	City of Palm Beach Gardens
G	City of Delray Beach	AA	Town of Palm Beach Shores
H	Town of Golfview ( <b>deleted</b> )	BB	Village of Palm Springs

I	City of Greenacres	CC	City of Riviera Beach
J	Town of Gulf Stream	DD	Village of Royal Palm Beach
K	Town of Haverhill	EE	City of South Bay
L	Town of Highland Beach	FF	Town of South Palm Beach
M	Town of Juno Beach	GG	Village of Tequesta
N	Town of Jupiter	HH	City of West Palm Beach
O	Town of Jupiter Inlet Colony	II	Village of Wellington
P	Town of Lake Clarke Shores	JJ	Indian Trail Improvement District
Q	Town of Lake Park	KK	North Palm Beach Heights WCD
R	City of Lake Worth	LL	NPBCID
S	Town of Lantana	MM	South Indian River WCD
T	Town of Manalapan	NN	Florida DOT

**Palm Beach County NPDES  
Municipal Separate Storm System  
Permit No. FLS000018  
Joint Annual Report  
February 1, 1997 to January 31, 1998**

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**Section 1 – Contacts**

***1.1 Report Certification***

**Engineer's Certification**

I hereby certify, as a Professional Engineer in the State of Florida, that this Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer Systems (MS4s), for Palm Beach County Permit No. FLS000018 Joint Annual Report was assembled under my direct responsible charge. This certification is provided in accordance with Florida Board of Professional Engineers Rule on Certification under Chapter 21H-29.

Alan D. Wertepny, P.E.  
Project Manager, Mock, Roos & Associates, Inc.

\_\_\_\_\_  
(Engineer's Signature)

\_\_\_\_\_  
(Date and Engineer's Seal)

**Permittee Certifications**

Certifications for the co-permittee annual reports are included in each individual report which are attached to the Joint Report as Appendices "A" through "NN."

## ***1.2 Palm Beach County Program Listing of Responsible Parties***

Effective February 1, 1997, the United States Environmental Protection Agency issued to 40 governmental entities in Palm Beach County a municipal National Pollutant Discharge Elimination System Permit No. FLS000018 for their stormwater discharges. The Palm Beach County governmental entities subject to this NPDES permit (co-permittees) nominated and appointed Northern Palm Beach County Improvement District (Northern) as lead permittee in 1991 for the purposes of assisting all co-permittees in the coordination of activities and preparation and submittal of annual reports to Environmental Protection Agency. Northern, as the lead permittee, entered into interlocal agreements or joint participation agreements with each of the co-permittees for the purposes of identifying duties and responsibilities of the parties and fulfilling the conditions of the NPDES permit. Through these interlocal agreements, cost sharing for the joint activities is provided by each of the co-permittees to the lead permittee.

### **1.2.1 Steering Committee**

To coordinate the joint activities in Palm Beach County's NPDES program, the co-permittees also established a six-member NPDES Steering Committee. The Steering Committee, established in 1991, is comprised of two representatives of large municipalities, two representatives of smaller municipalities, one representative of the special districts and one representative from Palm Beach County. Northern serves as the administrative body of the Steering Committee. The Committee meets regularly (approximately monthly) at Northern's offices to coordinate the program. A listing of the current NPDES Steering Committee and Administrative personnel is included in Table 1-1.

Table 1-1  
Palm Beach County MS4 NPDES Steering Committee

Mr. Laurent Van Cott, P.E. Steering Committee Chairman Town of Mangonia Park Southern Design Group, Inc. Phone (561) 743-0501
Mr. Ken Ferry, P.E. Steering Committee Vice Chairman City of Atlantis, Town of Haverhill, Town of Lake Park, Town of Lantana, Town of Ocean Ridge c/o Barker, Osha & Anderson, Inc. Phone (561) 626-4653
Mr. Randall Krejcarek, P.E. Steering Committee Secretary City of Delray Beach Phone (561) 243-7322
Mr. John Bonde Steering Committee Member, District Administrator of Indian Trail Improvement District Phone (561) 793-0874
Ms. Rebecca Travis, P.E. Steering Committee Member City of Boca Raton Williams, Hatfield & Stoner, Inc. Phone (561) 738-0133
Mr. Allen Trefry Steering Committee Member Environmental Director Palm Beach County ERM Phone (561) 233-2400
<b>Administration – Northern Palm Beach County Improvement District as Lead Permittee</b>
Mr. Peter L. Pimentel Executive Director Northern Palm Beach County Improvement District Phone (561) 624-7830
Mr. Ken Edwards, Esq. Caldwell & Pacetti, P.A. Legal Counsel for Northern Palm Beach County Improvement District Phone (561) 655-0620
Mr. Alan D. Wertepny, P.E. Mock, Roos & Associates, Inc.

Engineers for Northern Palm Beach County Improvement District  
 Phone (561) 683-3113

### **1.2.2 Co-Permittees**

This joint annual report was assembled from the individual co-permittees' attached reports (Appendices A through NN) and activities coordinated through the NPDES Steering Committee. This annual report was also reviewed by the co-permittees and approved by the Steering Committee. Table 1-2 provides a listing of the contact person and representative for each of the co-permittees.

Table 1-2 Listing of Co-Permittee Responsible Parties

<b>Appendix No.</b>	<b>Permittee, Address</b>	<b>Name, Title, Telephone</b>
A	Palm Beach County ERM 3323 Belvedere Road, Building #502 West Palm Beach, FL 33406	Mr. Allen Trefry Environmental Director  (561) 233-2400
B	City of Atlantis 260 Orange Tree Drive Atlantis, FL 33462	Ms. Mo Thornton City Manager  (561) 965-1744
C	City of Belle Glade 110 S.W. Avenue E Belle Glade, FL 33430-3997	Mr. Ken Robinson Administrator of Utilities  (561) 996-5876
D	City of Boca Raton 201 West Palmetto Park Road Boca Raton, FL 33432	Mr. Maurice Morel City Engineer  (561) 338-7377
E	City of Boynton Beach 5469 W. Boynton Beach Boulevard Boynton Beach, FL 33437	Mr. John Guidry Director of Utilities  (561) 375-6401
F	Town of Cloud Lake 100 Lang Road West Palm Beach, FL 33406-3222	Ms. Dorothy C. Gravelin Town Clerk  (561) 686-2815
G	City of Delray Beach 434 S. Swinton Avenue Delray Beach, FL 33444-2698	Mr. Randall Krejcarek City Engineer  (561) 243-7322

<b>Appendix No.</b>	<b>Permittee, Address</b>	<b>Name, Title, Telephone</b>
I	City of Greenacres 5985 10th Avenue, N. Greenacres, FL 33463	Mr. Richard C. Olson City Manager  (561) 642-2006
J	Town of Gulf Stream 100 Sea Road Gulf Stream, FL 33483	Mr. William Thrasher Finance Director  (561) 276-5116
K	Town of Haverhill 4585 Charlotte Street Haverhill, FL 33417	Mr. John Carroll Mayor  (561) 689-0370
L	Town of Highland Beach 3614 South Ocean Blvd. Highland Beach, FL 33487	Ms. Doris Trinley Acting Town Manager  (561) 278-4548
M	Town of Juno Beach 340 Ocean Drive Juno Beach, FL 33408	Mr. Dennis Barrett Public Works Director  (561) 626-1122
N	Town of Jupiter 210 Military Trail Jupiter, FL 33458	Mr. David J. Rotar Field Operations Coordinator  (561) 746-8343
O	Town of Jupiter Inlet Colony P.O. Box 728 Jupiter, FL 33468-0728	Mr. Nicholas Porto Mayor  (561) 746-3787
P	Town of Lake Clarke Shores 1701 Barbados Road West Palm Beach, FL 33406	Mr. Stuart Liberman Town Manager  (561) 964-1515
Q	Town of Lake Park 650 Old Dixie Highway Lake Park, FL 33403	Mr. Brian Sullivan Public Works Director  (561) 848-0371
R	City of Lake Worth 1749 3rd Avenue South Lake Worth, FL 33460	Mr. Dave Hunt Public Works Director  (561) 586-1720

<b>Appendix No.</b>	<b>Permittee, Address</b>	<b>Name, Title, Telephone</b>
S	Town of Lantana 500 Greynolds Circle Lantana, FL 33462	Mr. Ron Ferris Town Manager  (561) 540-5000
T	Town of Manalapan 600 S. Ocean Blvd. Manalapan, FL 33462-3398	Mr. Mark T. Hull Utilities Director  (561) 585-9477
U	Town of Mangonia Park 1755 East Tiffany Drive West Palm Beach, FL 33407	Ms. Darla Levy Town Administrator  (561) 848-1235
V	Village of North Palm Beach 645 Prosperity Farms Road North Palm Beach, FL 33408	Mr. Dennis Kelly Village Manager  (561) 848-3476
W	Town of Ocean Ridge 6450 N. Ocean Blvd. Ocean Ridge, FL 33435	Mr. Gary Lanker Town Manager  (561) 732-2635
X	City of Pahokee 171 North Lake Avenue Pahokee, FL 33476	Mr. Ken Schenck City Manager  (561) 924-5534
Y	Town of Palm Beach 360 S. County Rd., P.O. Box 2029f Palm Beach, FL 33480	Mr. Robert J. Doney Town Manager  (561) 838-5410
Z	City of Palm Beach Gardens P.O. Box 727 Jupiter, FL 33468-0727	Mr. Lennart Lindahl LBF&H  (561) 746-9248
AA	Town of Palm Beach Shores 247 Edwards Lane Palm Beach Shores, FL 33404-5718	Mr. Thomas C. Chilcote Town Mayor  (561) 844-3457
BB	Village of Palm Springs 226 Cypress Lane Palm Springs, FL 33461	Mr. Richard A. Gift Assistant Public Service Director  (561) 965-5770

<b>Appendix No.</b>	<b>Permittee, Address</b>	<b>Name, Title, Telephone</b>
CC	City of Riviera Beach P.O. Box 10682 Riviera Beach, FL 33419	Mr. L. John Samadi, P.E. City Engineer  (561) 845-4060
DD	Village of Royal Palm Beach 1050 Royal Palm Beach Blvd. Royal Palm Beach, FL 33441	Mr. Richard Tuttle, P.E. Village Engineer  (561) 790-5122
EE	City of South Bay 335 S.W. 2nd Avenue South Bay, FL 33493	Mr. Michael E. Jackson City Manager  (561) 996-6751
FF	Town of South Palm Beach 3577 5. Ocean Blvd. South Palm Beach, FL 33480	Mrs. Margot K. Beck Town Administrator  (561) 588-8889
GG	Village of Tequesta P.O. Box 3273 Tequesta, FL 33469-0273	Mr. Allan Oslund Coordinator of Stormwater Utilities  (561) 575-6260
HH	City of West Palm Beach 1000 45th Street, Unit 15 West Palm Beach, FL 33407	Mr. W. Erik Olson, P.E. Director of Public Utilities  (561) 659-8040
II	Village of Wellington 14000 Greenbriar Blvd. Wellington, FL 33414	Mr. Ken Roundtree Public Works Director  (561) 791-4000
JJ	Indian Trail Improvement District 13476 61st Street North West Palm Beach, FL 33412-1915	Mr. John Bonde District Administrator  (561) 793-0874
KK	North Palm Beach Heights WCD 725 North A-1-A, Suite C1- 11 Jupiter, FL 33477	Mr. Jeff Iravani District Engineer  (561) 575-6030
LL	Northern Palm Beach County Improvement 357 Hiatt Drive Palm Beach Gardens, FL 33418	Ms. Tracy C. Robb, P.E. Staff Engineer  (561) 624-7830

<b>Appendix No.</b>	<b>Permittee, Address</b>	<b>Name, Title, Telephone</b>
MM	South Indian River WCD 15600 Jupiter Farms Road Jupiter, Florida 33478	Mr. Gale English General Manager  (561) 747-0550
NN	FDOT – District Four 3400 West Commercial Boulevard Ft. Lauderdale, FL 33309-3421	Mr. Clark Turberville, P.E. District Permits Engineer  (954) 777-4377

## **Section 2 – Plan Evaluation**

### ***2.1 Objective of Program***

The objective of the Palm Beach County NPDES program is to achieve a reduction of stormwater pollutants from the co-permittees' stormwater systems to the maximum extent practicable through the development and implementation of the approved stormwater management program elements as contained in the NPDES Permit No. FLS000018.

### ***2.2 Major Findings***

Nine stormwater management programs are required to be developed and implemented within the first three years of the permit. Within these nine programs, there are 143 activities or tasks that are required to be performed by the co-permittees. During the first year, the co-permittees performed 100 activities as required by the permit. These activities concentrated on five of the nine required programs and include:

- Inspection and maintenance of structural controls
- Implementation of development regulations
- Implementation of water quality criteria for flood control projects
- Pesticides/herbicides training and certification procedures
- Illicit discharge inspections, investigation and enforcement

The remaining four major programs are Roadways, Municipal Solid Waste, High Risk Facilities and Construction Sites. Municipal Solid Waste is covered by other federal, state and local programs and therefore is not applicable to the co-permittees. Programs are being developed and implemented for roadways, high-risk facilities and construction site runoff, however, industrial high-risk facilities are minimal within the county.

Historically within the county, there have been a number of state and local regulatory programs that have contributed to improving the water quality of stormwater discharges. These programs include the permitting of construction projects by South Florida Water Management District (SFWMD) since the mid-1970s. The Florida Department of Environmental Protection (FDEP) regulations provide for meeting state water policy goals, registering underground and aboveground storage tanks, establishing operating procedures for municipal solid waste facilities and regulating hazardous waste management facilities. The state has also established programs

providing for training and certification for the use and application of pesticides and herbicides. Local Palm Beach County programs include a wellfield protection ordinance to regulate businesses within wellfield areas which use or store hazardous substances; a regional fire rescue response procedure for the release or spills of hazardous materials; and public education programs for proper disposal techniques for oils, toxics and household hazardous materials.

The federal, state and local involvement in the county's stormwater system is continuing and should improve the quality of all stormwater discharges. Current programs underway include the following:

- Best Management Practices (BMPs) in the Everglades Agricultural Area – BMP regulatory rule for agricultural areas in western Palm Beach County
- Lake Okeechobee Surface Water and Improvement Plan – Dairy regulatory rule for BMPs
- Everglades Construction Project – 47,000 acres of storage treatment areas in western Palm Beach County
- C-51 Canal West End project and Stormwater Treatment Area
- US Army Corps of Engineers (USACE) “Restudy” of the Central and Southern Florida (C&SF) project
- FDEP and Palm Beach County Lake Worth Lagoon Management Plan – water and sediment quality, regulatory review and pollution prevention, habitat restoration enhancement, and public use and outreach

### ***2.3 Overall Program Strengths/Weaknesses***

The strengths of the program lie in the following areas:

- It represents a coordinated effort across the entire county
- A high level of information has been exchanged among all co-permittees in their effort to implement stormwater management programs
- It is proving to be cost-effective through group funding
- Group testing equates to a unified data collection program
- It has fostered the development of a uniform reporting procedure
- Awareness of existing activities, procedures and programs of the different government entities has strengthened the overall effectiveness of the program

The program weaknesses appear to be in three areas:

- Limited flexibility to modify requirements in the federal program to fit the specific needs of Palm Beach County
- Lack of federal or state support for funding of the stormwater management program
- Extensive amount of documentation and record keeping associated with permit compliance

## ***2.4 Major Accomplishments***

The Steering Committee workshops have provided a valuable resource for the co-permittees to coordinate and discuss activities for the implementation of stormwater management programs. Reporting forms for structural controls, dry weather screening and illicit discharges have been developed and distributed to the co-permittees. Educational workshops have included hazardous spill response procedures and educational materials associated with disposal techniques for oils, toxics, household waste materials, etc. Some of the co-permittees have purchased equipment to maintain roadways, swales, catchbasins and stormwater systems.

## ***2.5 Future Direction of Program***

The future direction of the program has both short-term and long-term components. On the short-term basis, the co-permittees will continue to develop and implement stormwater programs to achieve permit compliance. The long-term future of the program is dependent upon the involvement of the state and federal agencies. Delegation of the NPDES MS4 stormwater permitting program to FDEP may institute changes. Federal regulations (CFR122.26) and modifications to the Clean Water Act may also affect the future direction of the program. In any event, it is clear that, with the local, state and federal interests in Palm Beach County, cooperative strides will be made to achieve reduction of stormwater pollutant loadings into the county's waterways.

### **Section 3 – Summary Table – Activities**

The attached Part III schedule for implementation and compliance has been extracted from the Palm Beach County MS4 NPDES Permit No. FLS000018. This summary table has been updated to include comments made by the co-permittees in their individual annual reports (attached as Appendices A through NN). Completed activities are identified in the table. Please refer to the individual co-permittee reports for more detail on the stormwater activities.

Modification to the attached schedule includes co-permittee name changes for two entities. Indian Trail Water Control District has changed to Indian Trail Improvement District and Acme Improvement District (AID) is now referred to as the Village of Wellington. By the incorporation of the Village of Wellington, Acme Improvement District became a dependent special district with the Village.

The Village of Golfview has been removed from the list of co-permittees since the municipality is no longer in existence. The underlying lands for the Town of Golfview were purchased by the Palm Beach County Department of Airports for expansion of Palm Beach International Airport (PBIA). All Golfview stormwater facilities will be eliminated or modified with the PBIA improvements. PBIA is subject to the NPDES requirements for airports and therefore, the NPDES industrial program will cover these lands.

PART III. SCHEDULES FOR IMPLEMENTATION AND COMPLIANCE

The permittee(s) shall comply with the following schedules for Storm Water Management Program implementation and augmentation, and for permit compliance.

A. IMPLEMENTATION AND AUGMENTATION OF STORM WATER MANAGEMENT PROGRAMS

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>1. Operation and Maintenance of Structural Controls and Storm Water Collection Systems.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>
ALL	1) Perform inspections and maintenance of the structural controls identified in Table II.A.1.a. on pages 4 - 6 of this permit discharging to the MS4 within each permittee's jurisdictional area.  Update Table II.A.1.a. in each ANNUAL REPORT.  Maintain an internal record keeping system to track inspections and maintenance activities performed on the structural controls identified in Table II.A.1.a. on pages 4 - 6 of this permit.	Annual Requirement	YES	
	2) Annually, assess the accomplishments of your inspection and maintenance program as compared to the suggested maintenance schedule outlined in Table II.A.1.b. on pages 7 - 15 of this permit.	Provide in each ANNUAL REPORT	YES	

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>2. Control of Discharges from Areas of New Development and Significant Redevelopment.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>
Palm Beach County	3) Schedule and perform drainage studies on the MS4s that receive discharges from areas of new development and significant redevelopment.  Include in each subsequent ANNUAL REPORT an updated mapping of the existing municipal-owned storm water drainage system.	Within 24 Months of the Effective Date of the Permit	NO	
ALL	4) Where applicable, implement procedures for post-development maintenance and proper operation of storm water related improvements within areas of new development or significant redevelopment discharging into the MS4 within each permittee's jurisdictional area.	Within 24 Months of the Effective Date of the Permit	NO	
City of Atlantis, Town of Haverhill, Town of Jupiter Inlet Colony, Town of Lantana, ITID, NPBCID, NPBHWCD, SIRWCD	5) For areas of new development and significant redevelopment, adhere to the treatment performance standards set forth in the State Water Policy. In addition, comply with any additional or more stringent design requirements and local codes.	Within 24 Months of the Effective Date of the Permit	YES	Except for Atlantis, Haverhill and Lantana
City of Belle Glade	6) Implement the City of Belle Glade Development Code drainage specifications for new developments and significant redevelopments.	Within 12 Months of the Effective Date of the Permit	YES	
City of Boynton Beach	7) Implement the requirements of the City of Boynton Beach Comprehensive Plan Ordinance 89-38, dated November 7, 1989 which implements and enforces controls to reduce the discharge of pollutants from new development and significant redevelopment areas to municipal separate storm sewer systems.	Within 12 Months of the Effective Date of the Permit	YES	
Town of Cloud Lake	8) Continue to implement the Comprehensive Plan Infrastructure Element as detailed in Attachment I of the Part 2 Permit Application.	Effective Date of the Permit	YES	
	9) Continue to implement Ordinances No. 86, 89 and 91 from the Town of Cloud Lake's Land Development Regulations Manual which help regulate storm water runoff quantity and quality.  Provide a copy of the 5-year Evaluation and Appraisal Report.	Provide in first ANNUAL REPORT	YES	

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>2. Control of Discharges from Areas of New Development and Significant Redevelopment.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>
City of Delray Beach	10) Continue to implement the City of Delray Beach's adopted land development Regulations (as detailed in the Part 2 permit application) which addresses storm water management and drainage requirements for new developments and significant redevelopments.	Within 6 Months of the Effective Date of the Permit	YES	
City of Greenacres	11) Continue to implement Section 26-46, Drainage, of the City of Greenacres Code that requires storm water from developments to be managed in accordance with the requirements of the LWDD.	Effective Date of the Permit	YES	
Town of Highland Beach	12) Summarize the basin studies completed for areas of new development or significant redevelopment which discharge to the Town of Highland Beach MS4 during the permit year and the resulting course of action.	Provide update in each ANNUAL REPORT	NO	
	13) Implement the conditions of the Town's Code of Ordinances (Chapter 20 - Planning and Development, Chapter 6 - Building Permits, and Chapter 30 - Zoning) of the Town's Code of Ordinances which regulate the development within the Town's municipal boundaries.  Implement The Town's Code of Ordinances, specifically Chapters 5 and 6, which provide for the enforcement of proper controls for the control of storm water discharges during construction of areas from new development or significant redevelopment which discharge to the Town of Highland Beach MS4.  Implement the Town's Code of Ordinances, specifically Chapter 1 - General Provisions (specifically Section 1-9 - General Penalties) and Chapter 6 - Buildings and Structures of the Town's Code of Ordinances.	Within 24 Months of the Effective Date of the Permit	YES	
Town of Juno Beach	14) Employ the criteria for surface water management as detailed in Ordinance Nos. 399 and 412 included with the Town of Juno Beach Part 1 Permit Application for areas of new development or significant redevelopment which discharge to the Town of Juno Beach MS4.	Within 12 Months of the Effective Date of the Permit	YES	

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>2. Control of Discharges from Areas of New Development and Significant Redevelopment.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>
Town of Jupiter	15) Continue to implement the Town's Comprehensive Plan for areas of new development.	Effective Date of the Permit	YES	
Town of Lake Clarke Shores	16) Continue to implement the Town of Lake Clarke Shores Flood Damage Prevention and Storm Water Management Ordinance (Ordinance No. 281) which enumerates criteria for the design and maintenance of facilities within the Town.	Effective Date of the Permit	YES	
Town of Lake Park	17) Implement the basic drainage policy of the Town of Lake Park's Comprehensive Land Use Plan.  Implement the Town's Land Development Regulations which require all development and redevelopment to provide adequate storm water drainage.	Within 36 Months of the Effective Date of the Permit	YES	
City of Lake Worth	18) Implement the City of Lake Worth's Comprehensive Plan and Code of Ordinances (as detailed in the Part 2 Permit Application) which establishes the level of service or performance standards for new developments and substantial redevelopments.	Within 36 Months of the Effective Date of the Permit	YES	
Town of Manalapan	19) Continue to implement the Land Development Code and the Code of Ordinances of the Town of Manalapan Chapter 14, Section 14.29, Ordinance No. 145, "Flood Damage Prevention Ordinance", and Ordinance No. 135, "Creating a Code Enforcement Board" which provides for enforcement procedures.	Effective Date of the Permit	YES	
Town of Mangonia Park	20) Continue to employ the Town of Mangonia Comprehensive Plan (as detailed in Exhibit 1 of the Part 2 Permit Application) which states the development regulations and permit procedures within the Town.	Effective Date of the Permit	YES	
Village of North Palm Beach	21) Implement the local storm water ordinance (rev. 1-14-93) as detailed in the Appendix of the Village of North Palm Beach Part 2 Permit Application.	Within 12 Months of the Effective Date of the Permit	YES	
Town of Ocean Ridge	22) Implement the Town's Code of Ordinances (April 1993) which describes the Town's control of discharges from areas of new development and significant redevelopment.	Within 12 Months of the Effective Date of the Permit	NO	No areas of new or redevelopment this year.

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>2. Control of Discharges from Areas of New Development and Significant Redevelopment.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>
Town of Palm Beach	23) Continue to implement the Town of Palm Beach Code of Ordinances (Chapter 11.5, Article V Storm Water Management, and Article VI - Soil Erosion, Sediment Control and Fugitive Dust) which describe the Town's provisions for storm water management and erosion control on improvement projects.	Effective Date of the Permit	YES	
City of Palm Beach Gardens	24) Continue to implement the City of Palm Beach Gardens Land Development Regulations which address drainage storm water management and specifies design guidelines and performance standards for new developments and redevelopments.  Continue to implement the enforcement policy entitled "Chapter 101, Use of the Storm Water System".	Effective Date of the Permit	YES	
Town of Palm Beach Shores	25) Implement the Town of Palm Beach Shores Ordinance for new developments and significant redevelopment.	Within 36 Months of the Effective Date of the Permit	NO	
City of Riviera Beach	26) Continue to implement the City of Riviera Beach Comprehensive Drainage Element which requires that new developments meet storm water quality standards.	Effective Date of the Permit	YES	
Village of Royal Palm Beach	27) Implement the Village of Royal Palm Beach's Comprehensive Land Use Plan and Code Ordinances for storm water discharges to the Village of Royal Palm Beach MS4 associated with new developments and significant redevelopments.	Within 36 Months of the Effective Date of the Permit	YES	
Village of Tequesta	28) Continue to implement the Village Code of Ordinance regarding the control of discharges from areas of new development and significant redevelopment.	Effective Date of the Permit	YES	
City of West Palm Beach	29) Implement the City's storm water compliance standards for new developments and significant redevelopments.	Within 36 Months of the Effective Date of the Permit	NO	

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>2. Control of Discharges from Areas of New Development and Significant Redevelopment.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>
Village of Wellington	30) Continue to implement the elements of Palm Beach County's Comprehensive Plan, Drainage Sub-Element that pertain to Village of Wellington's development and significant redevelopment of areas under construction.	Effective Date of the Permit	YES	Village developing its own Comprehensive Plan.
FDOT	31) Employ new FDOT Drainage Connection Permit requirements which include a "certification of water quality" to be provided by the connecting entity.	Within 24 Months of the Effective Date of the Permit	YES	

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>3. Operation and Maintenance of Public Streets, Roads, and Highways.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>
ALL except FDOT	32) Implement the street maintenance program, described within the SWMP of the Part 2 application, within each permittee's jurisdictional area, discharging to the MS4s, and properly dispose of the collected material.  If none exist, develop and implement a street maintenance program within each permittee's jurisdictional area, discharging to the MS4s, and properly dispose of the collected material.	Within 36 Months of the Effective Date of the Permit	NO	Complied with by Palm Springs, Jupiter, Delray Beach, Royal Palm Beach, Mangonia Park and Palm Beach County
	33) Implement the various municipal programs to reduce, to the MEP, the pollutants in storm water runoff and, where applicable, from municipally-owned or operated equipment yards & maintenance shops that support road maintenance activities.  If none exist, develop and implement a program to address storm water runoff from areas associated with road repair and, where applicable, from municipally-owned or operated equipment yards & maintenance shops that support road maintenance activities.	Within 36 Months of the Effective Date of the Permit	NO	
	34) Wherever conditions necessitate, perform maintenance on catch basins, grates, and other storm water structures and roadside ditches and properly dispose of accumulated sediments within jurisdictional areas.	Effective Date of the Permit	YES	
FDOT	35) Implement Litter Control Program for highways and streets within jurisdictional area and properly dispose of collected material.	Within 24 Months of the Effective Date of the Permit	YES	
	36) Provide a description of the practices employed to reduce, to the MEP, the pollutants in storm water runoff from areas associated with road repair and from FDOT equipment yards & maintenance shops that support road maintenance activities.	Provide in second ANNUAL REPORT	YES	
	37) Coordinate the "Adopt-A-Highway" program for local organizations to be identified with specific highway cleanup and beautification projects	Effective Date of the Permit	YES	
	38) Conduct annual routine inspections of each FDOT maintenance facility to verify that BMPs are operational. The FDOT NPDES Coordinator(s) or their representative shall perform this activity.	Within 24 Months of the Effective Date of the Permit	YES	

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>4. Ensuring Flood Control Projects Consider Water Quality Impacts.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>
City of Atlantis, City of Belle Glade, City of Boca Raton, City of Greenacres, Town of Gulf Stream, Town of Haverhill, Town of Jupiter, Town of Jupiter Inlet Colony, Town of Lake Clarke Shores, City of Lake Worth, Town of Lantana, Town of Manalapan, Village of North Palm Beach, Town of Ocean Ridge, City of Pahokee, Town of Palm Beach, Town of Palm Beach Shores, City of Riviera Beach, Village of Royal Palm Beach, City of South Bay, Town of South Palm Beach, Village of Tequesta, City of West Palm Beach, Palm Beach County, Village of Wellington, ITID, NPBCID, SIRWCD	39) a) Develop procedures to verify that flood management projects assess the impacts on the water quality of the receiving water.  b) For new flood control projects, adhere to the treatment performance standards set forth in the State Water Policy. In addition, comply with any additional or more stringent design requirements in local codes.  c) Provide, in the subsequent ANNUAL REPORT, a copy of the procedures and programs developed for incorporation into the permit.	Within 24 Months of the Effective Date of the Permit	NO	Complied with by Palm Springs, Jupiter, Delray Beach, Manalapan, Royal Palm Beach and Palm Beach County
City of Boynton Beach	40) Continue to implement the City of Boynton Beach's Comprehensive Plan, Ordinance #89-38, (as detailed in the Part 2 Permit Application) which addresses water quantity and water quality of flood control projects.	Effective Date of the Permit	YES	
Town of Cloud Lake	41) Continue to implement the Town of Cloud Lake's Land Development Regulations which are used as a standard to incorporate water quality components into future flood control projects.	Effective Date of the Permit	YES	
City of Delray Beach	42) Continue to implement criteria which address water quality for storm water management of flood drainage projects.	Effective Date of the Permit	YES	
Town of Highland Beach	43) Adhere to the Town's flood management practices as delineated under Chapter 20 of the Town's Code of Ordinances.	Within 12 Months of the Effective Date of the Permit	YES	
Town of Juno Beach	44) Implement the Town of Juno Beach's flood management plans which describe the water quality controls used in limiting tile town's flood management projects.	Within 36 Months of the Effective Date of the Permit	NO	

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>4. Ensuring Flood Control Projects Consider Water Quality Impacts.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>
Town of Lake Park	45) Continue to implement the Town of Lake Park's flood prevention ordinance.	Effective Date of the Permit	YES	Rewrite to include water quality.
Town of Mangonia Park	46) Provide a copy of the Town of Mangonia Park Floodplain Ordinance.	Provide in first ANNUAL REPORT	YES	
City of Palm Beach Gardens	47) Implement the water quality regulations to which all the City's future flood control projects must adhere.	Within 24 Months of the Effective Date of the Permit	NO	
Village of Palm Springs	48) Provide a copy of Ordinance 90-14 of the Village Land Development Code which verifies that flood management projects do not adversely affect the water quality of the receiving waters.	Provide in first ANNUAL REPORT	YES	
North Palm Beach Heights WCD	49) Continue to implement the North Palm Beach Heights Water Control District's water management system which provides flood protection and water quality for areas within the District's boundary.	Effective Date of the Permit	YES	

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>5. Identification, Monitoring and Control of Discharges from Municipal Waste Treatment, Storage or Disposal (TSD) Facilities not Covered by an NPDES Storm Water Permit.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>
Palm Beach County, City of Belle Glade, City of Boca Raton, City of Boynton Beach, City of Delray Beach, Town of Jupiter Inlet Colony, City of Lake Worth, City of Palm Beach Gardens, Village of Palm Springs, City of South Bay, Village of Tequesta, and City of West Palm Beach	50) Evaluate, through inspections and monitoring, the municipally-operated solid waste transfer stations and waste transportation fleet maintenance & storage yards to determine the necessary control measures and procedures to be implemented, in accordance with Part II.A.5.a. on page 17 of this permit.  The program employed shall identify these facilities, determine the necessary control measures and procedures to be employed at each, and provide an implementation schedule.  This requirement may be satisfied through cooperative efforts with Palm Beach County.	Within 24 Months of the Effective Date of the Permit	YES	Solid Waste Transfer Stations within Palm Beach County are not exposed to storm water.
	51) Provide a description of the permittee's program, performed within jurisdictional boundaries, to inspect, monitor and enforce the reduction of pollutants in runoff from municipally-operated solid waste transfer stations and waste transportation fleet maintenance & storage yards.	Provide in first ANNUAL REPORT	YES	Fleet Maintenance and storage yards addressed in Storm Water Management Program 3.
Palm Beach County	52) Provide a copy of the ground and surface water monitoring study performed by the Palm Beach County Solid Waste Authority	Provide in first ANNUAL REPORT	YES	N/A. Refer to Appendix A.

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>6. Control of Pollutants Related to Application of Pesticides, Herbicides and Fertilizers.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>
Palm Beach County, City of Boca Raton, City of Boynton Beach, City of Delray Beach, City of Greenacres, Town of Highland Beach, Town of Juno Beach, Town of Jupiter, Town of Lake Park, City of Lake Worth, Town of Manalapan, Village of North Palm Beach, City of Palm Beach Gardens, Village of Palm Springs, City of Riviera Beach, Village of Royal Palm Beach, City of South Bay, Town of South Palm Beach, Village of Tequesta, City of West Palm Beach, Village of Wellington	52) Provide for annual seminars, training sessions, and/or on-the-job supervision for municipal applicators to emphasize the storm water implications of pesticide and herbicide applications.  The educational basis should include procedures to determine the most effective application, storage, and mixture methods and minimum application rates of pesticides and herbicides.	Within 24 Months of the Effective Date of the Permit	YES	Except for South Bay
Palm Beach County	54) Provide a copy of the public education program to encourage the public to reduce the use of pesticides, herbicides and fertilizers	Provide in first ANNUAL REPORT	YES	Conducted by Palm Beach County Solid Waste Authority
ALL	55) Require evidence of proper certification of all applicators contracted by the municipality to apply pesticides and herbicides on municipal and FDOT property.	Effective Date of the Permit	YES	
FDOT	56) Continue to implement the program, described in FDOT Statewide SWMP, to reduce to the MEP, the contribution of pollutants associated with pesticides, herbicides, and fertilizers to the FDOT MS4.	Effective Date of the Permit	YES	

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>7.a.) Illicit Discharges and Improper Disposal - Inspections, Ordinances, and Enforcement Measures.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>
ALL except FDOT	57) Identify those of the non-storm water discharges listed under Part II.7.a. on pages <u>17</u> and <u>18</u> of the permit which will be allowed to be discharged to the MS4. Describe conditions, if any, to be placed on allowable non-storm water discharges. Provide EPA a copy of this identification.	Provide in first ANNUAL REPORT	YES	
ALL except Indian Trail Improvement District, NPBHWCD, NPBCID, FDOT and SIRWCD	58) Implement municipal inspection programs to prohibit illicit connections and illegal dumping into the MS4 within each municipality's jurisdictional area.  Maintain a log documenting inspections and enforcement actions performed and provide a summary of these records in each ANNUAL REPORT.	Effective Date of the Permit	YES	Except for Town of Jupiter and Highland Beach
	If none exist, develop and implement an inspection program to prohibit illicit connections and illegal dumping into the MS4 within each municipality's jurisdictional area.  Provide copy of developed program in subsequent ANNUAL REPORT.	Within 36 Months of the Effective Date of the Permit	NO	
FDOT	59) Develop a program to inspect drainage connections to the FDOT MS4 after project completion to verify continued compliance with drainage connection permit requirements and to verify that no illicit or non-permitted connections have been made. In cases where another regulatory agency requires a periodic certification of compliance, the program developed may allow FDOT to accept this certification of compliance in lieu of further inspections by FDOT.	Within 24 Months of the Effective Date of the Permit	NO	
	60) After development, include a description of the inspection program in the subsequent ANNUAL REPORT for incorporation into the permit.	Provide in subsequent ANNUAL REPORT	NO	
	61) Implement developed program to inspect drainage connections to the FDOT MS4 after project completion. Maintain an internal log documenting inspections and enforcement actions performed.	Within 36 Months of the Effective Date of the Permit	NO	

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>7.a.) Illicit Discharges and Improper Disposal - Inspections, Ordinances, and Enforcement Measures.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>
	62) Provide a summary of these records in each subsequent ANNUAL REPORT.	Provide in subsequent ANNUAL REPORT	NO	
ALL except ITID, NPBHWCD, NPBCID, FDOT and SIRWCD	63) Provide a copy of the municipal ordinance/code/program which specifically addresses the prohibition of illicit storm water connections and illegal dumping into the MS4.	Provide in first ANNUAL REPORT	YES	

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>7.b.) Illicit Discharges and Improper Disposal - Field Screening</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>
ALL	64) Conduct field screening of the MS4s, within each permittee's jurisdictional area, for illicit discharges and improper disposal.	At least 1/3 of All Outfalls Screened in Permit Years Three, Four and Five with Entire MS4 Screened Once/5 Years	YES	
	65) Collect inventory information on outfalls and on portions of the MS4, within each permittee's jurisdictional area, not mapped and update municipal mapping data on an ongoing basis.  Maintain an internal log documenting the results of all field screening performed.		YES	

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>7.c.) Illicit Discharges and Improper Disposal - Investigation of Suspected Illicits and/or Improper Disposal.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>7.c.) Illicit Discharges and Improper Disposal - Investigation of Suspected Illicits and/or Improper Disposal.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>
City of Atlantis, City of Boca Raton, City of Boynton Beach, Town of Cloud Lake, City of Delray Beach, City of Greenacres, Town of Highland Beach, Town of Juno Beach, Town of Jupiter, City of Lake Worth, Town of Lantana, Town of Mangonia Park, Town of Palm Beach, City of Palm Beach Gardens, Village of Palm Springs, City of Riviera Beach, Village of Royal Palm Beach, City of South Bay, Village of Tequesta, City of West Palm Beach, Indian Trail Improvement District, NPBCID, and SIRWCD	66) Continue to implement the standard investigative programs, described in the SWMP in the Part 2 application, to identify and terminate any source(s) of illicit connections or discharges to the MS4, within each permittee's jurisdictional area.	Within 30 Months of the Effective Date of the Permit	NO	
City of Belle Glade, Town of Gulf Stream, Town of Jupiter Inlet Colony, Town of Lake Clarke Shores, Town of Lake Park, Village of North Palm Beach, City of Pahokee, Town of Palm Beach Shores, Town of South Palm Beach, Village of Wellington, NPBHWCD and FDOT	67) Develop investigative procedures to identify and terminate any source(s) of illicit connections or discharges to the MS4.  These procedures shall include notification to FDEP and EPA of illicit connections.	Within 36 Months of the Effective Date of the Permit	NO	
	68) After development, include a summary of the investigative procedures.	Provide in subsequent ANNUAL REPORT	NO	
	69) Implement the investigative procedures developed to identify and terminate any source(s) of illicit connections or discharges to the MS4.	Within 36 Months of the Effective Date of the Permit	NO	

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>7.d.) Illicit Discharges and Improper Disposal - Spill Prevention and Response.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>

ALL except FDOT	70) Provide for the training of appropriate personnel in spill prevention and response procedures and in techniques to mitigate pollutant discharges from spills to the MS4 and surface waters, within each permittee's jurisdictional area.  Personnel shall be trained to recognize and quickly assess the nature of spills and to promptly report all spills to the appropriate authority.	Within 24 Months of the Effective Date of the Permit	YES	Provided by local fire departments.
	71) For hazardous spills, the municipality shall follow the notification and containment procedures as described in Section 6.2.1 of the General Volume of the Part 2 Permit Application.	Effective Date of the Permit	YES	
FDOT	72) Continue to implement the FDOT's <i>Procedures for Reporting Emergencies and Management of Damage Repair</i> which effectively mitigate potential pollutant discharges to surface waters.  Provide a copy of the applicable portions of these documents for incorporation into the permit.	Effective Date of the Permit	YES	

<b>STORM WATER MANAGEMENT PROGRAM:</b> <i>7.e.) Illicit Discharges and Improper Disposal - Public Notification.</i>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>
City of Belle Glade, Town of Gulf Stream, Town of Haverhill, Town of Juno Beach, Town of Jupiter Inlet Colony, Town of Lake Clarke Shores, Town of Lake Park, Town of Manalapan, Town of Mangonia Park, Village of North Palm Beach, Town of Palm Beach, City of Palm Beach Gardens, Town of Palm Beach Shores, Town of South Palm Beach, ITID	73) Develop a program to promote, publicize, and facilitate public reporting of the presence of illicit discharges and improper disposal of materials into the MS4s.  The program should inform the public what to look out for, how to report incidents, and the problems associated with illicit discharges and improper dumping.  The requirement may be satisfied through cooperative efforts with other permittees. After development, include a summary of the public program in the subsequent ANNUAL REPORT.	Within 24 Months of the Effective Date of the Permit	YES	Palm Beach County Solid Waste Authority has a program in place.
Palm Beach County, City of Atlantis, City of Boca Raton, City of Boynton Beach, Town of Cloud Lake, City of Delray Beach, City of Greenacres, City of Lake Worth, Town of Lantana, Town of Highland Beach, Town of Jupiter, Town of Ocean Ridge, City of Pahokee, City of Riviera Beach, Village of Royal Palm Beach, City of South Palm Beach, Village of Tequesta, City of West Palm Beach, Village of Wellington, NPBHWC, and SIPWCD	74) Continue to implement the public awareness & reporting program, as described in the SWMP within the Part 2 Permit Application.	Effective Date of the Permit	YES	

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>7.e.) Illicit Discharges and Improper Disposal - Public Notification.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>
	75) Maintain a citizen complaint log documenting all reports of illicit discharges and what actions were taken to investigate and resolve the problem.  Include a summary of this log in each ANNUAL REPORT.	Effective Date of the Permit	YES	
Village of Palm Springs and NPBCID	76) Provide a copy of the program utilized, within the municipal jurisdiction, to inform the public about what to look for and how to report incidents associated with illicit connections or discharges to the MS4.	Provide in first ANNUAL REPORT	YES	
FDOT	77) Maintain a citizen complaint log documenting all reports of illicit discharges and what actions were taken to investigate and resolve the problem.  Include a summary of this log in each ANNUAL REPORT.	Within 24 Months of the Effective Date of the Permit	YES	
	78) Establish a direct dial local telephone number at the District Office to be used for the reporting of illicit connections, accidental spills, illegal dumping, or other water quality violations to the District NPDES Coordinator for investigation and action as needed.  This requirement may be satisfied through cooperative efforts with other permittees.	Within 36 Months of the Effective Date of the Permit	YES	

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>7.f.) Illicit Discharges and Improper Disposal - Oils, Toxics and Household Hazardous Waste Control.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>



<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>7.g.) Illicit Discharges and Improper Disposal - Limitation of Sanitary Sewer Seepage.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>
PERMITTEES SERVED BY SANITARY SEWER SYSTEMS	82) Advise appropriate utility owner, County and/or State Agency of violation if constituents common to wastewater contamination are discovered in the MS4s during dry weather field screening.	Effective Date of the Permit	YES	
Palm Beach County, City of Atlantis, City of Belle Glade, City of Boca Raton, City of Boynton Beach, City of Delray Beach, City of Lake Worth, Town of Lantana, Town of Mangonia Park, Village of North Palm Beach, City of Pahokee, Town of Palm Beach, City of Palm Beach Gardens, Village of Palm Springs, City of Riviera Beach, City of South Bay, City of West Palm Beach, Village of Wellington	83) Implement the program, as described in the SWMP within the Part 2 Permit Application, for investigating leaks in the sanitary sewer systems owned or operated by the permittee(s).	Effective Date of the Permit	YES	
Northern Palm Beach County Improvement District	84) Monitor the surface water management facilities and provide prompt corrective action to problems of sanitary seepage into the NPBCID MS4.	Within 24 Months of the Effective Date of the Permit	YES	
Town of Juno Beach, Town of Lake Park, NPBHWCD	85) Notify the Seacoast Utility Authority or ENCON that they are required to promptly respond to problems and malfunctions (including leakage) of sanitary collection systems from their sanitary sewer systems located within the municipal boundaries to the MS4.	Effective Date of the Permit	NO	Complied with by Juno Beach
Town of Jupiter, Village of Tequesta and SIRWCD	86) Monitor the surface water management facilities for infiltration problems resulting from sanitary seepage into the MS4.  Notify the Loxahatchee River Environmental Control District (ENCON) of any problems and malfunctions (including leakage) of the sanitary collection systems and verify that prompt corrective action is taken.	Within 24 Months of the Effective Date of the Permit	NO	

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>8.a.) Industrial and High Risk Runoff - Identification of priorities and procedures for inspections.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>
City of Boynton Beach, City of Delray Beach, City of Lake Worth, Village of Palm Springs, City of Riviera Beach, Village of Royal Palm Beach, City of West Palm Beach and NPBCID	87) Inventory and prioritize all existing high risk facilities discharging into the MS4.  High risk facilities shall include municipal landfills, hazardous waste treatment, storage, disposal and recovery facilities, facilities that have reported under the requirements of EPCRA Title III, Section 313, private and municipal waste handling facilities and any other industrial or commercial discharge which the permittee determines is contributing a substantial pollutant loading to the MS4.  This inventory shall identify the outfall and surface water body into which each high risk facility drains.	Within 24 Months of the Effective Date of the Permit	NO	
	88) For the high risk facilities Identified, develop procedures for inspections.  Provide a description of the procedures developed in the subsequent ANNUAL REPORT	Within 36 Months of the Effective Date of the Permit	NO	
FDOT	89) Develop procedures for the inspection of high risk facilities which hold FDOT drainage connection permits to verify compliance with FDOT Drainage permit requirements. In cases where another regulatory agency requires a periodic certification of compliance, the program developed may allow FDOT to accept this certification of compliance in lieu of further inspections by FDOT.  After development, include a summary of the procedures & inspection schedule in the subsequent ANNUAL REPORT for incorporation into the permit.	Within 24 Months of the Effective Date of the Permit	NO	

**STORM WATER MANAGEMENT PROGRAM:**

**8.a.) Industrial and High Risk Runoff - Identification of priorities and procedures for inspections.**

PERMITTEE(S)	ACTIVITY	DATE DUE/ FREQUENCY	COMPLETED	COMMENTS
City of Boynton Beach, City of Delray Beach, City of Lake Worth, Village of Palm Springs, City of Riviera Beach, Village of Royal Palm Beach, City of West Palm Beach, NPBCID and FDOT	<p>90) Begin performing inspections of identified high risk facilities, implementing procedures to determine if they are in compliance with all appropriate aspects of the storm water program (e.g. no illicit connections; compliance with local storm water regulation requirements; and if the facility is required to have NPDES permit coverage, a copy of the NPDES storm water pollution prevention plan on site).</p> <p>Maintain a list of all industrial storm water sources discharging to the MS4 and include an update in each ANNUAL REPORT of any additionally identified industrial facilities not previously listed.</p> <p>Maintain a log documenting the results of the inspections performed.</p>	Within 36 Months of the Effective Date of the Permit	NO	

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>8.b.) Industrial and High Risk Runoff - Monitoring for High Risk Industries.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>
City of Boynton Beach and City of Delray Beach	91) Develop and Implement a monitoring program for high risk industrial facilities.  Provide, in the subsequent ANNUAL REPORT, a summary of the municipal storm water monitoring program developed for high risk industrial facilities which discharge into the MS4.	Within 24 Months of the Effective Date of the Permit	NO	
City of Lake Worth, Village of Palm Springs, Village of Royal Palm Beach, and NPBCID	92) Provide a summary of the municipal storm water monitoring program for high risk industrial facilities which discharge into the MS4.	Provide in second ANNUAL REPORT	NO	
NPBCID	93) Provide a summary of the surface water monitoring study of the closed landfill.	Provide in first ANNUAL REPORT	YES	
FDOT	94) Develop a monitoring program which addresses the water quality standards included in the FDOT permitting process for those high risk industrial facilities which hold FDOT drainage connection permits. Include a description of the specific enforcement steps to be taken to require compliance with permit conditions if violations are identified.  After development, Include a summary of the monitoring program in the subsequent ANNUAL REPORT for incorporation into the permit.  Begin implementing the monitoring program for high risk industrial facilities.	Within 24 Months of the Effective Date of the Permit  Within 36 Months of the Effective Date of the Permit	NO	

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>9.a.) Construction Site Runoff - Site Planning &amp; Structural and Non-structural Controls.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>
ALL	95) New storm water management systems operated by the permittee(s) shall adhere to the treatment performance standards set forth in the State Water Policy.	Effective Date of the Permit	YES	
Palm Beach County	96) Continue to implement the Municipal and Land Development Codes which require construction site planning approval and the structural and non-structural controls during construction to reduce pollutants to the receiving stream.	Effective Date of the Permit	YES	
City of Atlantis	97) Continue to implement Section 10-44 of the City Code which addresses erosion controls during construction.  Continue to implement storm water management regulations for storm water quality for construction site activities.	Effective Date of the Permit	YES	
City of Belle Glade	98) Continue to implement Section 25 of the City of Belle Glade Ordinance which outlines the regulations and procedures developers must adhere to before and during construction activities.	Effective Date of the Permit	YES	
City of Boca Raton	99) Employ the comprehensive site planning process as described in the City of Boca Raton's Part 2 Permit Application.  Continue to implement Chapter 20 of the City Code of Ordinances which regulates all land alterations within the City of Boca Raton.	Effective Date of the Permit	YES	
City of Boynton Beach	100) Continue to implement the City water quality and quantity drainage standards as detailed in Chapter 4, Section 7.6.1 of the Permit Part 2 Application.  Continue to implement the City Ordinance as described in Chapter 5, Section 146 of the Permit Part 2 Application which addresses erosion control during construction.	Effective Date of the Permit	YES	

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>9.a.) Construction Site Runoff - Site Planning &amp; Structural and Non-structural Controls.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>
Town of Cloud Lake	101) Continue to implement the Town's site planning review process as described in the Town of Cloud Lake, Florida Comprehensive Zoning Ordinance (Ordinance No. 74 - Section II).  Continue to implement Town Ordinance No. 91 which addresses erosion and sedimentation. (Describe the non-structural and structural controls that are constructed to reduce pollutants to receiving waters.)	Effective Date of the Permit	YES	
City of Delray Beach	102) Employ the comprehensive development review and approval process of the Technical Advisory Committee which require construction site planning approval during construction to reduce pollutants to receiving waters.  Continue to implement and enforce the erosion and sediment control plan as described in the Part 2 Permit Application which require structural and non-structural controls to reduce pollutants to receiving waters.	Effective Date of the Permit	YES	
City of Greenacres	103) Continue to regulate storm water quality for construction site planning and during construction activities.  Continue to implement the structural and non-structural controls as described in the Part 2 Permit Application erosion and sediment control.	Effective Date of the Permit	YES	
Town of Gulf Stream	104) Continue to implement the storm water management water quality requirements.  Continue to implement Ordinance 91/4 which provides drainage requirements for building permits.	Effective Date of the Permit	YES	

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>9.a.) Construction Site Runoff - Site Planning &amp; Structural and Non-structural Controls.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>
Town of Haverhill	<p>105) Continue to implement Town Ordinance No. 228 which requires the developer to address erosion and water quality impacts of construction activities during the conceptual stage, final design phase, and during the actual development of the project.</p> <p>Continue to implement the Town Ordinance No. 228, which provides erosion and sedimentation criteria.</p> <p>Continue to implement the Town's storm water ordinance which addresses structural and non-structural erosion controls during construction.</p>	Effective Date of the Permit	YES	
Town of Highland Beach	<p>106) Continue to implement Chapter 30, Section 8 of the Town's Code of Ordinances, which specifies the procedure for site plan approvals and addresses water quality impacts as part of the development approval process.</p> <p>Continue to implement the Town's new ordinance chapter which pertains to storm water discharges.</p> <p>Continue to implement Chapters 6, 26, and 30 of the Town's Code of Ordinances which address non-structural and structural best management practices.</p>	Effective Date of the Permit	YES	
Town of Juno Beach	107) Implement the Town's ordinance which addresses erosion and water quality impacts of sites during the planning phase, construction stage and final design.	Effective Date of the Permit	NO	
Town of Jupiter	108) Continue to regulate storm water quality for construction site planning and during construction activities.	Effective Date of the Permit	YES	
Town of Jupiter Inlet Colony	109) Continue to adhere to the criteria used to regulate storm water quality for construction site planning and during construction activities.	Effective Date of the Permit	YES	

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>9.a.) Construction Site Runoff - Site Planning &amp; Structural and Non-structural Controls.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>
Town of Lake Clarke Shores	110) Continue to implement the Town Ordinance No. 281 which requires any construction activity to address erosion control and water quality impacts during the planning phase, construction stage and final design.	Effective Date of the Permit	YES	
Town of Lake Park	111) Continue to implement the Town of Lake Park Land Development Regulations regarding storm water drainage.  Continue to implement the Town's Ordinance No. 7, Section 33-1 32(b)(7), which addresses erosion and sedimentation control.	Effective Date of the Permit	YES	
City of Lake Worth	112) Continue to implement Ordinance No. 93-5 which provides for the control of storm water pollution.  Continue to implement the site planning and drainage plan requirements as described in Exhibit B of the Part 2 Permit Application.	Effective Date of the Permit	YES	
Town of Lantana	113) Continue to regulate storm water quality for construction site planning and during construction activities.	Effective Date of the Permit	YES	
Town of Manalapan	114) Continue to implement the Manalapan Code which requires construction site planning approval to provide adequate water quality.  Continue to implement the Town Code Chapter 14, Section 14.29 which describes the requirements for adequate construction erosion control.	Effective Date of the Permit	YES	
Town of Mangonia Park	115) Continue to implement the basic infrastructure site plan approval process as described in the Part 2 Permit Application.	Effective Date of the Permit	YES	

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>9.a.) Construction Site Runoff - Site Planning &amp; Structural and Non-structural Controls.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>
Village of North Palm Beach	116) Continue to implement the code requirements that must be approved by the Village Staff and Council prior to implementing storm drainage plans and storm water facilities.  Continue to implement Chapter 4.0 of the Palm Beach County 208 Area-wide Waste Treatment Management Plan which imposes best management practices for construction site runoff.	Effective Date of the Permit	YES	
Town of Ocean Ridge	117) Continue to implement the Town Code, Section 26-59(6), which state the erosion control measures for construction activities.  Continue to implement the Town ordinances that require Best Management Practices for storm water quality.	Effective Date of the Permit	YES	
City of Pahokee	118) Continue to implement the city's site development regulations, procedures and standards for reducing pollutants to receiving waters during construction activities.  Continue to implement the adopted city ordinance that controls storm water drainage.	Effective Date of the Permit	YES	
Town of Palm Beach	119) Continue to implement Section II, Articles V and VI, of the Town's Code of Ordinances which discuss site planning and structural and non-structural controls during construction activities to reduce pollutants to receiving waters.	Effective Date of the Permit	YES	
City of Palm Beach Gardens	120) Continue to implement the City's Land Development Regulations as described in the Part 2 Permit Application.  Continue to implement the Storm Water Management Plan and Drainage Plan described in the Part 2 Permit Application which describe the necessary requirements prior to and during construction.	Effective Date of the Permit	YES	
Town of Palm Beach Shores	121) Continue to regulate storm water quality for construction site planning and during construction activities.	Effective Date of the Permit	YES	

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>9.a.) Construction Site Runoff - Site Planning &amp; Structural and Non-structural Controls.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>
Village of Palm Springs	122) Implement Policy E.1 of the Land Use Element of the Comprehensive Development Plan for the Village of Palm Springs which states that the developer of any site (except for single family residences) shall be responsible for the on-site management of storm water runoff at the time of development or redevelopment in such a manner that post-development runoff rates, volumes and pollutant loads are the same as pre-development conditions.	Within 12 Months of the Effective Date of the Permit	YES	
City of Riviera Beach	123) Adhere to the water quality criteria needed prior to new development construction approval.  Continue to implement the City Land Development Code which requires non-structural and structural controls during construction to reduce pollutants to receiving waters.	Effective Date of the Permit	YES	
Village of Royal Palm Beach	124) Continue to implement the Village codes and ordinances required prior to site planning and construction activities.	Effective Date of the Permit	YES	
City of South Bay	125) Develop rules regarding water quality impacts associated with construction activity.  Adopt ordinances to regulate storm water quality.  Develop or adopt ordinances regarding erosion control on construction sites.	Within 24 Months of the Effective Date of the Permit	YES	
Town of South Palm Beach	126) Continue to implement the town's site development regulations, procedures and standards for reducing pollutants to receiving waters during construction activities.	Effective Date of the Permit	YES	
Village of Tequesta	127) Continue to regulate storm water quality for construction site planning and during construction activities.	Effective Date of the Permit	YES	
City of West Palm Beach	128) Verify that all site plans meet the requirements of the Treasure Coast Regional Planning Council.	Effective Date of the Permit	YES	

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>9.a.) Construction Site Runoff - Site Planning &amp; Structural and Non-structural Controls.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>
Village of Wellington	129) Continue to implement the site planning approval process for residential and commercial development as outlined in Palm Beach County's Comprehensive Plan.	Effective Date of the Permit	YES	Village developing its own Comprehensive Plan.
South Indian River Water Control District	130) Continue to implement the SIRWCD's updated Policies and Procedures Manual which addresses non-structural and structural controls during construction activities.	Effective Date of the Permit	YES	
FDOT	131) As per the FDOT Statewide SWMP, employ new FDOT Drainage Connection Permit conditions which require connecting entities subject to the NPDES storm water regulations to submit a copy of their NPDES Storm Water Pollution Prevention Plan to FDOT.	Effective Date of the Permit	NO	FDOT SWP modified; no longer required.

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>9.b.) Construction Site Runoff - Inspection and Enforcement.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>
ALL except FDOT, City of Belle Glade, City of Riviera Beach and Town of South Palm Beach	132) Implement the inspection program, described in the SWMP within the Part 2 Application, at construction sites where runoff discharges to the MS4, to maintain compliance with local storm water ordinances and codes.  Maintain an internal log documenting the inspections conducted.	Within 36 Months of the Effective Date of the Permit	NO	
City of Belle Glade, City of Riviera Beach and Town of South Palm Beach	133) Develop an inspection program for construction sites where runoff discharges to the MS4, to verify compliance with local storm water ordinances and codes.  The program shall include adequate staff, systematic inspection procedures, and proper enforcement mechanisms.  After development, provide a summary of the inspection program for incorporation into the permit.	Within 24 Months of the Effective Date of the Permit  Provide in subsequent ANNUAL REPORT	NO	

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>9.b.) Construction Site Runoff - Inspection and Enforcement.</b>				
	134) Implement the inspection program developed. Maintain an internal log documenting the inspections conducted.	Within 36 Months of the Effective Date of the Permit	NO	
ALL except FDOT	135) Develop and utilize a formalized inspection checklist covering current storm water management and water quality inspection items in order to standardize the inspection process.	Within 24 Months of the Effective Date of the Permit	NO	
	136) Include verifying that construction sites, within each permittee's jurisdictional area, subject to the NPDES Storm Water Regulations have a Storm Water Pollution Prevention Plan on site at all times.	Annual Requirement	NO	To be included in next year's program
	Include developed checklist in the subsequent ANNUAL REPORT.	Provide in subsequent ANNUAL REPORT	NO	
FDOT	137) Develop a program to inspect construction projects which have been granted an FDOT drainage connection permit to directly discharge storm water into the FDOT MS4 for compliance with FDOT permit conditions.	Within 24 Months of the Effective Date of the Permit	NO	
	138) Implement the program developed to inspect construction projects that propose to directly discharge storm water to the FDOT MS4 for compliance with FDOT permit conditions.  Require connection entities, who are found or suspected of discharging storm water of unacceptable quality during or following construction, to sample and test the discharge to prove compliance with FDOT permit conditions.	Within 36 Months of the Effective Date of the Permit	NO	

<b>STORM WATER MANAGEMENT PROGRAM:</b>				
<b>9.c.) Construction Site Runoff - Site Operator Training.</b>				
<b>PERMITTEE(S)</b>	<b>ACTIVITY</b>	<b>DATE DUE/ FREQUENCY</b>	<b>COMPLETED</b>	<b>COMMENTS</b>
ALL except FDOT	139) Develop and implement a procedure to notify building permit applicants, in developments subject to the storm water regulations, of their application responsibilities under the NPDES permitting program for construction site runoff.	Within 24 Months of the Effective Date of the Permit	NO	
	140) After development, include a summary of the procedures.	Provide in subsequent ANNUAL REPORT	NO	
ALL	141) Develop a program to require that all permittee employees directly engaged in either construction activities and site operations on behalf of the permittee, or, the inspection of construction sites not operated by the permittee at construction sites, which discharge to the permittee's MS4 are trained on proper storm water management and erosion & sediment control BMPs for construction sites and on the enforcement protocol to facilitate compliance.	Within 30 Months of the Effective Date of the Permit	NO	Florida Department of Environmental Protection is developing a program for inspectors
	142) Implement the developed program.  Include summary of developed program in subsequent ANNUAL REPORT.	Within 36 Months of the Effective Date of the Permit	NO	
	143) Provide the description of any currently implemented curriculum and/or certification program(s) for persons directly engaged in construction activities at construction sites which discharge to the permittee's MS4.	Provide in first ANNUAL REPORT	NO	Florida Department of Environmental Protection is developing a program for contractors

## **Section 4 – Narrative Report**

### ***4.1 Maintenance of Structural Controls***

The NPDES permit defines structural controls as any stormwater device used to control stormwater flow to meet water quality or flood protection criteria. These facilities include weirs, bleeders, gates, pump stations, spillways, levees, dikes, exfiltration trenches, retention/detention basins and ponds. The co-permittees' inventory of structural controls identified in Table II.A.1.a. of the NPDES Permit No. FLS000018 is divided into five categories: Ponds (retention/detention areas), wetlands, control structures, pump stations and exfiltration trenches. Attached is a revised Table II.A.1.a. with updated information on the structural controls for the co-permittees. Generally, the co-permittees inspect their structural control facilities routinely and perform maintenance as needed to ensure proper operation. Standardized inspection reports for these facilities were developed through the Steering Committee. Copies of these forms and a description of the maintenance activities are included in the co-permittees' annual reports.

### ***4.2 Development of Planning Procedures***

New developments and redevelopments within Palm Beach County must meet state and local requirements. Principal state programs include requirements from SFWMD, Florida Department of Community Affairs (FDCA) and FDEP. SFWMD regulates the construction and permitting of surface water management facilities. FDCA requires comprehensive plans for municipalities and public facility reports for special districts. These plans and reports require that drainage and stormwater quality be addressed. FDEP requires that these programs be consistent with state water policy. Additionally, in response to these state programs, local governments have implemented ordinances and have developed comprehensive plans to address development and redevelopment activities.

### ***4.3 Roadway Maintenance/Equipment Yards/Maintenance Shops***

The operation and maintenance of public streets, roads, highways and equipment yards require implementing stormwater management practices to reduce pollutant discharge to the maximum extent practicable. The co-permittees are in the process of developing stormwater management programs in these areas. Table 4-1 summarizes the current programs instituted by the various co-permittees. These programs include litter control, street sweeping for curb and gutter systems,

roadside swale restoration program, good housekeeping measures at the municipal maintenance

TABLE II.A.1.a.  
(revised June 22, 1998)

PERMITTEE/LABOR SOURCE(S)	STRUCTURAL CONTROL	TOTAL NO. MAINTAINED
PALM BEACH COUNTY Environmental Resources Management/ Engineering and Public Works Staff	Detention Ponds	36 units
	Control Structures	1 unit
CITY OF ATLANTIS Public Works Department and Country and Golf Club	Detention Ponds	21.2 acres
	Pump Stations	1 unit
CITY OF BOCA RATON Municipal Services and Utility Services	Control Structures	10 units
CITY OF BOYNTON BEACH Utilities, Parks and Public Works Department	Detention Ponds	1 acre
	Pump Stations	1 units
TOWN OF CLOUD LAKE Town's Building Official or Engineering Consultant	Detention Ponds	6.86 acres
	Pumps	1 unit
	Floodgates	1 unit
CITY OF DELRAY BEACH Department of Public Works/Utilities and Parks and Recreation	Pump Stations	7 units
	Retention/Detention Ponds	7.36 acres
CITY OF GREENACRES Public Works Department	Detention Ponds	8.8 acres
	Channel Control Structures	4 units
TOWN OF JUNO BEACH Public Works Department	Detention Ponds	12 acres
	Control Structures	1 unit
TOWN OF JUPITER Stormwater Utilities Department	Canals	1 mile
	Detention Ponds	8 acres
	Pump Stations	2 units
	Control Structures	40 units
TOWN OF JUPITER INLET COLONY Town Maintenance Staff	Dry Wells	5 units
CITY OF LAKE WORTH Public Works Department	Retention/Detention Ponds	4 units
TOWN OF MANGONIA PARK Public Works Department	Control Structures	1 unit
	Ex-Filtration Trenches	1,500 feet
	Detention Ponds	1 unit

PERMITTEE/LABOR SOURCE(S)	STRUCTURAL CONTROL	TOTAL NO. MAINTAINED
TOWN OF PALM BEACH Transportation Division and Water Pollution Control Division of Public Works		
	Pump Stations	10 units
CITY OF PALM BEACH GARDENS Department of Public Works		
	Detention Ponds	5.1 acres
	Control Structures	2 units
VILLAGE OF PALM SPRINGS Public Works And Annual Contractors		
	Detention Ponds	31.3 acres
CITY OF RIVIERA BEACH Department of Public Works		
	Control Structures	5 units
VILLAGE OF ROYAL PALM BEACH Public Works Department Maintenance and Operations		
	Detention Ponds	5 acres
	Control Structures	2 units
VILLAGE OF TEQUESTA Department of Public Works		
	Detention Ponds	12 acres
CITY OF WEST PALM BEACH Department Of Engineering And Public Works		
	Control Structures	6 units
	Pump Stations	2 units
	Detention Ponds	1 unit
VILLAGE OF WELLINGTON Public Works Department		
	Detention Ponds/Lakes	220 acres
	Control Structures	2 units
	Pump Stations	4 units
INDIAN TRAIL IMPROVEMENT DISTRICT ITID Staff and Contractors		
	Detention Ponds	840 acres
	Pump Stations	4 units
	Channel Control Structures	23 units
NORTH PALM BEACH HEIGHTS WATER CONTROL DISTRICT (NPBHWCD) NPBHWCD Contractors		
	Detention Pond	4.2 acres
NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT (NPBCID) NPBCID Staff and Contractors		
	Detention Ponds	1,460 acres
	Natural Wetland/Marshes	1,312 acres
	Control Structures	61 units
	Pump Stations	11 units
SOUTH INDIAN RIVER WATER CONTROL DISTRICT (SIRWCD) SIRWCD Staff and Contractors		
	Detention Ponds	30 acres
	Control Structures	19 units
FDOT – DISTRICT 4 AND TURNPIKE DISTRICT Maintenance Division		
	Stormwater Treatment Ponds	88 acres

Table 4-1  
Roadway Maintenance

Appendix		Permittee	Litter Control	Street Sweeping	Roadside Swales	Maint. Yard	Catch-basin
01	A	Palm Beach County DERM	X	X		X	X
02	B	City of Atlantis				N/A	X
03	C	City of Belle Glade				X	X
04	D	City of Boca Raton		X	X	X	X
05	E	City of Boynton Beach		X	X		X
06	F	Town of Cloud Lake		N/A	X	N/A	X
07	G	City of Delray Beach		X		X	X
08	I	City of Greenacres			X	X	X
09	J	Town of Gulf Stream		N/A	X	N/A	X
10	K	Town of Haverhill				N/A	X
11	L	Town of Highland Beach	X				X
12	M	Town of Juno Beach	X	X	X	N/A	X
13	N	Town of Jupiter		X	X		X
14	O	Town of Jupiter Inlet Colony		N/A	X	N/A	X
15	P	Town of Lake Clarke Shores			X		X
16	Q	Town of Lake Park		X		X	X
17	R	City of Lake Worth		X		X	X
18	S	Town of Lantana		X		X	X
19	T	Town of Manalapan					X
20	U	Town of Mangonia Park		X		N/A	X
21	V	Village of North Palm Beach			X	X	X
22	W	Town of Ocean Ridge			X	N/A	X
23	X	City of Pahokee		X	X	X	X
24	Y	Town of Palm Beach		X	X	X	X
25	Z	City of Palm Beach Gardens			X	X	X
26	AA	Town of Palm Beach Shores			X	N/A	X
27	BB	Village of Palm Springs		X		X	X
28	CC	City of Riviera Beach		X	X	X	X
29	DD	Village of Royal Palm Beach		X	X	X	X
30	EE	City of South Bay				X	X
31	FF	Town of South Palm Beach	N/A	N/A	N/A	N/A	X
32	GG	Village of Tequesta				N/A	
33	HH	City of West Palm Beach		X	X	X	X
34	II	Village of Wellington	X	X	X	X	X
35	JJ	Indian Trail Improvement District		N/A	X	X	X
36	KK	North Palm Beach Heights WCD	N/A	N/A	N/A	N/A	N/A
37	LL	Northern Palm Beach County ID			X	N/A	X
38	MM	South Indian River WCD		N/A	X		X
39	NN	FDOT- District Four	X	N/A	N/A	X	N/A

Key: X = Existing Program

N/A = Not applicable

yards and cleaning of catchbasins. Some of the co-permittees have purchased additional roadway equipment for maintenance and others are developing and expanding their stormwater management programs.

#### **4.4 Flood Management**

Existing Palm Beach County procedures and programs require that new flood control projects consider water quality impacts. Projects within the co-permittees' jurisdiction are required to meet SFWMD and FDEP water quality criteria. Generally, this means treatment of the first inch of stormwater runoff or 2 1/2 inches over the percent of impervious area. All of the co-permittees' new stormwater management facilities incorporate provisions for the treatment of first flush of runoff.

The co-permittees are actively involved in a number of federal and state programs that have a regional impact on water quality for the county's receiving water bodies. These programs include the following:

##### **Everglades Construction Project**

In 1994 the state of Florida passed the Everglades Forever Act, which established a program to restore a two-million-acre region known as the Everglades Protection Area. All of western Palm Beach County is included in this area and all water entering the Everglades must meet state water quality standards. Under this program, 47,000 acres of filtering marshes, referred to as stormwater treatment areas (STAs), will be constructed to remove pollutants from the stormwater runoff. The USACE and SFWMD have completed the design for the STAs (a total of six). The first STA to be constructed, STA 6, is located in southwest Palm Beach County and was completed in October 1997. The last of the STAs is scheduled to be completed in October 2003. The primary goals of the Everglades construction project in Palm Beach County are as follows:

- To reduce the phosphorus level in water entering the northern Everglades ecosystem to an interim target of 50 parts per billion
- To improve the volume, timing and distribution of water entering the Everglades
- To reduce the volume of harmful discharges to sensitive estuary systems including the Lake Worth Lagoon
- To reduce the volume of poor quality water discharged to Lake Okeechobee from special districts adjacent to the lake

- To improve the flood protection in the C-51 West Basin

### **C&SF Project**

In 1992, Congress authorized a comprehensive review study of the C&SF Project. The purpose of the "Restudy" is to re-examine the C&SF project to develop modifications that will restore the Everglades and Florida Bay ecosystems while providing for the other water-related needs of the region. Specifically, the study will investigate making structural and operational modifications to improve the quality of the environment; protection of the aquifer; the integrity, capabilities and conservation of urban and agricultural water supplies and other water related purposes. The Restudy will have an impact on all of Palm Beach County's major watersheds.

The Restudy is currently in the feasibility phase, which is being jointly funded by the USACE and SFWMD. The draft feasibility report is scheduled to be released in October 1998. The study will result in a comprehensive plan to be submitted to Congress by July 1, 1999.

### **C-51 West End**

The USACE is currently working with SFWMD to design improvements to the C-51 Canal. Stormwater runoff west of State Road 7 will be directed into a 5,850-acre stormwater treatment area, STA-1E. The project will operate in parallel with the Everglades construction project STA-1W to reduce the total phosphorus in runoff from both the C-51 west and the S-5-A basins prior to discharge into the Water Conservation Area No. 1 (the Loxahatchee National Wildlife Refuge). The design memorandum for this project is scheduled for completion in 1998 and construction of the facilities is scheduled to be completed by 2003.

### **Southern L-8 Basin/Water Catchment Area/ Loxahatchee Slough Basin**

SFWMD and the City of West Palm Beach have completed Phase I of this program. This phase included development of analytical tools and models for developing a management plan for these areas. Phase II is currently in progress and includes developing alternatives to improve drainage, enhance water supply in the region and promote ecosystem restoration, while being implementable by the regulatory agencies. Work groups have been established for each of the three basins and regular meetings with the local government stake-holders are proceeding. The development of the management plan is scheduled for completion in January 1999.

### **Lake Worth Lagoon**

Palm Beach County Department of Environmental Resources Management (DERM) and the FDEP have co-sponsored a program to develop a management plan for the Lake Worth Lagoon, located along the urbanized southeast coast of Florida, that has been transformed from a freshwater lake to an urban estuarine lagoon system. Over the years, the lagoon has been subject to an onslaught of human activities, such as channel dredging, shoreline bulk-heading/filling, dock and marine construction, sewage disposal and stormwater runoff. The cumulative impacts of these activities have significantly affected it, however, it still has significant regional importance for its remaining natural resources. Management of the Lake Worth Lagoon can lead to greater protection of this valuable coastal resource. In Spring 1997, a Lake Worth Lagoon Steering Committee was formed by representatives of state, local and federal governments to develop a management plan for the lagoon. Four subcommittees were formed to guide this process. These committees include water and sediment quality, habitat restoration and enhancement, regulatory review and pollution prevention, and public use and outreach. A draft of a Lake Worth Lagoon Management Plan was prepared in April 1998. Goals for this Plan are as follows:

- To attain and maintain water and sediment of sufficient quality (Class III or better) to sustain a healthy estuarine ecosystem
- To attain and maintain the biological integrity of the ecosystem which supports the diversity of fisheries and wildlife, including endangered and threatened species
- To achieve heightened awareness and education of public and private interests through coordinated interagency management of the Lake Worth ecosystem
- To achieve the goals and programs outlined in the four subcommittees, significant planning and coordination must be undertaken by the numerous parties involved in the Lake Worth Lagoon ecosystem management effort. Seventy percent of the permittees (27 of 39) will be affected by the Lake Worth Lagoon Management Plan. Three major drainage basins—the C-17 Canal, the C-51 Canal and the C-16 Canal—drain into the Lake Worth Lagoon

## **4.5 *Municipal Facilities***

Municipal solid waste transfer stations in Palm Beach County are operated and maintained by Palm Beach County's Solid Waste Authority (SWA). These facilities are covered to prevent exposure to precipitation and, therefore, are not subject to Florida CFR 122.26(d)(2)(iv)(A)(5). The municipal solid waste is delivered to the transfer stations from vehicles arriving from residential and commercial solid waste pickups. It is deposited from the vehicles into the tipping floor within the covered transfer station, and then placed within semi-tractor-trailers for transport to the north county resource recovery facility. Solid waste is not stored at the transfer station overnight. Recyclable materials (aluminum cans, glass, newspapers) are exposed to precipitation at two of the five solid waste transfer stations. The drainage system serving these two transfer stations provides stormwater retention up to the 100-year storm event, therefore the stations do not discharge into waters of the United States. Consequently, the transfer stations are not subject to the NPDES requirements and are not applicable to permit No. FLS000018. No other co-permittees have identified any other municipal solid waste facilities. Those solid waste facilities associated with transportation fleet maintenance and storage yards are covered in the NPDES permit Section 3 under "Roadways" in this annual report.

#### ***4.6 Pesticides, Herbicides, Fertilizer Usage***

The objective of the pesticide, herbicide, fertilizer usage surface water management program element is to implement controls to reduce, to the maximum extent practicable, the discharge of pesticides, herbicides and fertilizers applied by employees or contractors to public rights-of-way, parks and other municipal properties. The co-permittees are in compliance with these activities. Table 4-2 identifies the co-permittees that apply pesticides and herbicides and whether the activity is conducted in-house or contracted by licensed operators.

#### ***4.7 Illicits Inspection, Investigation, Enforcement***

The illicit inspection, investigation and enforcement stormwater management program element requires a continuous program to detect and eliminate illicit discharges and improper disposals into the MS4. The co-permittees were required to identify allowable non-stormwater discharges, maintain a log documenting inspections and enforcement actions and provide a copy of municipal ordinances that address the prohibition of illicit stormwater connections and illegal dumping into the MS4. The co-permittees indicated that 19 types of discharges listed under Part II.A.7.a. of the NPDES Permit No. FLS000018 will continue to be allowed to discharge into the MS4. Some of the co-permittees also identified other exempt non-stormwater discharges, such as pressure treating, emergency wastewater discharges permitted by FDEP, direct or indirect

discharge as a result of application of pesticides/herbicides related to mosquito control activities, onsite sewage disposal systems permitted by the Palm Beach County Health Department, dewatering operations permitted by the SFWMD and swimming pool contributions. All co-permittees with authority to

Table 4-2  
Pesticide/Herbicide Usage Personnel Table

Appendix		Permittee	Applicators In-House	Applicators Contracted
01	A	Palm Beach County DERM	X	X
02	B	City of Atlantis		X
03	C	City of Belle Glade	N/A	X
04	D	City of Boca Raton	X	X
05	E	City of Boynton Beach	X	X
06	F	Town of Cloud Lake	N/A	X
07	G	City of Delray Beach	X	N/A
08	I	City of Greenacres		X
09	J	Town of Gulf Stream	N/A	X
10	K	Town of Haverhill		X
11	L	Town of Highland Beach	N/A	N/A
12	M	Town of Juno Beach		X
13	N	Town of Jupiter	N/A	X
14	O	Town of Jupiter Inlet Colony	N/A	X
15	P	Town of Lake Clarke Shores	N/A	X
16	Q	Town of Lake Park	X	X
17	R	City of Lake Worth	X	X
18	S	Town of Lantana		X
19	T	Town of Manalapan	N/A	X
20	U	Town of Mangonia Park	N/A	X
21	V	Village of North Palm Beach	X	N/A
22	W	Town of Ocean Ridge	N/A	X
23	X	City of Pahokee	X	X
24	Y	Town of Palm Beach	X	X
25	Z	City of Palm Beach Gardens	N/A	X
26	AA	Town of Palm Beach Shores	N/A	X
27	BB	Village of Palm Springs	X	X
28	CC	City of Riviera Beach	X	X
29	DD	Village of Royal Palm Beach	X	X
30	EE	City of South Bay	X	X
31	FF	Town of South Palm Beach	N/A	N/A
32	GG	Village of Tequesta	N/A	X
33	HH	City of West Palm Beach	X	N/A
34	II	Village of Wellington	X	X
35	JJ	Indian Trail Improvement District		X
36	KK	North Palm Beach Heights WCD	N/A	N/A
37	LL	Northern Palm Beach County Improvement District	N/A	X
38	MM	South Indian River WCD	N/A	X
39	NN	FDOT- District Four	X	X



implement ordinances to prohibit illicit stormwater discharges and illegal dumping provided copies of these ordinances in their individual annual reports (included as appendices to this report).

#### **4.8 *Field Screening***

Dry weather field screening activities included updating the inventory of MS4 outfalls, field screening a portion of the MS4 system for illicit connections and improper discharges and maintaining a log documenting the field screening activities. Table 4-3 provides a listing of the municipal outfalls identified by each co-permittee. Information in this table was obtained from the co-permittees' Part 1 and Part 2 Applications and includes updated data obtained from the co-permittees' individual annual reports. Field screening activities performed by the co-permittees for this annual report did not indicate any presence of illicit or improper discharges into the MS4s.

#### **4.9 *Spill Response***

The Fire/Rescue subcommittee of the Palm Beach County Intergovernmental Coordination Program has developed a plan for Regional Response for Hazardous Material Incidents. The Regional Response Plan for Hazardous Material Incidents adopts standards for Hazardous Materials Response Teams as established by the Florida Emergency Response Commission. The funding for the Response teams is provided by the SWA. Palm Beach County's Hazardous Materials Response Teams are divided into four quadrants within the county. The four quadrants and their incident response teams are listed below:

- Northeast Palm Beach County – West Palm Beach Fire Department
- Northwest Palm Beach County – Palm Beach County Fire Department
- Southeast Palm Beach County – Boca/Delray Fire Department
- Southwest Palm Beach County – Palm Beach County Fire Department

The capabilities of the Hazardous Materials Response Teams are listed below:

- Hazard and risk assessment
- Provide technical information and guidance to the on-scene incident commander regarding actions relating to hazardous materials and incident safety, such as:
  - Levels of PPE required for operating personnel

- Public protection action options
- Decontamination requirements

Table 4-3  
Outfall Inventory

Appendix		Permittee	Outfalls
01	A	Palm Beach County DERM	924
02	B	City of Atlantis	6
03	C	City of Belle Glade	6
04	D	City of Boca Raton	258
05	E	City of Boynton Beach	116
06	F	Town of Cloud Lake	1
07	G	City of Delray Beach	85
08	I	City of Greenacres	43
09	J	Town of Gulf Stream	11
10	K	Town of Haverhill	7
11	L	Town of Highland Beach	24
12	M	Town of Juno Beach	1
13	N	Town of Jupiter	34
14	O	Town of Jupiter Inlet Colony	4
15	P	Town of Lake Clarke Shores	37
16	Q	Town of Lake Park	13
17	R	City of Lake Worth	47
18	S	Town of Lantana	16
19	T	Town of Manalapan	11
20	U	Town of Mangonia Park	1
21	V	Village of North Palm Beach	61
22	W	Town of Ocean Ridge	22
23	X	City of Pahokee	17
24	Y	Town of Palm Beach	80
25	Z	City of Palm Beach Gardens	68
26	AA	Town of Palm Beach Shores	7
27	BB	Village of Palm Springs	24
28	CC	City of Riviera Beach	48
29	DD	Village of Royal Palm Beach	148
30	EE	City of South Bay	10
31	FF	Town of South Palm Beach	1
32	GG	Village of Tequesta	51
33	HH	City of West Palm Beach	214
34	II	Village of Wellington	6
35	JJ	Indian Trail Improvement District	22
36	KK	North Palm Beach Heights WCD	1
37	LL	Northern Palm Beach County Improvement District	45
38	MM	South Indian River WCD	32
39	NN	FDOT- District Four	842
<b>Total Outfalls</b>			<b>3,344</b>

- Site safety recommendations
  - Resource considerations
  - Control zones
  - Monitoring requirements
- Hazardous materials control procedures include, but are not limited to, the following:
    - Plug and patch leaking containers
    - Perform product transfer
    - Over-pack drums and similar containers
    - Flaring of gases
    - Diking containment and redirection of hazardous materials
    - Neutralization procedures under guidance of manufacturer or other competent person
    - Venting procedures
    - Vapor dispersion or suppression

All of the teams:

- Maintain written Standard Operating Procedures for the various tasks they may perform
- Have a written policy for response
- Maintain all appropriate logs and records required
- Have the ability to confirm dispatch of equipment and personnel within five minutes of a request for assistance

A copy of the Regional Response for Hazardous Materials Incidents plan is available upon request from the Palm Beach County Emergency Management Division.

#### ***4.10 Public Reporting of Illicit Discharge***

The objective of Public Reporting of Illicit Discharges is to promote, publicize and facilitate public reporting of illicit discharges having water quality impacts on the MS4. DERM along with the SWA of Palm Beach County publish a number of brochures and flyers that promote public awareness of non-stormwater discharges and related water quality issues, see Attachment 8 of the City of Boca Raton annual report for copies of some of these brochures. The SWA provides a hazardous waste hotline, (561)-697-2700 extension 4701, which can be used by the public to obtain information on the disposal of hazardous waste, report illegal dumping and report illicit discharges to the MS4.

#### ***4.11 Oil/Household Hazardous Waste***

The SWA of Palm Beach County offers a household hazardous waste collection program that is available to all county residents free of charge. This program is intended to protect county lands and waterways from illegal dumping and increase the life of the landfill through the proper disposal of hazardous waste. Examples of the materials accepted include paint, oil and gasoline, pesticides, solvents, batteries, antifreeze, corrosives, fluorescent lamps and propane cylinders. Materials not accepted under this program include explosive, biomedical and radioactive substances. However, the SWA will provide assistance in disposal of these materials. Drop-off sites for household hazardous wastes are located throughout the county in West Palm Beach, Jupiter, Lantana, Delray Beach, Belle Glade and Royal Palm Beach. These services are intended to prevent unlawful dumping of hazardous waste by providing a free means of disposal.

The SWA informs county residents of available programs through various promotional methods including brochures, educational literature, promotional give-away items, newspaper, radio and television advertisements, tours and the hazardous waste hotline. Additionally the SWA participates in or hosts various special events within the community to increase public awareness of hazardous waste. The co-permittees are informed about SWA activities and are provided literature about the programs through a number of avenues such as the NPDES Steering Committee, Palm Beach County Municipal League and the SWA itself.

The SWA also offers disposal services for eligible small businesses or conditionally exempt small quantity generators (CESQG), for a fee. CESQGs often have difficulty obtaining cost-effective disposal services due to the relatively small amount of waste they generate.

#### ***4.12 Sanitary Sewage Seepage***

The co-permittees have instituted programs to minimize discharges of dry and wet weather overflows from sanitary sewers into the MS4. During the dry weather field screening program, the MS4 system is evaluated for any signs of wastewater contamination. If wastewater contamination is suspected, the appropriate utility authority is notified so that corrective actions can be taken. All co-permittees with operation and maintenance responsibilities for sanitary sewer systems indicated that they have ongoing sanitary sewer evaluations for investigation of leaks. These programs include monitoring lift station pumping rates to detect greater than normal flow rates, televising sewer systems to detect leaks and scheduling corrective maintenance.

Additionally, utilities have established procedures, including containment, reporting and cleanup, to handle sewage spills.

#### ***4.13 High-Risk Industrial Facility Inspections***

The objective of the high-risk industrial facility inspections is to develop and implement a program to identify and control pollutants in stormwater discharges to the MS4 from industrial facilities. There were nine co-permittees, City of Boynton Beach, City of Delray Beach, City of Lake Worth, Village of Palm Springs, City of Riviera Beach, Village of Royal Palm Beach, City of West Palm Beach, Northern and FDOT, identified in the permit as having the potential of high-risk facilities within their boundaries. However, the Village of Palm Springs and FDOT have stated in their annual report that high-risk facilities do not exist within their outfall drainage areas.

During the second year permit activity a high-risk industrial facility inventory will be conducted for Palm Beach County. The results of this inventory will be distributed to all affected co-permittees. It will be the co-permittees responsibility to conduct independent evaluation of these high-risk facilities to determine if the potential of discharging pollutants to the co-permittees MS4 exists. The results of this inventory will be reported in the second year joint report.

The co-permittees' inventory for high risk facilities will be obtained using a geographical information system (GIS) database. The database will include landfills, hazardous waste treatment facilities, NPDES industrial permits, SARA Title III facilities and any other industrial or commercial discharges that the co-permittees determine are contributing to pollutant loading of the MS4.

#### **Landfills and Hazardous Waste Treatment Facilities**

A list of operating and closed hazardous waste treatment facilities and landfills in the county was developed based on information obtained from the SWA (refer to Part 2 MS4 Permit Application, General Volume Section 6 for a listing of the facilities). Of the 55 municipal solid waste landfills only six are currently active. Of the remaining 49 sites, 38 are inactive while the remaining 11 have been closed. There were no hazardous waste treatment facilities. Landfills are managed in accordance with state and federal regulations that require groundwater and surface water monitoring programs.

#### **SARA Title III Facilities Identified From Toxic Release Inventory**

The State of Florida's Public Request Program for the Hazardous Materials Information System provided information concerning SARA Title III facilities within Palm Beach County identified from the Toxic Release Inventory. A database file was obtained electronically from the FDEP in 1997. An updated inventory will be requested. These files are an inventory of facilities reporting to the Florida State Emergency Response Commission. The 1997 database identified 32 facilities within the county as SARA Title III facilities. Addresses of these facilities will be incorporated into the high-risk database which will be updated on an annual basis. Because SARA Title III facilities store and/or use toxic substances, they have the potential of being pollutant contributors.

### **Other Industrial Facilities**

Within the county there are a number of resources available to assist in identifying industrial facilities. These include the Palm Beach County Wellfield Protection Program, EPA's NPDES Permit Program and the Municipalities' Part 2 MS4 application (Section 4.0 Source Identification – Inventory of Industrial Discharges).

- *Cone of Influence of a Wellfield*

In 1988, the Palm Beach County Board of Commissioners enacted the Wellfield Protection Ordinance. Business, commercial and industrial facilities that store, use or sell regulated substances in quantities greater than or equal to five gallons of a liquid or 25 pounds of a solid and are located within a wellfield protection zone are required to apply for a Wellfield Operating Permit.

This is a county-wide program that is intended to eliminate releases of non-stormwater hazardous wastes into sensitive surface and groundwater sources. Since the ordinance was passed, more than 3.5 million gallons of regulated substances and 118 pollutant storage tanks have been removed or secondarily contained. If a leak does occur in the containers or tank holding the regulated material, it will be contained, preventing it from contaminating the soils and groundwater in the area. A total of 458 present and future wells and 42 wellfields have been modeled and approved for protection under the ordinance. This ordinance provides added protection for stormwater discharge from within the cone of influence of a wellfield and an inventory of substances located in these areas.

DERM manages the Wellfield Protection and Pollutant Storage Tank programs. Maps of the wellfield protection zones are available in hard copy or electronically. The electronic

information will be entered into the GIS to provide wellfield coverage. DERM is in the process of developing an electronic file of the businesses with regulated substances within these wellfield zones.

- *NPDES Permits*

On March 4, 1993, EPA provided Palm Beach County with an inventory of NPDES permits within the state of Florida. This inventory will be updated and added into the industrial facilities database.

- *Maintenance of Transportation Facilities, Mining Operations, Electric Power Generating Facilities and Manufacturing Facilities*

Information about the location of maintenance of transportation facilities, mining operations, electric power generating facilities and manufacturing facilities was obtained through land use maps in GIS. Discharges from these facilities may contribute to substandard water quality. Drainage from these areas will be considered in identifying high-risk facilities.

- *Palm Beach County's Regional Hazardous Materials Response Program*

The hazardous materials reporting and recording requirements of the Regional Hazardous Materials Response Program will require facilities that store, manufacture or utilize hazardous materials to report types and amounts of these materials. Discharges from these facilities may contribute to substandard water quality. Drainage from these areas will be considered in identifying high-risk facilities. DERM will be contacted to obtain a listing of facilities using or storing hazardous materials.

#### ***4.14 Monitoring Activities***

Details of the monitoring program for high-risk facilities have not been developed. They will be contained in a future annual report.

#### ***4.15 Construction Planning Procedures***

Land development practices within the county require permitting and compliance with state and local regulations. All co-permittees have procedures in place to review plans and projects prior to

construction. Project approvals require controlling erosion and sediments during the construction activity.

#### ***4.16 Construction Inspections***

The NPDES permit requires the co-permittees to develop and implement a program for inspecting construction sites for runoff discharging into the MS4 and for enforcing the requirements of sediment erosion control methods. To satisfy this requirement, the inspection program must include the documentation log of the inspection, an inspection checklist, and verification that construction sites subject to the NPDES stormwater regulations have a stormwater pollution prevention plan onsite. Many of the co-permittees have inspection programs to monitor construction activity and are familiar with best management practices to control sediment and erosion. More details of implementation of the NPDES requirements into the co-permittees inspection programs will be presented in the second and third annual reports.

#### ***4.17 Education Activities***

There are no construction related educational and training activities to report at this time. The Florida Department of Environmental Protection is in the process of developing a curriculum and certification program for inspectors and contractors engaged in construction activities. Additionally, the Steering Committee is scheduling a workshop in the second year of the NPDES permit to address this issue.

#### ***4.18 Additional Activities***

To assist the co-permittees in the implementation of the NPDES permit requirements, the Steering Committee held 12 workshops between February 1997 and March 1998. Attendance by the municipalities' representatives averaged 26 of the 39 entities. Major programs and activities discussed by the co-permittees included the following:

- Development of interlocal agreements between the lead permittee and each co-permittee
- Development of Administrative guidelines for collection and disbursement of NPDES interlocal agreement funds
- Production of quarterly progress reports and budget information
- Formation of a subcommittee to develop standardized reporting forms
- Distribution of a model NPDES stormwater ordinance

- Development of a revised monitoring program
- Presentation by FDEP
- Holding of an NPDES educational materials fair
- Discussion of Palm Beach County's Hazardous Material Response Program
- Discussion of the first annual report requirements

During the first year of the permit program, the Steering Committee organized the activities of the co-permittees to develop the first annual report. Interlocal agreements were developed and finalized, administrative guidelines were developed and guidelines for payment schedules were adopted. The NPDES subcommittee developed standardized reporting forms for structural control inspections, dry weather field screening, citizen complaint log and a summary table for each co-permittee's required NPDES activities. In January 1997, the Steering Committee held a public educational workshop/fair in which 33 publications were distributed to each of the co-permittees. These publications included informational materials from various agencies covering such activities as illegal dumping, pesticide, usage, recycling, disposal of household waste products, pointless pollution, pollutant storage tank programs, wellfield protection programs, operation and maintenance of stormwater facilities, stormwater utilities, etc. The information was collected and assembled from various agencies: SWA, DERM, SFWMD, FDEP and local municipalities. At this fair, an additional 25 publications were on display along with ordering forms for obtaining copies. These publications included stormwater certification programs for site operators, best management practices, maintenance of stormwater facilities, pesticides and herbicides, recycling, xeriscape, etc. Copies of materials distributed and a listing of publications that could be ordered is included in Boca Raton's annual report (Appendix D of this report).

Activities planned for the second year of Steering Committee meetings include an inventory of potential high-risk facilities, implementation of revised water quality monitoring program by DERM, a construction best management practices seminar, the establishment of a public education subcommittee and development of a construction inspection and maintenance yard inspection checklist by the subcommittee.

## **Section 5 - Monitoring Program**

This section presents the monitoring program required by the EPA under the NPDES MS4 permit issued to the co-permittees. Program goals (Section 5.1), schedule (Section 5.2), and proposed revisions (Section 5.3) are presented along with an inventory of existing watersheds (Section 5.4) and a brief discussion about watershed pollutant load estimates (Section 5.5) to be performed by year five of the permit.

### ***5.1 Monitoring Program Goals and Objectives***

In general, this monitoring program will be used in conjunction with other existing and ongoing federal, state and local monitoring programs to support the following efforts of the Palm Beach County comprehensive stormwater management program on a watershed-wide basis:

- Assess the baseline or status of water quality conditions with ambient monitoring of selected local receiving waters, including canals and rivers (also called instream monitoring) under wet and/or dry weather conditions
- Identify long-term trends in receiving water quality by evaluating successive months and years of ambient water quality data (seasonal and annual trends). Note that storm event monitoring was previously performed and will be discontinued
- Obtain rainfall, stage, and velocity data to use for estimates of flow rates and volumes; pollutant loads; calibration of stormwater quantity and quality models; and stormwater facility project design criteria and development criteria for flows, volumes, velocities, and stages
- Refine land use based on non-point source pollutant loading factors, event mean concentration (EMC), and best management practice (BMP) pollutant removal efficiency estimates for use in water quality model evaluations of land use changes and BMP implementation
- Provide compliance monitoring data for submittal to regulatory agencies, e.g., NPDES annual reports
- Generate additional data to better understand cause (source) and effect relationships in the ecosystem from the quantity and quality of stormwater runoff, e.g., Lake Worth, Intracoastal Waterway, Loxahatchee River, including sediments

#### **5.1.1 Receiving Water and Land Based Monitoring Issues**

Should surface water quality degradation occur in a watershed, improvement can be attained by better understanding the relationship between stormwater runoff pollutant sources and their effects. This requires the monitoring of receiving water quality and sediment indicators. This monitoring should be closely coordinated with monitoring and evaluations of land-based pollutant sources/loads and existing BMP effectiveness. Both land use sources data and receiving water data are required to better establish the priorities for the resolution of water quality problems (should they occur), determine priorities for potential BMP implementation and assess stormwater management program effectiveness. EMC data developed from the Nationwide Urban Runoff Program (NURP) and the various NPDES monitoring programs are useful for *relative* comparisons in non-point source pollutant loads due to land use changes or implementation of BMPs. These EMCs are generally not appropriate to use as *absolute* estimates for discharged loads or for instream water quality because of the high variability of the data and potential local fluctuations.

In the case where water quality degradation is occurring in a watershed, gathering receiving water quality data alone will not necessarily provide sufficient information to identify upstream sources of pollutants and prioritize and identify appropriate BMPs. Likewise, gathering data for sources, e.g., land use based EMCs, and BMPs alone would not necessarily identify potential impacts to receiving waters. Therefore, it is important that the existing ambient, land use and BMP water quality databases be used as the foundation for this program and augmented as necessary with the new program data within the budget limitations identified in the Part 2 NPDES Permit Application.

An emerging regulatory and technology issue is the concept of Total Maximum Daily Loads (TMDLs). The State of Florida and EPA are working to define TMDLs for receiving waters that could potentially establish pollutant discharge levels to communities by outfall or land area. The monitoring data gathered from ambient sampling of water quality and sediments may be used as the basis for such decisions. As a consequence, a community may eventually be requested to use EMCs developed for relative evaluations to do absolute concentration and load comparisons of its allowable TMDL discharge. This will likely be an “apples to oranges” comparison, and it raises questions about how, where and when to implement cost-effective BMPs to control the necessary pollutant loads to maintain or enhance water quality as needed. Therefore, the regulatory agencies reviewing this document should consider the limitations in the science and technology of correlating potential pollutant sources to measured receiving water effects.

### **5.1.2 Existing Data Sources and Water Quality**

Various data sources exist upon which the co-permittees can build the water quality database needed for the various elements of the Palm Beach County NPDES MS4 program. For ambient water quality and sediment data, these sources include EPA, SFWMD, DERM and Loxahatchee River Environmental Control District (ENCON). Additional wet weather water quality data sources include the EPA NURP and the various MS4 NPDES wet weather monitoring data gathered in Palm Beach County and across similar areas in Florida over the last few years.

DERM and ENCON maintain water quality databases that may be accessed through EPA's STORage and RETreival (STORET) database system. DERM maintains 43 surface water sampling stations within the central and south sections of the county: 30 fresh water and 13 tidal. Eight parameters are analyzed on a quarterly basis. ENCON maintains a similarly extensive monitoring network in the northern part of the county. The parameter list and sampling frequency differ slightly from the DERM program. A number of the sampling stations have been active for more than twenty years.

SFWMD has been delegated most of the responsibility for stormwater management in Palm Beach County. Since the mid-1970s, SFWMD has been responsible for surface water management systems and permitting of construction within its operational boundaries. DERM has also contributed to the improvement of surface water and groundwater quality through its management of wellfield protection and underground storage tank programs. Both DERM and the SWA have been active in providing public information programs on the reduction of pollutants.

The Part 1 Application notes that SFWMD has been focused on the western area of the county, including Lake Okeechobee and the EAA, where water quality problems are more severe relative to central and eastern Palm Beach County. Much of this degradation has been attributed to agricultural interests that operate in the EAA. SFWMD has been active in securing funding for implementation of management, remedial and mitigation programs that will result in enhancing the water quality in the western part of the county. The EAA is not a part of this permit.

Section 3 of the Part 1 Application identifies major water bodies, areas of historical data collection and points of interest or concern. Areas identified in the 1990 305(b) report (which was current at the time of the application and was incorporated as part of it) as not

achieving their designated use included Lake Okeechobee, Lake Worth Lagoon, portions of the Loxahatchee River, and several canals including the Rim, West Palm Beach (C-51), Hillsboro, Miami, North New River, Boynton Beach (C-16), L-13, Earman River (C-17) and El Rio Canals. Water quality was generally poor in Lake Okeechobee and in the canals flowing from the lake in the western part of the county such as the western portions of the West Palm Beach Canal. A review of the most recent 305(b) report (1996) indicated that generally water quality in the western part of the county is still being affected by intensive agricultural activity in the EAA.

According to information provided in the Part 1 Application, water quality in the central and eastern sections of the county, was generally found to be fair. The Loxahatchee River exhibited good water quality overall, however, the northwest and southwest forks were found to be severely impaired. The 1996 305(b) report indicated water quality improvement (good to fair) in the entire Loxahatchee River Basin. The Loxahatchee River is designated as an Outstanding Florida Water (OFW). This designation is significant since generally no degradation of water quality is allowed.

The C-17 Canal was found to be severely impacted at the time of the 1990 305(b) report, due to wastewater treatment plant discharge. Since that time, the canal has been subject to two significant sewage spills. The analysis provided in the 1996 version of the 305(b) report indicated that the canal was still being impacted although water quality was improving. The Lake Worth Lagoon, which is the receiving water for the C-17 Canal as well as the C-16 and C-51 watersheds, was also found to be severely impacted in the 1990 305(b) report. The 1996 report found that water quality varied from good at the inlet to fair north of the inlet. Water quality degraded to the south of the inlet, especially where the C-51 Canal discharges into the Lake Worth Lagoon.

### **5.1.3 NPDES Permit Requirements for Monitoring**

The revised monitoring program has recently been approved and will be implemented by the co-permittees within the period defined by the NPDES permit. Year one of the permit is the designated period for the co-permittees to define the details of the program. The start of this period is the effective date of the permit, which was February 1, 1997. The compliance date for the finalization of the program was February 1, 1998. If an agreement is not reached among the co-permittees on the monitoring stations and sampling program within 12 months of the effective date of the permit, the co-permittees

shall implement the monitoring program proposed in the final Part 2 NPDES Application no later than 18 months from the effective date of the permit or August 1, 1998.

Annual reports are required to assess the system-wide conditions of the MS4. Years two, three, four and five of the permit are designated for data collection that will contribute to this assessment. The first annual report that summarizes the system-wide condition of the MS4 is due six months after the permit anniversary. Annual reports are due subsequently for years three, four and five. At the end of year four, estimates of seasonal pollutant loads and of the event mean concentrations of a representative storm are required.

Additional permit conditions were established by EPA in the Palm Beach County MS4 NPDES permit which directly relate to the monitoring goals. These conditions include:

- Co-permittees are to establish local monitoring stations in conjunction with the State of Florida Surface Water Ambient Monitoring Program (SWAMP)
- The costs of the monitoring program shall not exceed the projected costs proposed in the MS4 NPDES Part 2 submittal, i.e., \$340,000 for the five-year program
- The monitoring program shall be designed to assist in determining the impact of stormwater discharges on receiving waters
- The effectiveness of existing Stormwater Management Programs and BMPs in terms of pollutant removal, efficiency and priority locations for implementation shall be characterized
- The monitoring program shall help identify pollutant sources and impacts for problem or higher priority pollutants
- The monitoring program shall be agreed upon by the co-permittees, FDEP, and EPA with input from other agencies as appropriate, i.e., SFWMD and DERM
- The data shall be used to identify trends in water quality
- The monitoring program shall provide data for the permit required annual reports

#### **5.1.4 Regulatory Agency Meetings and Contacts**

Prior to the finalization of the monitoring plan, contacts were made with FDEP, SFWMD and DERM staff to discuss the plan proposed in the Part 2 NPDES Application. The proposed Part 2 plan incorporated land use based monitoring as the primary mechanism to achieve monitoring goals and objectives.

##### *SFWMD Meeting*

- SFWMD did not offer any objections to the proposed program other than a concern that it may be difficult to compare dry and wet season quarterly data.
- Two proposed modifications to the program were discussed. These were to allow for less time between storm events during the wet season and to remove semi-volatile organic compounds from the database analysis. SFWMD staff agreed with these proposals and suggested that the semi-volatile organic compounds be deleted entirely from the analyses required by the permit.
- Ambient water quality data are available on-line from each of the drainage basins within Palm Beach County through SFWMD.
- The possibility that SFWMD might provide funding on a cost-sharing basis for the program is remote.

*Palm Beach County DERM Meeting*

- Agency staff expressed several areas of concern with regard to the value of the proposed land use based monitoring program. The major area of concern expressed by DERM staff is that the data to be collected as part of the proposed program will not be representative of land uses within the county. An essential limitation of the program, in DERM's view, is that it is too large an extrapolation to say that one sampling location is representative of all similar land with multiple uses within Palm Beach County.
- Also expressed as a concern was that the collection of land use data as proposed would largely duplicate data collected as part of the existing Palm Beach County ambient and EPA's NURP databases. It is DERM's opinion that the ambient data are representative of long-term surface water quality trends in the County and that land use data would add little useful insight to stormwater quality issues.
- Concern was expressed about the cost of the program relative to the potential benefits.
- DERM staff expressed a desire that some type of hybrid program could be developed that incorporated the ambient monitoring network for a cost substantially less than the estimated cost for the proposed wet weather monitoring program over the permit period. DERM suggested that the ambient network could be extended to collect data from new locations to supplement the existing database.
- The location and means of access of the available ambient data collected within the County were discussed.

*FDEP Telephone Discussion and Letter Review*

- The proposed approach of expanding the local ambient network to augment the NPDES monitoring program was discussed with Mr. John Cox and Mr. Eric Livingston of FDEP. They agreed that this approach appeared to be acceptable.
- FDEP staff believes that there is a substantial NURP and NPDES EMC database available that can be used for the purpose of estimating relative pollutant loadings so that a co-permittee does not necessarily need to collect site-specific land use data. A co-permittee can collect new storm event data to refine its understanding of water quality impacts due to land uses or industries specific to their physical setting. FDEP would like to shift the NPDES focus from land use based monitoring to changes noted in ambient water quality between the wet and dry seasons, BMPs efficiencies (particularly for dry detention and exfiltration in South Florida), and cumulative impact measurements.

### **5.1.5 Recommendations**

Many of the general monitoring program goals and EPA permit requirements are similar. It is important to note that the regulatory requirement for monitoring under the NPDES MS4 program has apparently evolved from land based and BMP monitoring to include ambient monitoring of receiving waters and sediments. This change in focus has developed in the last year.

As discussed earlier, in cases where the potential is high for water quality degradation to occur, it is important that both the land based pollutant sources and loads are characterized along with receiving water impacts to properly identify the problem, sources, pollutants of priority and stormwater management program effectiveness. Additionally, EMC data are needed for annual reporting and identification of program effectiveness, which are required by the permit. Camp Dresser & McKee Inc. (CDM) has developed an EMC database for the southeastern United States which includes the twelve EPA indicator parameters and ten land use categories applicable to Palm Beach County. These data can be used for relative evaluations of non-point source pollutant loads for the major watersheds in the fifth year of the permit. These estimates would be an update and refinement of the work done in the Part 2 Application.

*Therefore, it appears that the most appropriate monitoring program for the Palm Beach County co-permittees will be to monitor receiving water impacts by augmenting existing DERM, ENCON and SFWMD ambient monitoring sites to expand the long-term database and help “bridge the gap” between land use based and receiving water assessments within the identified program budget. These monitoring sites would include ambient*

water column and sediment monitoring as preferred by the regulatory agencies. Figure 5-1 shows the proposed monitoring locations. Section 5.3 presents further details and costs for the potential program revisions under consideration.

Figure 5-1 PBC NPDES Ambient Surface Water Quality Monitoring Sites & Drainage Basins

## ***5.2 Status of Program/Schedule Compliance***

The co-permittees have submitted monitoring data collected as part of the activities associated with the Part 2 NPDES MS4 Permit Application. Monitoring data on stormwater runoff quality were collected from seven stations representing land uses throughout Palm Beach County from November 1992 through May 1993. The data collected were submitted with the Part 2 Application.

The effective date of the permit was February 1, 1997. In compliance with year one permit requirements, the co-permittees have finalized the monitoring program developed as part of the Part 2 Application. The NPDES permit requires that the selection of monitoring stations be a cooperative effort among the co-permittees and appropriate government agencies including EPA, DERM, FDEP, US Fish and Wildlife Service and SFWMD. This has been accomplished by presenting the monitoring program to the various agencies and incorporating their comments. The proposed program is discussed in the following section.

## ***5.3 Proposed Revisions to the Monitoring Program***

This section describes the proposed long-term monitoring program required by 40 CFR §122.26(d)(2)(iii)(D). The long-term monitoring program is for “representative data collection for the term of the permit” as represented in the final MS4 permit issued to the Palm Beach County co-permittees.

For the reasons discussed in Section 5.1 and based on state and local agency comments, a revision to the monitoring strategy for the co-permittees as originally proposed in the Part 2 NPDES MS4 Permit Application for Palm Beach County is appropriate. A two-pronged approach is proposed which builds upon the trend monitoring of ambient surface water data that has been collected in the county, and also incorporates the collection of data on sediment. This approach is described below.

### ***5.3.1 Ambient Trend Monitoring***

The objective of ambient or trend monitoring is to determine the existing status of water quality and the rate of progress toward the goal of reducing pollution to the maximum extent practicable (MEP) or to identify trends toward degradation (if occurring). As a result, this aspect of the monitoring program should reflect a composite of the management programs. Trend monitoring sites would therefore be located near the

western, central and eastern areas of the major watersheds to determine spatial changes in water quality. Generally, flow in the major canal systems (C-15, C-16, C-17, C-18, and C-51) is from inland to tidal areas, i.e., west to east. The Loxahatchee River flows generally from northwest (inland) to southeast (tide). This being the case, the western, central and eastern monitoring stations can be considered representing regional upstream, midstream and downstream conditions, respectively, within the major watersheds. Where possible, long-term trend sampling sites will be located where there are already historically collected water quality data, e.g., the DERM network, to build upon the existing databases.

Trend monitoring sites have the potential for monitoring the improvements to ambient receiving waters as a result of compliance with permit conditions and programs that are active within Palm Beach County. These improvements may be a result of:

- Compliance with BMP design and performance criteria adopted for new development including dry and wet detention, and retention
- Retrofit stormwater projects that incorporate current BMP design criteria
- The removal of illicit connections and the reduction of improper disposal activities
- Public awareness programs that are designed to assist in reducing pollutants introduced into runoff by providing information on residential and commercial fertilizer, pesticide and herbicide applications, hazardous materials management, and recycling programs
- Compliance with wellfield protection and pollutant storage tank ordinances
- Identification and monitoring of municipal landfill, hazardous waste handling, and industrial facilities

Long-term monitoring can also provide baseline data for county canals, rivers and lakes to illustrate the background quality of water expected in the area. In this context, “long-term” means the period of time to experience water quality improvements due to program implementation. At a minimum, the long-term monitoring program should be in operation over the duration of the initial NPDES MS4 permit, i.e., five years. However, because the effects of many of the management programs may require monitoring in the water column over many years, the trend monitoring sites may be continued over subsequent terms for at least 10 to 20 years. At the end of each five-year permit term, the locations, parametric coverage, and frequency of sampling should be reevaluated although sufficient data for a more complete evaluation may require additional years of

sampling. Alternatively, in the cases where the proposed sampling stations have been maintained by DERM for 10 years or more and management programs are already in place, valuable information on trends may already exist that may benefit from the continued collection of data.

### **5.3.2 Long-Term Ambient Station Selection**

The selection of the number of stations and their location for the trend monitoring program was based upon the overall management program and the magnitude of sampling costs. The monitoring program is a base-level activity to be distributed evenly around the county with representative sites in major basins.

Based upon the assessments performed as part of the Part 1 and 2 NPDES Permit Applications, and the 1996 305(b) report, selection criteria were developed to identify stations for trend monitoring. The following selection criteria were used:

- The station is within a basin within the county and is capable of reflecting changes due to management programs that have been or will be implemented by the co-permittees
- The station can be used to monitor the effects of management programs in the basin through a single outflow
- The station can reflect changes in upstream land use
- The basin is outside of the EAA which is not regulated under this permit
- If possible, the station is currently being monitored by DERM or other agencies so that data exist to perform a trend analysis
- The basin is listed in the Part 1 Permit Application as an area of special value or of concern
- The stations should reflect both marine and fresh water quality conditions if possible/practical

Based on these criteria, the following seven general sites were selected for the trend monitoring program. All represent major watersheds in Palm Beach County. The locations of these stations and the major watersheds are provided in Figure 5-1.

#### *C-15 Watershed*

A significant portion of the western area of this watershed has been undergoing residential development. The former land use was agricultural. To assess the impact of

land use change, three ambient water quality monitoring stations are proposed to monitor water quality at the upstream, midstream and discharge points of the C-15 Canal. Two of the three proposed stations are currently being monitored quarterly by DERM. These stations are designated 31B and 31C, and will provide monitoring at the discharge and midstream points of the canal. Station 31B is located near the US Highway 1 bridge over the C-15 Canal. Station 31C is located near the Military Trail (SR 809) bridge. The third station will be a new one and located at the terminus of the C-15 Canal, near its intersection with US Highway 441. This stations will be designated 31E.

#### *C-16 Watershed*

Similarly to the C-15 watershed, the area encompassing the C-16 watershed has also been undergoing a change in land use from largely agricultural to residential, especially in the western portions. This watershed was also identified in the 1990 and 1996 305(b) reports as not fully achieving its designated use. The Lake Worth Lagoon is the receiving water for this watershed. Three monitoring stations are proposed to monitor changes in water quality trends. Two existing DERM stations are proposed to be the midstream and downstream monitoring stations. These stations are designated respectively as 27A, which is near the intersection of the Military Trail bridge and the canal, and as 28, which is near the US Highway 1 bridge intersection with the canal. Both stations have residential land uses. The upstream station, designated 27B, will be a new monitoring location at the intersection of the canal and US Highway 441.

#### *C-17 Watershed*

This watershed was identified as not fully achieving its intended use, and has been the subject of two major sewage spills in the past seven years. In addition, this canal discharges into the Lake Worth Lagoon. Two DERM stations have been selected to be incorporated into the NPDES monitoring program to monitor the water quality in this area of the county. These are Stations 12 and 13. Station 12 is located near the intersection of Old Dixie Highway (SR 811) and the C-17 Canal, and is designed to provide data on midstream water quality. Station 13 is located near the intersection of US Highway 1 and the canal. This station is designed to provide data at the canal's discharge point. Upstream data will be collected at a new monitoring station designated 12A. The proposed location for 12A is near the intersection of 45<sup>th</sup> Street and the C-17 Canal. All of these stations reflect a dominantly urban (residential and commercial) land use.

#### *C-18 Watershed*

The discharge point of this watershed, the southwest fork of the Loxahatchee River, was found to not fully achieve its intended use, and thus is a point of interest. Four stations that are being currently monitored by other agencies have been selected for incorporation into the program. To provide data at the upstream portions of the C-18 watershed, two stations that DERM is currently monitoring are proposed. Two stations are selected due to the fork in the canal. Stations 16 and 15 are proposed which are near where the canal forks intersect with the Beeline Highway (SR 710). These stations are located in largely low density residential areas. For midstream sampling data, the G92 monitoring station maintained by SFWMD is proposed. This station provides data for low-density residential land use. Downstream sampling data will be collected at the crossing of Indiantown Road (SR 706) and the canal which is designated as Station 81 by ENCON. The land use in this area is largely moderate to high density residential.

#### *C-51 Watershed*

The western portion of this watershed is a point of interest based on previous water quality data. Overall, this watershed represents a major discharge basin, terminating at the Lake Worth Lagoon, that did not fully achieve its intended use. It is proposed that the upstream station be located where the discharge from the western section of the county enters the central portion. DERM currently maintains a monitoring station at this location, designated 38B. This station would reflect more a rural (agricultural and low density residential) land use as this station is just east of the confluence of the L-8, C-51, and L-13 Canals off of US Highway 98. The midstream monitoring location coincides with DERM Station 37. This location is near the intersection of U.S. Highway 98 and 441 and reflects both urban and rural land use. The downstream location is near the discharge of the C-51 Canal. This station is maintained by ERM as Station 20 and is near the intersection of U.S. Highway 1 and the canal. This station would reflect an urban (residential and commercial) land use.

#### *Loxahatchee River Watershed*

Some segments of the Loxahatchee River (northwest and southwest forks) have been identified as not fully achieving their intended use. ENCON maintains several stations in this watershed that can provide trend data. Three of these—51, 62 and 72—are proposed to be incorporated into the monitoring program. Station 62 is located on the northwest fork of the river near its intersection with Island Way. Station 51 is located on the north fork of the river near its intersection with Tequesta Drive. Station 72 is located on the

southwest fork of the river near the intersection with Loxahatchee River Road. The land uses in this area are primarily residential.

#### *Lake Worth Lagoon/Intracoastal Waterway*

The determination of water quality in the Lake Worth Lagoon has recently become a high priority due to its position as the primary receiving water body for the majority of urban Palm Beach County watersheds. The Intracoastal Waterway north and south of the Lake Worth Lagoon is of similar importance as it receives water from the Loxahatchee River and the C-15 Canal. Information related to the quality of surface water and sediments should prove useful to determine effective methods for reducing pollutant loads to these receiving waters. It is proposed that six of the stations currently being monitored by DERM and ENCON be incorporated into the proposed plan. ENCON designated Stations 30 and 35, and DERM designated Stations 11, 18A and 28A are included in the plan, and will provide data for points downstream of the major outfalls, as well as providing linear coverage of the lagoon and waterway. Additionally, two new stations are proposed. The first station, designated 14, will be located in the vicinity of the C-17 discharge and the Lake Worth intersection (Blue Heron Boulevard bridge). The second station, designated 31D, will be located near the intersection of the C-15 and the Intracoastal Waterway (Linton Boulevard bridge).

### **5.3.3 Sampling Frequencies, Parameters and Depths**

The frequency of trend monitoring sampling will be quarterly at these sites, using grab samples rather than storm event samples. Since the purpose of this type of sampling program is to look at the long-term cumulative effects of stormwater discharges and improvements, periodic grab samples can measure the composite reaction of the surface waters to the stormwater pollution reduction programs in comparison to surface water standards and use attainment.

The list of parameters to be analyzed for in the NPDES MS4 monitoring program would augment those currently evaluated under DERM's and ENCON's ambient programs. The parameters listed in Table 5-1 have been identified through historical trend as being useful in determining the status of water quality in Palm Beach County and incorporate the twelve NPDES parameters. Several parameters, in addition to what these agencies are currently evaluating for, were added to the list so that relevant pollutant loading calculations could be accomplished. Field parameters measured by DERM are also incorporated into the proposed program.

Table 5-1  
 Palm Beach County NPDES Program  
 Ambient Monitoring Parameters  
 (Water Column)

Temperature	PH
Conductivity	Dissolved Oxygen
Turbidity	Salinity (Total Dissolved Solids)
Total Suspended Solids	Biochemical Oxygen Demand
Chemical Oxygen Demand	Total Nitrogen
Total Kjeldahl Nitrogen	Nitrate plus Nitrite
Ammonia Nitrogen	Total Phosphorus
Dissolved Phosphorus	Total Coliform Bacteria
Fecal Coliform Bacteria	
Lead	Cadmium
Zinc	Copper
Hardness (as CaCO <sub>3</sub> )	
<b>Physical observations</b>	
Flow Direction	Cloud Cover
Phytoplankton Bloom	Construction Activity

#### 5.3.4 Sediment Sampling Program

The purpose of the sediment sampling program is to systematically measure the historical and potential impacts of pollution in receiving water bodies throughout the permit area by accumulation of sediments. With these data, the water bodies can be prioritized for further study or pollutant source tracking if need be. Since sediments accumulate pollutants settled from suspension, sediment data can help prioritize watersheds by

representing a historical perspective on rates and types of pollution from sedimentation. While little is known about the actual effects of the concentration of pollutants in the sediments, the parameter concentrations can be used to compare one basin to another, thereby focusing the county's attention on important watersheds for BMP implementation. Relative scales of anthropogenic impacts developed by the National Oceanic and Atmospheric Administration (NOAA) will be used to compare the sediments to other locations. This scale utilizes the ratio of aluminum to other metals as an indicator of manmade impacts.

Samples will be collected at the beginning and end of the permit period near the discharge points into the Lake Worth Lagoon at each of the following major watersheds: C-15, C-16, C-17, C-18, and C-51, and the E-3 Canal at the southern end of the County. For the C-15, C-16, C-17, C-18, and C-51 watersheds, two samples will be collected, one west and one east of the saltwater control structures that exist at each canal. As discussed previously, these locations equate to upstream and downstream locations, respectively, in the regional watersheds. For the E-3 Canal station, one sample will be collected upstream (north) of the saltwater control structure. These locations have been selected to provide the best opportunity to obtain representative sediment samples in each of the respective watersheds.

The station locations have been selected based on characteristics exhibited on maps and aerial photographs and from previous characterizations done in the major watersheds by DERM and others that identify quiescent areas that allow for the accumulation of suspended sediment. Previous experience in the area has shown that the collection of the finer sediment fraction that comprises suspended load will be representative of sediment deposited in the permit period, i.e., five years. A trial sampling run will be performed by the co-permittees to verify that the sampling stations selected allow for the settlement of fine sediment. The parameters to be analyzed in the sediment samples are presented in Table 5-2.

Table 5-2  
Palm Beach County NPDES Program  
Sediment Monitoring Parameters

Total Organic Carbon (TOC)
----------------------------

Nitrogen Series
Phosphorus Series
Heavy Metals (aluminum, arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, tributyl tin, and zinc) EPA Method 200 series
Polycyclic Aromatic Hydrocarbons (PAHs) EPA Method 610
Persistent Pesticides (organochlorine) EPA Method 8081
Percent Silt, Sand and Clays

FDEP requested that TOC be incorporated into the parameter list so that it may be used as an indicator of potential toxicity, based on recently published guidelines.

The following provides a brief description of the sediment sampling sites and the rationale for their selection. All reference to upstream and downstream locations is with regard to the saltwater control structures at each canal.

*C-15 Watershed*

The proposed upstream location is at the intersection of the C-15 Canal and Spur Canal, near Canal Way. The area where these two canals intersect should allow for fine sediment to accumulate as it represents an increase in channel width and thus the canal flow should lose velocity and deposit sediment out of suspension. The proposed downstream location is south of the C-15 Canal discharge into the Lake Worth Lagoon, near the NE 78 and NE 79 Street areas on the west bank. Previous sampling done as part of a characterization of the Lake Worth Lagoon has indicated that fine sediment accumulates in this area.

*C-16 Watershed*

The upstream location proposed for sediment sampling is at the intersection of the C-16 and El Rio Canals. The El Rio Canal is one of the major north-south canals that interconnects the major east-west watershed canals in the south part of the County. The intersection of these canals is wider than each of the individual canals and should provide an area where fine sediment accumulates. The C-16 Canal downstream sediment sampling point is south of its discharge into the Lake Worth Lagoon, near Willard Way on the west lagoon bank. Previous sediment sampling by DERM has indicated that this is a likely area where fine sediment associated with the canal will accumulate.

*C-17 Watershed*

The location selected for upstream sediment sampling in this basin is where it intersects with the east-west trending canal northeast of H.L. Watkins Middle School. As the canal widens at this location it should allow for the accumulation of fine sediment. The downstream location selected is the intersection of the C-17 Canal and North Lake. This intersection represents a significant widening of the C-17 Canal and associated slower velocities. This should provide for accumulation of fine sediment from the canal as a consequence of this widening.

*C-18 Watershed*

The upstream location selected is within 300 yards east of the I-95 intersection. This location is near a bend in the canal and should provide an area that is conducive to fine sediment accumulation. The downstream sampling location selected is below the control structure but just upstream of its joining with the northwest fork of the Loxahatchee River. The canal's intersection with Palm Point Drive is the approximate location where the C-18 Canal is wider and fine sediment deposition from the canal should be occurring.

*C-51 Watershed*

For this watershed, the upstream location selected is approximately 200 yards west of the CSX railroad bridge, where the canal makes a sharp bend to the east as it heads to the Lake Worth Lagoon. Previous sampling experience in this area has indicated that fine sediment accumulates at this bend. The proposed downstream sampling location is south of the C-51 discharge to the Lake Worth Lagoon, on its west bank near Harbor Drive. Previous sampling performed in the Lake Worth Lagoon has shown that fine sediment associated with the C-51 Canal accumulates in this area.

*E-3 Watershed*

The proposed sample location for this station is at the intersection of the SW 18<sup>th</sup> Street bridge and the E-3 Canal, which is upstream of the saltwater control structure. Collecting a downstream sample at the E-3 would not provide useful data as the canal discharges to the Hillsboro Canal. Water quality in the Hillsboro Canal is heavily influenced by the EAA which is not regulated under the NPDES permit for the Palm Beach County co-permittees.

**5.3.5 Flexible Monitoring Program**

It is proposed that the recommended monitoring program be assessed annually throughout the life of the permit. Because the data collected will help the co-permittees understand more of the MS4 and the interrelationships among municipalities, land uses and management techniques, evaluation of the data may lead to the modification of one or more of the monitoring strategies to optimize the data collected. The parameter list for each type of sampling program should also be evaluated annually to remove parameters that are not useful or add parameters that may provide more benefit. Finally, as the Florida SWAMP begins to complete programs and protocols for streams and lakes, elements from those programs may be considered.

Related to the flexible monitoring program approach are the metals parameters (cadmium, copper, lead and zinc) that are proposed to be sampled for the first year of the monitoring program. At the end of the first year of monitoring, the co-permittees will evaluate the metals data to determine if further evaluation for these parameters is warranted. From the data collected from ERM's monitoring network in Palm Beach County over the past 10 years, it has been indicated that if metals are present they do not manifest themselves in the water column, but rather accumulate in the canal sediments. This occurs due to the metals' particulates bonding with suspended sediment that settles out in quiescent areas. If the metals' concentrations in the first year of ambient monitoring data indicate insignificant cadmium, copper, lead and zinc, the co-permittees propose to delete these parameters from further evaluation over the remainder of the permit term.

#### ***5.4 Inventory of Major Watersheds***

The primary stormwater management system in Palm Beach County was designed and constructed by the U.S. Army Corps of Engineers to prevent damage to life and property from storm events. This man-made system consists of levees, canals and water control structures that are maintained and operated by the SFWMD. Figure 5-1 generally depicts the primary canal network for Palm Beach County.

Six major canal systems (C-15, C-16, C-17, C-18, C-51, and Hillsboro Canals) along with the Loxahatchee River serve as the primary outlets from eastern Palm Beach County to the tidal waters of the Intracoastal Waterway including the Lake Worth Lagoon. Four passages provide access from the Intracoastal Waterway to the Atlantic Ocean: Jupiter Inlet, Lake Worth Inlet, Boynton Inlet and Boca Inlet. The primary function of the major canals is to provide flood

protection to the tributary basins within which they are located. Secondary uses of the canals include drainage for agricultural, urban and residential development, regulation of groundwater table elevations to prevent saltwater intrusion, and supply of water for irrigation and recharge to the wellfields of local municipalities.

The primary stormwater management system of western Palm Beach County consists of five main canals: L-8, West Palm Beach Canal (C-51), Hillsboro, North New River and Miami Canals. Five secondary canals (Cross, Bolles, L-6, L-7, and L-14 Canals), Lake Okeechobee, and two water conservation areas are part of the drainage system of the western part of the county. The purposes of these primary canals and their water control structures are as follows:

- Remove excess water from the western areas of Palm Beach County by discharging into Lake Okeechobee, conservation areas No. 1 and No. 2, the C-51 Canal or the Hillsboro Canal
- Transfer water from Lake Okeechobee to the conservation areas and vice versa
- Supply water for irrigation in the western areas
- Supply water from the water conservation areas, Lake Okeechobee, or the western canals to the eastern C-51 and Hillsboro Canals

The operation of the complex drainage system in Palm Beach County entails delicate balancing to provide flood protection, water control and water supply for Palm Beach, Broward and Dade Counties.

### ***5.5 Major Watershed Pollutant Loading Estimates***

The primary objective of this five-year monitoring program is to meet the conditions of the NPDES permit and goals of the program. In addition, seasonal EMCs will be estimated during the fourth year of the permit term from the existing land use based data. The co-permittees will use the modeling techniques described in 40 CFR 122.26(d)(2)(iii)(B) to provide estimates of pollutant loadings for major watersheds on a seasonal basis.

At the end of year four of the permit period, non-point source pollutant loadings will be estimated using a combination of NURP and regional NPDES monitoring data that CDM has compiled into a database for the southeastern United States. Permit conditions in Part V (A)(1) allow for seasonal pollutant loads and EMCs for each major watershed to be estimated in this manner. The database provides EMCs for the EPA's 12 indicator parameters for 10 land use categories. It should be noted that this existing NURP/NPDES database is appropriate for

relative comparisons or trends in non-point source pollutant loads due to changes in land use or BMPs. *Additional land use and BMP monitoring may be needed from this program if absolute estimates of pollutant loads are ultimately needed to establish TMDLs.* Existing flow monitoring stations maintained by SFWMD at the outlets of the C-15, C-16, C-17, C-18, C-51 and Loxahatchee River should be used to assist in the calculation of pollutant loads. The Watershed Management Model (WMM), developed for the Part 2 NPDES Permit Application, will be used for these evaluations.

The sediment sampling data collected at the end of the permit period will be compared with the data collected at the beginning of the period. The two sets of data will be compared to identify baseline sediment quality, to determine relative differences between sediments in respective watersheds and to determine the progress Palm Beach County is making toward reducing pollutant discharge to surface water bodies.

## **Section 6 – Permit Modifications**

### ***6.1 Stormwater Management Plan Modifications***

Minor permit modifications were proposed by the co-permittees. These modifications consist of the following:

- Name change for Indian Trail Water Control District to Indian Trail Improvement District
- Name change for Acme Improvement District to Village of Wellington
- Deletion of the Town of Golfview as the municipality is no longer in existence as a public body
- FDOT requested that the permit be modified in the following areas:
  - 1) Pesticides/herbicides Section 3.6 – this activity should be modified to reflect that pesticide application/usage outside of FDOT’s right-of-way is outside of FDOT’s authority to control
  - 2) Illicits Section 3.7b – revise the field screening program from all outfalls or grid system to all major outfalls
  - 3) Construction Section 3.9.a – delete requirement for new drainage connection permits to provide a copy of the NPDES stormwater pollution prevention plan to the FDOT
  - 4) Construction Section 3.9.b. – modify the requirement for entities to sample and test suspicious discharges to having them notify the appropriate regulatory agency for further investigations and enforcement
- Palm Beach County requested deletion of inspection and monitoring of SWA transfer stations because these facilities are contained in a building that prevents exposure to precipitation and therefore, are not subject to the requirements of the NPDES program

### ***6.2 Monitoring Program Modifications***

Details of the monitoring program revisions are included in Section 5.3 of this annual report.

## **Section 7 – Fiscal Analysis**

Palm Beach County permittees have a history of involvement in stormwater management programs to reduce the discharge of pollutants to receiving water bodies. Many of these programs have been implemented through regulations developed by federal and state agencies in response to rapid growth and environmental awareness. Table 7-1 summarizes the co-permittees' costs in 1997 through 1998 for existing stormwater management programs and implementation of additional programs as a result of the NPDES permit. Budgets for these programs are conducted yearly by the co-permittees and approved by their respective governing entities. As shown in Table 7-1, a majority of the funding for these programs is from general revenues collected by *ad valorem* taxes. In recent years, municipal governments in Palm Beach County have created stormwater utilities to assist in providing a dedicated stormwater funding source. Currently, seven municipalities in Palm Beach County have stormwater utilities. The co-permittees indicated that this years' funding level will continue next year or have a slight increase. The co-permittees budgeted \$24,398,152 in FY97-FY98 for the stormwater-related activities. Not included in these costs were programs conducted by SFWMD and Palm Beach County, which are funded through general revenues collected from taxes and assessments to Palm Beach County residents.

Table 7-1  
Fiscal Analysis

Appendix No.	Permittee	1997-1998	Funding Source		
A	Palm Beach County DERM	\$1,407,370	<input checked="" type="checkbox"/> Assessments	<input checked="" type="checkbox"/> General Fund	<input type="checkbox"/> Utility
B	City of Atlantis	\$60,814	<input type="checkbox"/> Assessments	<input checked="" type="checkbox"/> General Fund	<input type="checkbox"/> Utility
C	City of Belle Glade	\$363,600	<input type="checkbox"/> Assessments	<input checked="" type="checkbox"/> General Fund	<input type="checkbox"/> Utility
D	City of Boca Raton	\$6,010,100	<input type="checkbox"/> Assessments	<input type="checkbox"/> General Fund	<input checked="" type="checkbox"/> Utility
E	City of Boynton Beach	\$500,000	<input type="checkbox"/> Assessments	<input type="checkbox"/> General Fund	<input checked="" type="checkbox"/> Utility
F	Town of Cloud Lake	\$3,625	<input type="checkbox"/> Assessments	<input checked="" type="checkbox"/> General Fund	<input type="checkbox"/> Utility
G	City of Delray Beach	\$124,473	<input type="checkbox"/> Assessments	<input type="checkbox"/> General Fund	<input checked="" type="checkbox"/> Utility
I	City of Greenacres	\$158,800	<input type="checkbox"/> Assessments	<input checked="" type="checkbox"/> General Fund	<input type="checkbox"/> Utility
J	Town of Gulf Stream	\$18,250	<input type="checkbox"/> Assessments	<input checked="" type="checkbox"/> General Fund	<input type="checkbox"/> Utility
K	Town of Haverhill	\$4,670	<input type="checkbox"/> Assessments	<input checked="" type="checkbox"/> General Fund	<input type="checkbox"/> Utility
L	Town of Highland Beach	\$5,700	<input type="checkbox"/> Assessments	<input checked="" type="checkbox"/> General Fund	<input type="checkbox"/> Utility
M	Town of Juno Beach	\$69,507	<input type="checkbox"/> Assessments	<input checked="" type="checkbox"/> General Fund	<input type="checkbox"/> Utility
N	Town of Jupiter	\$1,100,000	<input type="checkbox"/> Assessments	<input type="checkbox"/> General Fund	<input checked="" type="checkbox"/> Utility
O	Town of Jupiter Inlet Colony	\$20,000	<input type="checkbox"/> Assessments	<input checked="" type="checkbox"/> General Fund	<input type="checkbox"/> Utility
P	Town of Lake Clarke Shores	\$3,500	<input type="checkbox"/> Assessments	<input checked="" type="checkbox"/> General Fund	<input type="checkbox"/> Utility
Q	Town of Lake Park	\$173,770	<input type="checkbox"/> Assessments	<input checked="" type="checkbox"/> General Fund	<input type="checkbox"/> Utility
R	City of Lake Worth	\$413,350	<input type="checkbox"/> Assessments	<input type="checkbox"/> General Fund	<input checked="" type="checkbox"/> Utility
S	Town of Lantana	\$61,940	<input type="checkbox"/> Assessments	<input checked="" type="checkbox"/> General Fund	<input type="checkbox"/> Utility
T	Town of Manalapan	\$400	<input type="checkbox"/> Assessments	<input checked="" type="checkbox"/> General Fund	<input type="checkbox"/> Utility
U	Town of Mangonia Park	\$15,050	<input type="checkbox"/> Assessments	<input checked="" type="checkbox"/> General Fund	<input type="checkbox"/> Utility
V	Village of North Palm Beach	\$9,495	<input type="checkbox"/> Assessments	<input checked="" type="checkbox"/> General Fund	<input type="checkbox"/> Utility
W	Town of Ocean Ridge	\$16,000	<input type="checkbox"/> Assessments	<input checked="" type="checkbox"/> General Fund	<input type="checkbox"/> Utility
X	City of Pahokee	\$133,640	<input type="checkbox"/> Assessments	<input checked="" type="checkbox"/> General Fund	<input type="checkbox"/> Utility
Y	Town of Palm Beach	\$431,500	<input type="checkbox"/> Assessments	<input checked="" type="checkbox"/> General Fund	<input type="checkbox"/> Utility
Z	City of Palm Beach Gardens	\$35,000	<input type="checkbox"/> Assessments	<input checked="" type="checkbox"/> General Fund	<input type="checkbox"/> Utility
AA	Town of Palm Beach Shores	\$1,800	<input type="checkbox"/> Assessments	<input checked="" type="checkbox"/> General Fund	<input type="checkbox"/> Utility
BB	Village of Palm Springs	\$34,200	<input type="checkbox"/> Assessments	<input checked="" type="checkbox"/> General Fund	<input type="checkbox"/> Utility
CC	City of Riviera Beach	\$106,500	<input type="checkbox"/> Assessments	<input checked="" type="checkbox"/> General Fund	<input type="checkbox"/> Utility
DD	Village of Royal Palm Beach	\$225,000	<input type="checkbox"/> Assessments	<input checked="" type="checkbox"/> General Fund	<input type="checkbox"/> Utility
EE	City of South Bay	\$2,000	<input type="checkbox"/> Assessments	<input checked="" type="checkbox"/> General Fund	<input type="checkbox"/> Utility
FF	Town of South Palm Beach	\$1,000	<input type="checkbox"/> Assessments	<input checked="" type="checkbox"/> General Fund	<input type="checkbox"/> Utility
GG	Village of Tequesta	\$39,300	<input type="checkbox"/> Assessments	<input checked="" type="checkbox"/> General Fund	<input checked="" type="checkbox"/> Utility
HH	City of West Palm Beach	\$2,519,866	<input type="checkbox"/> Assessments	<input checked="" type="checkbox"/> General Fund	<input checked="" type="checkbox"/> Utility
II	Village of Wellington	\$170,710	<input checked="" type="checkbox"/> Assessments	<input type="checkbox"/> General Fund	<input type="checkbox"/> Utility
JJ	Indian Trail Improvement D.	\$95,000	<input checked="" type="checkbox"/> Assessments	<input type="checkbox"/> General Fund	<input type="checkbox"/> Utility
KK	N Palm Beach Heights WCD	\$150,000	<input checked="" type="checkbox"/> Assessments	<input type="checkbox"/> General Fund	<input type="checkbox"/> Utility
LL	Northern Palm Beach County	\$4,344,849	<input checked="" type="checkbox"/> Assessments	<input type="checkbox"/> General Fund	<input type="checkbox"/> Utility
MM	South Indian River WCD	\$35,000	<input checked="" type="checkbox"/> Assessments	<input type="checkbox"/> General Fund	<input type="checkbox"/> Utility
NN	FDOT- District Four	\$5,532,373	<input type="checkbox"/> Assessments	<input checked="" type="checkbox"/> General Fund	<input type="checkbox"/> Utility
	<b>Total</b>	<b>\$24,398,152</b>			

