ANNUAL REPORT FORM FOR INDIVIDUAL NPDES PERMITS FOR MUNICIPAL SEPARATE STORM SEWER SYSTEMS (RULE 62-624.600(2), F.A.C.)

- This Annual Report Form must be completed and submitted to the Department to satisfy the annual reporting requirements established in Rule 62-621.600, F.A.C.
- Submit this fully completed and signed form and any REQUIRED attachments by mail to the address in the box at right.
- Refer to the Form Instructions for guidance on completing each section.
- **Please print or type information in the appropriate areas below.**

Submit the form and attachments to:
Florida Department of Environmental Protection
Mail Station 2500
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

SECTION I. BACKGROUND INFORMATION			
A.	Permittee Name: City of Boynton Beach		
B.	Permit Name: Palm Beach County Municipal Separate Storm Sewer System		
C.	Permit Number: FLS000018-003 (Cycle 3)		
D.	Annual Report Year: ☒ Year 1 ☐ Year 2 ☐ Year 3 ☐ Year 4 ☐ Year 5 ☐ Other, specify Year:		
E.	Reporting Time Period (month/year): October/ 2010 through September / 2011		
F.	Name of the Responsible Authority: Kofi A. Boateng, P.E.		
	Title: Director of Utilities		
	Mailing Address: 124 East Woolbright Road		
	City: Boynton Beach	Zip Code: 33435	County: Palm Beach
	Telephone Number: (561) 742-6401	Fax Number: (561) 742-6298	
	E-mail Address: boatengk@bbfl.us		
G.	Name of the Designated Stormwater Management Program Contact (if different from Section I.F above): Christopher J. Roschek, P.E.		
	Title: Engineering Division Manager		
	Department: Utilities Department		
	Mailing Address: 124 East Woolbright Road		
	City: Boynton Beach	Zip Code: 33435	County: Palm Beach
	Telephone Number: (561) 742-6413	Fax Number: (561) 742-6298	
	E-mail Address: roschekc@bbfl.us		

SECTION II. MS4 MAJOR OUTFALL INVENTORY (Not Applicable In Year 1)	
A.	Number of outfalls ADDED to the outfall inventory in the current reporting year (insert "0" if none): 0 (Does this number include non-major outfalls? ☐ Yes ☐ No ☒ Not Applicable)
B.	Number of outfalls REMOVED from the outfall inventory in the current reporting year (insert "0" if none): 0 (Does this number include non-major outfalls? ☐ Yes ☐ No ☒ Not Applicable)
C.	Is the change in the total number of outfalls due to lands annexed or vacated? ☐ Yes ☐ No ☒ Not Applicable

SECTION III. MONITORING PROGRAM

A.	Provide a brief statement as to the status of monitoring plan implementation: The monitoring plan is carried out as a joint effort by the Palm Beach County Co-permittees. Please see the Palm Beach County Joint Annual Report for the monitoring information.
B.	Provide a brief discussion of the monitoring results to date: • Please see the Palm Beach County Joint Annual Report for the monitoring information. • See Part V of the permit for the monitoring requirements.
C.	Attach a monitoring data summary, as required by the permit.

SECTION IV. FISCAL ANALYSIS

A.	Total expenditures for the NPDES stormwater management program for the current reporting year: $ 630,904.00
B.	Total budget for the NPDES stormwater management program for the subsequent reporting year: $ 618,734.00

SECTION V. MATERIALS TO BE SUBMITTED WITH THIS ANNUAL REPORT FORM

Only the following materials are to be submitted to the Department along with this fully completed and signed Annual Report Form (check the appropriate box to indicate whether the item is attached or is not applicable):

Attached	N/A	***DEP Note: Please complete Checklists A & B at the end of the tailored form.***
☐	☒	Any additional information required to be submitted in this current annual reporting year in accordance with Part III.A of your permit that is not otherwise included in Section VII below.
☒	☐	A monitoring data summary as directed in Section III.C above and in accordance with Rule 62-624.600(2)(c), F.A.C. (Please see the Palm Beach County Joint Annual Report)
☒	☐	Year 1 ONLY: An inventory of all known major outfalls and a map depicting the location of the major outfalls (on DVD+R) in accordance with Rule 62-624.600(2)(a), F.A.C.
☐	☒	Year 3 ONLY: The estimates of pollutant loadings and event mean concentrations for each major outfall or each major watershed in accordance with Rule 62-624.600(2)(b), F.A.C.
☐	☒	Year 4 ONLY: Permit re-application information in accordance with Rule 62-624.420(2), F.A.C.

DO NOT SUBMIT ANY OTHER MATERIALS

(such as records and logs of activities, monitoring raw data, public outreach materials, etc.)

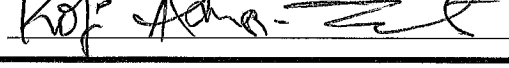
SECTION VI. CERTIFICATION STATEMENT AND SIGNATURE

The Responsible Authority listed in Section I.F above must sign the following certification statement, as per Rule 62-620.305, F.A.C:

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

Name of Responsible Authority (type or print): Kofi A. Boateng, P.E.

Title: Director of Utilities

Signature:  Date: 3 / 28 / 2012

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE

A. Permit Citation/ SWMP Element	B. Permit Requirement/Quantifiable SWMP Activity	C. Number of Activities Performed	D. Documentation / Record	E. Entity Performing the Activity	F. Comments
Part III.A.1	**Structural Controls and Stormwater Collection Systems Operation**				

Maintain an up-to-date inventory of the structural controls and roadway stormwater collection structures operated by the permittee, including, at a minimum, all of the types of control structures listed in Table II.A.1.a of the permit. Report the current known inventory.

DEP Note: The permittee needs to "customize" this section by adding any structural controls to the list below that are part of the permittee's MS4 currently or are planned for the future. The permittee may remove any structural controls listed that it does not have currently or will likely not have during this permit cycle. Please see the attached description of each type of structure. In addition, the permittee may choose its own unit of measurement for each structural control to be consistent with the unit of measurement in the documentation. Unit options include: miles, linear feet, acres, etc.

Report the number of inspection and maintenance activities conducted for each type of structure included in Table II.A.1.a, and the percentage of the total inventory of each type of structure inspected and maintained. If the minimum inspection frequencies set forth in Table II.A.1.a were not met, provide as an attachment an explanation of why they were not and a description of the actions that will be taken to ensure that they will be met.

DEP Note: If the minimum inspection frequencies set forth in Table II.A.1.a of the permit were not met for one or more type of structure, the permittee must provide as an attachment an explanation of why they were not and a description of the actions that will be taken to ensure that they will be met. Please provide the title of the attached explanation in Column D and the name of the entity who finalized the explanation in Column E.

Type of Structure	Number of Activities Performed					Documentation / Record	Entity Performing the Activity	Comments
	Total Number of Structures	Number of Inspections	Percentage Inspected	Number of Maintenance Activities	Percentage Maintained			
Dry retention systems	3	84	100%	414	100%	Inspection Form for Structural Controls Retention/ Detention Pond and Master Pond Drainage Maintenance Form	Utilities Stormwater Division/ Forestry & Grounds/Public Works Dept.	Inspections and maintenance includes water levels, littoral shelf, side slope erosion, plant vegetation, mowing, pruning, irrigation, and fertilization
Exfiltration trench / French drains (linear feet)	2,000 (est.)	348 lf	17.4%	348 lf	17.4%	Exfiltration Trench Inspection Form	Utilities Stormwater Division	Maintenance includes installation of

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Permit Citation/ SWMP Element	Permit Requirement/Quantifiable SWMP Activity				Number of Activities Performed		Documentation / Record	Entity Performing the Activity	Comments
									new exfiltration trench
	Grass treatment swales (miles)	30 (est.)	6.90 miles	23%	6.90 miles	23%	NPDES Activities October 1, 2010 thru September 30, 2011	Utilities Stormwater Division	Staff inspections/new swales and sod
	Dry detention systems	7	820	100%	820	100%	Inspection Form for Structural Controls Retention/ Detention Pond and Master Pond Drainage Maintenance Form	Utilities Stormwater Division/ Forestry & Grounds/Public Works Dept.	Inspections and maintenance includes water levels, littoral shelf, side slope erosion, plant vegetation, mowing, pruning, irrigation, and fertilization
	Wet detention systems	7	918	100%	918	100%	Inspection Form for Structural Controls Retention/ Detention Pond and Master Pond Drainage Maintenance Form	Utilities Stormwater Division/ Forestry & Grounds/Public Works Dept.	Inspections and maintenance includes water levels, littoral shelf, side slope erosion, plant vegetation, mowing, pruning, irrigation, and fertilization
	Pollution control boxes	20	20	100%	20	100%	NPDES Activities October 1, 2010 thru September 30, 2011	Utilities Stormwater Division	Staff inspections and maintenance
	Stormwater pump stations	3	36	100%	36	100%	NPDES Stormwater Permit Structural Controls Inspection Form	Utilities Pump Station Division	Staff inspections and maintenance
	Major stormwater outfalls	3	0	0%	0	0%	NPDES Activities October 1, 2010 thru September 30, 2011	Utilities Stormwater Division	The major outfalls were identified as part of the preparation of this Annual Report. Inspections and

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									maintenance will be performed going forward.
	Weirs or other control structures	7	156	100%	156	100%	NPDES Activities October 1, 2010 thru September 30, 2011	Utilities Stormwater Division	Staff inspections and maintenance
	MS4 pipes / culverts (miles)	22 (est.)	4.64	21%	4.64	21%	NPDES Activities October 1, 2010 thru September 30, 2011	Utilities Stormwater Division	MS4 Pipe Cleaned, Televised, and Inspected
	Inlets / catch basins / grates	500	176	35%	176	35%	NPDES Activities October 1, 2010 thru September 30, 2011	Utilities Stormwater Division	Staff inspections and maintenance
	Ditches / conveyance swales (miles)	0	N/A	N/A	N/A	N/A	N/A	N/A	There are no ditches or conveyance swales in our system
	ATTACH explanation if any of the minimum inspection frequencies in Table II.A.1.a were <u>not</u> met						Attachment 1 – Major Stormwater Outfalls	Utilities Department	Refer to Attachment 1
	Year 1 ONLY: Attach a map of all known major outfalls as per Rule 62-624.600(2)(a), F.A.C.						City of Boynton Beach Major Outfalls, Contributing Areas, and Land Use Map	Utilities Department	Electronic files (PDF and GIS) on DVD+R
Part III.A.2	**Areas of New Development and Significant Redevelopment**								
	Report the number of new development and significant redevelopment projects reviewed by the permittee for post-development stormwater considerations. *<u>DEP Note:</u> Please provide an explanation in Column F for any "0" reported in Column C. This provision <u>DOES NOT APPLY</u> to Indian Trail Improvement District (ITID), Northern Palm Beach County Improvement District (NPBCID), South Indian River Water Control District (SIRWCD), and FDOT.*								
	Number of new development / significant redevelopment projects reviewed				9		NPDES Project List	Engineering, Planning & Zoning, and Utilities Dept.	Staff reviews
	Provide in the Year 2 Annual Report the summary report of the review of local codes activity. Provide in the Year 4 Annual Report the follow-up report on plan implementation of modifying codes to allow low impact design BMPs. *<u>DEP Note:</u> Refer to Part III.A.2 of the permit for details regarding what the review entails, and what must be included in the summary report and follow-up report. Please provide the title of the attached report in Column D and the name of the entity who finalized the report in Column E. This provision <u>DOES NOT APPLY</u> to*								

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	ITID, NPBCID, SIRWCD, and FDOT.				
	Year 2 ONLY: Attach the summary report of the review activity		N/A	N/A	N/A
	Year 4 ONLY: Attach the follow-up report on plan implementation		N/A	N/A	N/A
Part III.A.3	**Roadways**				
	Annually review (and revise, as needed) and implement the permittee's written procedures for the litter control program(s) for public streets, roads, and highways, including rights-of-way, employed within the permittee's jurisdictional area and properly dispose of collected material. Implement the program on a monthly, or on an as needed, basis. Report on the litter control program, including the frequency of litter collection, an estimate of the total number of road miles cleaned or amount of area covered by the activities, and an estimate of the quantity of litter collected. *DEP Note: Please provide an explanation in Column F for any "0" reported in Column C. In addition, the permittee may choose its own units of measurement for the reporting items. Unit options for the amount of litter include: bags, cubic yards, pounds, tons. Unit options for the amount of area covered by the activity include: square feet, linear feet, yards, miles, acres. If all litter collection is performed by staff or by contractors, but not by both, please remove the non-applicable reporting items.*				
	CONTRACTOR Litter Control Program: Frequency of litter collection	Monthly	Invoices and Maintenance Schedule	Contractors to the City of Boynton Beach	Outside contract
	CONTRACTOR Litter Control Program: Estimated amount of area maintained (linear feet)	113,271 LF (21.45 miles)	Invoices and Maintenance Schedule	Contractors to the City of Boynton Beach	Outside contract
	CONTRACTOR Litter Control Program: Estimated amount of litter collected (cubic yards)	N/A	Invoices and Maintenance Schedule	Contractors to the City of Boynton Beach	Amount of litter was not quantified, but will be documented for the next report
	If an Adopt-A-Road or similar program is implemented, report the total number of road miles cleaned and an estimate of the quantity of litter collected. *DEP Note: The permittee may choose its own unit of measurement for the amount of litter collected. Unit options include: bags, cubic yards, pounds, tons. If an Adopt-A-Road or similar program is not implemented by the permittee, please note that in Column F but do not remove the Adopt-A-Road Program reporting items.*				
	Keep PBC Beautiful Trash Pick-up Events: Total miles cleaned	N/A	N/A	N/A	Keep PBC Beautiful and Adopt-A-Road Program are not implemented by the City
	Keep PBC Beautiful Trash Pick-up Events: Estimated amount of litter collected (cubic yards)	N/A	N/A	N/A	Keep PBC Beautiful and Adopt-A-Road Program are not implemented by the City

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	Adopt-A-Road Program: Total miles cleaned	N/A	N/A	N/A	Keep PBC Beautiful and Adopt-A-Road Program are not implemented by the City
	Adopt-A-Road Program: Estimated amount of litter collected (cubic yards)	N/A	N/A	N/A	Keep PBC Beautiful and Adopt-A-Road Program are not implemented by the City
	Report on the street sweeping program, including the frequency of the sweeping, total miles swept, an estimate of the quantity of sweepings collected, and the total nitrogen (TN) and total phosphorus (TP) loadings that were removed by the collection of sweepings. If no street sweeping program is implemented, provide the explanation of why not in the Year 1 Annual Report. *DEP Note: Please provide an explanation in Column F for any "0" reported in Column C. Also, the permittee may choose its own unit of measurement for the amount of sweeping material collected. Unit options include: cubic yards, pounds, tons.* *DEP Note: If the permittee has curbs and gutters but no street sweeping program is implemented, the permittee must provide an explanation of why not in the Year 1 Annual Report. Refer to Part III.A.3 of the permit for the information that must be included in the explanation (including the alternate BMPs used or planned in lieu of street sweeping). Please provide the title of the attached explanation in Column D and the name of the entity who finalized the explanation in Column E.*				
	Frequency of street sweeping	Weekly	NPDES Street Sweeping Report	Streets/Forestry & Grounds/Public Works Dept.	Maintenance Records
	Total miles swept (per year)	3,929 miles	NPDES Street Sweeping Report	Streets/Forestry & Grounds/Public Works Dept.	Maintenance Records
	Estimated quantity of sweeping material collected (cubic yards)	390	NPDES Street Sweeping Report	Streets/Forestry & Grounds/Public Works Dept.	Maintenance Records
	Total nitrogen loadings removed (pounds)	168	NPDES Street Sweeping Report	Utilities Department	Estimated based on DEP spreadsheet
	Total phosphorus loadings removed (pounds)	108	NPDES Street Sweeping Report	Utilities Department	Estimated based on DEP spreadsheet
	Year 1 ONLY: If have curbs and gutters, attach explanation of why no street sweeping program and the alternate BMPs used or planned		N/A	N/A	N/A
	Annually review (and revise, as needed) and implement the permittee's written standard practices to reduce the pollutants in stormwater runoff from areas associated with road repair and maintenance, and from permittee-owned or operated equipment yards and maintenance shops that support road maintenance activities. Report the number of applicable facilities and the number of inspections conducted for each facility.				

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	DEP Note: The permittee needs to "customize" this section by listing the names of the applicable facilities in Column B and the number of inspections of each facility in Column C. Add more rows if necessary. If "0" is reported in Column C for the number of inspections conducted and the permittee has one or more applicable facilities, please provide an explanation in Column F for why no inspections were conducted. In addition, if the same facility is applicable under both Parts III.A.3 and III.A.5 of the permit, the same site inspection can count towards both inspection requirements as long as it covers the applicable waste area(s). Be sure to report the site inspection under both Parts III.A.3 and III.A.5.				
		Number of Inspections			
	Name of facility #1: Public Works Compound	1	Municipal Maintenance Yard Inspection Checklist	Utilities Staff	Inspection performed at Public Works Complex
	Name of facility #2: East Water Treatment Plant	1	Industrial/ Commercial User Inspection	Utilities Staff	Inspection performed at East Water Treatment Plant
	Name of facility #3: West Water Treatment Plant	1	Industrial/ Commercial User Inspection	Utilities Staff	Inspection performed at West Water Treatment Plant
Part III.A.4	**Flood Control Projects**				
	Report the total number of flood control projects that were constructed by the permittee during the reporting period and the number of those projects that did NOT include stormwater treatment. The permittee shall provide a list of the projects where stormwater treatment was not included with an explanation for each of why it was not. Report on any stormwater retrofit planning activities and the associated implementation of retrofitting projects to reduce stormwater pollutant loads from existing drainage systems that do not have treatment BMPs. *DEP Note:* A "stormwater retrofit project" is one implemented primarily to provide stormwater treatment. *DEP Note: The status of the flood control and retrofit projects should be reported as of the last day of the applicable reporting period. Therefore, there should be no duplication for those reported as planned, for those reported as under construction and for those reported as completed.* *DEP Note: If applicable, please provide the title of the attached list of flood control projects that did not include stormwater treatment in Column D and the name of the entity who finalized the list in Column E.*				
	Flood control projects completed during the reporting period	2	CIP Project List	Utilities Dept.	Staff oversight
	Flood control projects completed during the reporting period that did not include stormwater treatment	0	N/A	N/A	N/A
	ATTACH a list of the flood control projects that did not include stormwater treatment and an explanation for each of why it was not		N/A	N/A	N/A
	Stormwater retrofit projects planned	0	N/A	N/A	Refer to the new swales and

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					exfiltration trench reported in Section III.A.1.
	Stormwater retrofit projects under construction during the reporting period	0	N/A	N/A	Refer to the new swales and exfiltration trench reported in Section III.A.1.
	Stormwater retrofit projects completed during the reporting period	0	N/A	N/A	Refer to the new swales and exfiltration trench reported in Section III.A.1.
Part III.A.5	**Municipal Waste Treatment, Storage, and Disposal Facilities Not Covered by an NPDES Stormwater Permit**				
	Annually review (and revise, as needed) and implement the permittee's written procedures for inspections and the implementation of measures to control discharges from the following facilities that are not otherwise covered by an NPDES stormwater permit: • Operating municipal landfills; • Municipal waste transfer stations; • Municipal waste fleet maintenance facilities; and • Any other municipal waste treatment, waste storage, and waste disposal facilities. Report the number of applicable facilities and the number of the inspections conducted for each facility. *DEP Note: The permittee needs to "customize" this section by listing the names of the applicable facilities in Column B and the number of inspections of each facility in Column C. Add more rows if necessary. If "0" is reported in Column C for the number of inspections conducted and the permittee has one or more applicable facilities, please provide an explanation in Column F for why no inspections were conducted. An applicable facility under Part III.A.5 includes, but is not limited to, those facilities/yards where street sweeping material and/or yard waste are temporary stockpiled, and where solid waste collection vehicles are parked and/or maintained. In addition, if the same facility is applicable under both Parts III.A.3 and III.A.5 of the permit, the same site inspection can count towards both inspection requirements as long as it covers the applicable waste area(s). Be sure to report the site inspection under both Parts III.A.3 and III.A.5.*				
		Number of Inspections			
	Name of facility #1: Public Works Compound	1	Municipal Maintenance Yard Inspection Checklist	Utilities Staff	Inspection performed at Public Works Complex
	Name of facility #2: East Water Treatment Plant	1	Industrial/ Commercial User Inspection	Utilities Staff	Inspection performed at East Water Treatment Plant
	Name of facility #3: West Water Treatment Plant	1	Industrial/ Commercial User	Utilities Staff	Inspection performed at

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			Inspection		West Water Treatment Plant
Part III.A.6	**Pesticides, Herbicides, and Fertilizer Application**				
	Continue to require proper certification and licensing by the Florida Department of Agriculture and Consumer Services (FDACS) for all applicators contracted to apply pesticides, herbicides, or fertilizers on permittee-owned property, as well as any permittee personnel employed in the application of these products. Report the number of permittee personnel applicators and contracted commercial applicators of pesticides and herbicides who are FDACS certified / licensed. Report the number of permittee personnel and contractors who have been trained through the Green Industry BMP Program, and the number of contracted commercial applicators of fertilizer who are FDACS certified / licensed. *DEP Note: If "0" is reported in Column C for any of the reporting items, please include in Column F an explanation of why training was not provided to / obtained by personnel and contractors during the applicable reporting year, the most recent year that training / certification was previously provided / obtained, and the names of the personnel and contractors previously trained / certified.*				
	PERSONNEL: Florida Department of Agriculture and Consumer Services (FDACS) certified applicators of pesticides and herbicides	4	FDACS Certification	City staff	Copies of certifications on file
	CONTRACTORS: FDACS certified / licensed applicators of pesticides and herbicides	2	FDACS Certification	Contractors	Copies of certifications on file
	CONTRACTORS: FDACS certified / licensed applicators of fertilizer	2	FDACS Certification	Contractors	Copies of certifications on file
	PERSONNEL: Green Industry BMP Program training completed	0	N/A	N/A	None
	CONTRACTORS: Green Industry BMP Program training completed	0	N/A	N/A	None
	Pursuant to SB 2080 (2009), all local governments are encouraged to adopt a Florida-friendly Landscaping Ordinance similar to the one set forth in the document "Florida-friendly Guidance Models for Ordinances, Covenants and Restrictions." If the broader Florida-friendly ordinance described above is not adopted, then all local governments within the watershed of a nutrient-impaired water body shall adopt the Department's Model Ordinance for Florida-Friendly Fertilizer Use on Urban Landscapes pursuant to SB 494 (2009) or an ordinance that includes all of the requirements set forth in the Model Ordinance. The ordinance shall be adopted within 24 months of the date of permit issuance. Provide a copy of the adopted ordinance with the subsequent Year 1 or Year 2 Annual Report. *DEP Note: This provision DOES NOT APPLY to ITID, NPBCID, SIRWCD, and FDOT. For all other permittees, if this provision is not applicable because the permittee is not within the watershed of a nutrient-impaired water body, then please indicate that in Column F, but do not remove this reporting item.* *DEP Note: Please provide the title and citation of the ordinance in Column D, and the name of the entity who finalized the ordinance in Column E.*				
	Year 1 or Year 2 ONLY: Attach copy of adopted Florida-friendly ordinance		Ordinance 11-019	City Staff	Ordinance is attached
	During Year 1 of the permit, develop and implement a written public education and outreach program plan to encourage citizens to reduce their use of pesticides, herbicides, and fertilizers. Report on the public education and outreach activities that are performed or sponsored by the permittee within the permittee's jurisdiction to encourage citizens to reduce their use of pesticides, herbicides, and fertilizers, including the type and number of activities conducted, the type and number of materials distributed, the percentage of the population reached by the activities in total, and the number of Web site visits (if applicable). Activities performed under the Florida				

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	Yards and Neighborhoods (FYN) program should only be reported if the permittee is contributing funding towards the FYN staff and program within its jurisdiction. *DEP Note: The permittee should "customize" the list of public outreach activities by removing items or adding items to the list below as appropriate to their particular public outreach program. However, the reporting item of "Estimated percentage of the population reached by the activities in total" must remain unless the permittee chooses to reference the PBC Joint AR, as demonstrated in the first reporting item below. The permittee may add more specifics to the reporting items, such as the name of the brochure or newsletter distributed. If "0" is reported in Column C for all the reporting items, and the PBC Joint AR is not referenced, please include in Column F an explanation for why no outreach was performed.* *DEP Note: All the permittees may refer to the PBC Joint AR in place of reporting individual items as demonstrated in the row below. The permittees may remove all reporting items except the first reporting item if they include reference to the PBC Joint AR. However, a permittee can choose to also report any outreach activities it performs in addition to the joint effort – in such a case, please keep the reporting items that are applicable.* *DEP Note: Indicate under Column E "Entity Performing the Activity" if FYN or IFAS is performing any of the reported public education and outreach activities. In addition, please complete the following line:* **FYN PROGRAM FUNDING: Permittee Provides Funding? ☐ Yes ☒ No Amount of Funding = $N/A**				
	Public education and outreach program	The public outreach and education plan is carried out as a joint effort by the Palm Beach County Co-permittees. Please see the Palm Beach County Joint Annual Report for the public education and outreach information.			
	Brochures/Flyers/Fact sheets distributed	1	Water Quality Report	Utilities Department	47,772 Flyers Distributed
	Public displays (e.g., kiosks, storyboards, posters, etc.)	1	Earth Day week-long display	Utilities Department	Passive display table at City Hall
	~~During Year 1 of the permit, develop and implement a written plan for the training of all permittee personnel applicators and contracted applicators to emphasize the stormwater implications of pesticide, herbicide and fertilizer application. Follow-up training shall be provided annually. Training to obtain or maintain an FDACS certificate and/or license does not satisfy this requirement. Report the number of permittee personnel applicators and contracted applicators who participated in training on the stormwater implications of pesticide, herbicide and fertilizer application (both in-house and outside training).~~ ***DEP Note: This permit requirement has been removed from other Phase I MS4 permits that were reissued after the Palm Beach County MS4 permit since recent changes to the FDACS certification / licensing program have allowed it to adequately fulfill this requirement. Therefore, at this time, this permit requirement does not need to be implemented.***				
Part III.A.7.a	**Illicit Discharges and Improper Disposal — Inspections, Ordinances, and Enforcement Measures**				
	Where applicable, strengthen the legal authority to conduct inspections, conduct monitoring, control illicit discharges, illicit connections, illegal dumping and spills into the MS4 and to require compliance with conditions in ordinances, permits, contracts, and orders. Report amendments, as needed. *DEP Note: If applicable, please provide the title of the attached report in Column D and the name of the entity who finalized the report in Column E.*				
	ATTACH a report on any amendments to the applicable legal authority		N/A	N/A	N/A
Part III.A.7.c	**Illicit Discharges and Improper Disposal — Investigation of Suspected Illicit Discharges and/or Improper Disposal**				

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
A.	**B.**	**C.**	**D.**	**E.**	**F.**
Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
	During Year 1 of the permit, develop and implement a written proactive inspection program plan for identifying and eliminating sources of illicit discharges, illicit connections, or dumping to the MS4. Report on the proactive inspection program, including the number of inspections conducted, the number of illicit activities found, and the number and type of enforcement actions taken. *DEP Note: If "0" is reported in Column C for the first reporting item, please include an explanation in Column F for why no proactive inspections were performed. In addition, the permittee should re-word the "NOVs / warning letters / citations issued" reporting item to more accurately reflect its particular initial enforcement activity, if necessary.* *DEP Note: Proactive inspections may include, for example, suspect areas (e.g., industrial areas), commercial businesses (e.g., restaurants, car washes, service stations, laundries / dry cleaners, auto body shops, mobile carpet cleaners) or temporary activities (e.g., special events / fairs / circus) that would not otherwise be inspected during routine inspections and maintenance of the MS4, in association with high risk industrial facilities or construction sites, or in response to citizen or staff reports.* *DEP Note: Refer to Part III.A.7.c of the permit for what must be included in the written proactive inspection program plan. Please provide the title of the attached plan in Column D and the name of the entity who finalized the plan in Column E.*				
	Proactive inspections for suspected illicit discharges / connections / dumping	176	NPDES Activities October 1, 2010 thru September 30, 2011	Utilities Stormwater Division	Concurrent with inlet/catch basin/ grate inspections
	Illicit discharges / connections / dumping found during a proactive inspection	0	N/A	N/A	None found
	Notices of Violation (NOVs) / warning letters / citations issued for illicit discharges / connections / dumping found during a proactive inspection	0	N/A	N/A	None issued
	Fines issued for illicit discharges / connections / dumping found during a proactive inspection	0	N/A	N/A	None issued
	Year 1 ONLY: Attach the written proactive inspection program plan		City of Boynton Beach Proactive Inspection Program	Utilities Staff	Plan is attached
	Annually review (and revise, as needed) and implement the permittee's written procedures to conduct reactive investigations to identify and eliminate the source(s) of illicit discharges, illicit connections or improper disposal to the MS4, based on reports received from permittee personnel, contractors, citizens, or other entities regarding suspected illicit activity. Report on the reactive investigation program as it relates to responding to reports of suspected illicit discharges, including the number of reports received, the number of investigations conducted, the number of illicit activities found, and the number and type of enforcement actions taken. *DEP Note: If the number of reports received differs from the number of reactive investigations, please provide an explanation for the discrepancy in Column F. In addition, the permittee should re-word the "NOVs / warning letters / citations issued" reporting item to more accurately reflect its particular initial enforcement activity, if necessary.*				
	Reports of suspected illicit connections / discharges / dumping received	2	Customer Complaint/Email	Environmental Inspector	Staff investigations
	Reactive investigations of reports of suspected illicit discharges/ connections / dumping	0	Environmental Inspection Form	Environmental Inspector	None found
	Illicit discharges / connections / dumping found during a reactive investigation	0	N/A	N/A	None found
	Notices of Violation (NOVs) / warning letters / citations issued for illicit	0	N/A	N/A	None issued

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE

A. Permit Citation/ SWMP Element	B. Permit Requirement/Quantifiable SWMP Activity	C. Number of Activities Performed	D. Documentation / Record	E. Entity Performing the Activity	F. Comments
	discharges / connections / dumping found during a reactive investigation				
	Fines issued for illicit discharges / connections / dumping found during a reactive investigation	0	N/A	N/A	None issued
	During Year 1 of the permit, develop and implement a written plan for the training of all appropriate permittee personnel (including field crews, fleet maintenance staff, and inspectors) and contractors to identify and report conditions in the stormwater facilities that may indicate the presence of illicit discharges / connections / dumping to the MS4. Follow-up training shall be provided annually. Report the number and type of training activities, and the number of permittee personnel and contractors trained (both in-house and outside training). *DEP Note: If "0" is reported for either reporting item, please include in Column F an explanation of why training was not provided to / obtained by personnel and contractors during the applicable reporting year, the most recent year that training was previously provided / obtained, and the names of the personnel and contractors previously trained.*				
	Personnel trained — Initial Training: 0; Refresher Training: 214		Attendance List	Fire Department Summary for Stormwater Report and March 16, 2011 – EXCAL Videos "Storm Warnings" and "Spills & Skills" shown by Steering Committee	Fire Department and City staff
	Contractors trained — Initial Training: 0; Refresher Training: 0		N/A	N/A	No contractors were trained
Part III.A.7.d	**Illicit Discharges and Improper Disposal — Spill Prevention and Response**				
	Annually review (and revise, as needed) and implement the permittee's written spill-prevention/spill-response plan and procedures to prevent, contain, and respond to spills that discharge into the MS4. Report on the spill prevention and response activities, including the number of spills addressed. *DEP Note: The permittee may report the number of hazardous material spills separately from the number of non-hazardous material spills, or report one combined number, to more accurately reflect its tracking of these spills.*				
	Hazardous and non-hazardous material spills responded to	29	Fire Department Summary for Stormwater Report	Fire Department	Firefighter response
	During Year 1 of the permit, develop and implement a written plan for the training of all appropriate permittee personnel (including field crews, firefighters, fleet maintenance staff and inspectors) and contractors on proper spill prevention, containment, and response techniques and procedures. Follow-up training shall be provided annually. Report the number and type of training activities, and the number of permittee personnel and contractors trained (both in-house and outside training). *DEP Note: If "0" is reported for either reporting item, please include in Column F an explanation of why training was not provided to / obtained by personnel and contractors during the applicable reporting year, the most recent year that training was previously provided / obtained, and the names of the personnel and*				

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE						
A.	**B.**		**C.**	**D.**	**E.**	**F.**
Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**		**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
	contractors previously trained.					
		Initial Training	**Refresher Training**			
	Personnel trained	0	214	Attendance List	Fire Department Summary for Stormwater Report and March 16, 2011 – EXCAL Videos "Storm Warnings" and "Spills & Skills" shown by Steering Committee	Fire Department and City staff
	Contractors trained	0	0	N/A	N/A	No contractors were trained
Part III.A.7.e	**Illicit Discharges and Improper Disposal — Public Reporting**					
	During Year 1 of the permit, develop and implement a written public education and outreach program plan to promote, publicize, and facilitate public reporting of the presence of illicit discharges and improper disposal of materials into the MS4. Report on the public education and outreach activities that are performed or sponsored by the permittee within the permittee's jurisdiction to encourage the public reporting of suspected illicit discharges and improper disposal of materials, including the type and number of activities conducted, the type and number of materials distributed, the percentage of the population reached by the activities in total, and the number of Web site visits (if applicable). *DEP Note: The permittee should "customize" the list of public outreach activities by removing items or adding items to the list below as appropriate to their particular public outreach program. However, the reporting item of "Estimated percentage of the population reached by the activities in total" must remain unless the permittee chooses to reference the PBC Joint AR, as demonstrated in the first reporting item below. The permittee may add more specifics to the reporting items, such as the name of the brochure or newsletter distributed. If "0" is reported in Column C for all the reporting items, and the PBC Joint AR is not referenced, please include in Column F an explanation for why no outreach was performed.* *DEP Note: All the co-permittees may refer to the PBC Joint AR in place of reporting individual items as demonstrated in the first line below. The co-permittees may remove all the other reporting items except the first one if they include reference to the PBC Joint AR. However, a permittee can choose to also report any outreach activities it performs in addition to the joint effort – in such a case, please keep the reporting items that are applicable.*					
	Public education and outreach program		The public outreach and education plan is carried out as a joint effort by the Palm Beach County Co-permittees. Please see the Palm Beach County Joint Annual Report for the public education and outreach information.			
	Brochures/Flyers/Fact sheets distributed		1	Water Quality Report	Utilities Department	47,772 Flyers Distributed
	Public displays (e.g., kiosks, storyboards, posters, etc.)		1	Earth Day week-long display	Utilities Department	Passive display table at City Hall
Part III.A.7.f	**Illicit Discharges and Improper Disposal — Oils, Toxics, and Household Hazardous Waste Control**					

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
A.	**B.**	**C.**	**D.**	**E.**	**F.**
Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
	During Year 1 of the permit, develop and implement a written public education and outreach program plan to encourage the proper use and disposal of used motor vehicle fluids, leftover hazardous household products, and lead acid batteries. Report on the public education and outreach activities that are performed or sponsored by the permittee within the permittee's jurisdiction to encourage the proper use and disposal of oils, toxics, and household hazardous waste, including the type and number of activities conducted, the type and number of materials distributed, the amount of waste collected / recycled / properly disposed, the percentage of the population reached by the activities in total, and the number of Web site visits (if applicable). *DEP Note: The permittee should "customize" the list of public outreach activities by removing items or adding items to the list below as appropriate to their particular public outreach program. However, the reporting item of "Estimated percentage of the population reached by the activities in total" must remain unless the permittee chooses to reference the PBC Joint AR, as demonstrated in the first reporting item below. The permittee may add more specifics to the reporting items, such as the name of the brochure or newsletter distributed. If "0" is reported in Column C for all the reporting items, and the PBC Joint AR is not referenced, please include in Column F an explanation for why no outreach was performed.* *DEP Note: All the co-permittees may refer to the PBC Joint AR in place of reporting individual items as demonstrated in the first line below. The co-permittees may remove all the other reporting items if they include reference to the PBC Joint AR. However, a permittee can choose to also report any outreach activities it performs in addition to the joint effort – in such a case, please keep the reporting items that are applicable.*				
	Public education and outreach program	The public outreach and education plan is carried out as a joint effort by the Palm Beach County Co-permittees. Please see the Palm Beach County Joint Annual Report for the public education and outreach information.			
	Brochures/Flyers/Fact sheets distributed	1	Water Quality Report	Utilities Department	47,772 Flyers Distributed
	Public displays (e.g., kiosks, storyboards, posters, etc.)	1	Earth Day week-long display	Utilities Department	Passive display table at City Hall
Part III.A.7.g	**Illicit Discharges and Improper Disposal — Limitation of Sanitary Sewer Seepage**				
	Annually review (and revise, as needed) and implement the permittee's written procedures to reduce or eliminate sanitary wastewater contamination into the MS4, including discharges to the MS4 from sanitary sewer overflows (SSOs) and from inflow / infiltration from collection / transmission systems and/or septic tank systems. Advise the appropriate utility owner of a violation if constituents common to wastewater contamination are discovered in the MS4. Report on the type and number of activities undertaken to reduce or eliminate SSOs and inflow/ infiltration, the number of SSOs or inflow / infiltration incidents found and the number resolved, and the name of the owner of the sanitary sewer system within the permittee's jurisdiction. *DEP Note: The permittee needs to "customize" this section as it pertains to the type of activities undertaken to reduce or eliminate SSOs and inflow / infiltration into the MS4. The first three reporting items below are examples.* *DEP Note: The permittee should contact the appropriate authorities for accurate reporting information, such as the sanitary sewer system operator who is responsible for investigating and eliminating SSOs and the local health department who is responsible for permitting / overseeing septic tank systems.* *DEP Note: Report only the SSOs and inflow / infiltration incidents into the MS4.*				
	Activity to reduce/eliminate SSOs and inflow / infiltration: Repair / lining of sanitary sewer system	0	N/A	N/A	None during this reporting period. Four phases of sanitary sewer

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
A.	B.	C.	D.	E.	F.
Permit Citation/ SWMP Element	Permit Requirement/Quantifiable SWMP Activity	Number of Activities Performed	Documentation / Record	Entity Performing the Activity	Comments
					pipeline lining and manhole rehabilitation were previously completed.
	Activity to reduce/eliminate SSOs and inflow / infiltration: Septic systems removed	0	N/A	N/A	None by the City. Palm Beach County Health Department administers the septic tank program.
	Activity to reduce/eliminate SSOs and inflow / infiltration: Emergency generator added	0	N/A	N/A	No new generators during this reporting period. The City has 9 dry prime pumps,
	SSO incidents discovered	4	Wastewater Spillage Report	Wastewater Division	Staff response
	SSO incidents resolved	4	Wastewater Spillage Report	Wastewater Division	Staff response
	Inflow / infiltration incidents discovered	0	N/A	N/A	None discovered
	Inflow / infiltration incidents resolved	0	N/A	N/A	None
	Name of owner of the sanitary sewer system	City of Boynton Beach Utilities Department			
Part III.A.8.a	**Industrial and High-Risk Runoff — Identification of Priorities and Procedures for Inspections**				
	Continue to maintain an up-to-date inventory of all existing high risk facilities discharging into the permittee's MS4. The inventory shall identify the outfall and surface water body into which each high risk facility discharges. For the purposes of this permit, high risk facilities include: • Operating municipal landfills; • Hazardous waste treatment, storage, disposal and recovery facilities; • Facilities that are subject to EPCRA Title III, Section 313 (also known as the Toxics Release Inventory (TRI) maintained by the U.S. EPA); and • Any other industrial or commercial discharge that the permittee determines is contributing a substantial pollutant loading to the permittee's MS4. This could include facilities identified through the proactive inspection program as per Part III.A.7.c of the permit. Report on the high risk facilities inventory, including the type and total number of high risk facilities and the number of facilities newly added each year. *DEP Note: The TRI is updated every spring / summer by the U.S. EPA at www.epa.gov/triexplorer. Select "Facility" on the left, chose your Geographic Location, and then select "Generate Report." Please indicate in Column F when (month / year) you last checked EPA's TRI for applicable facilities.* *DEP Note: The total number of high risk facilities reported needs to equal the sum of the numbers of the four types of applicable facilities.*				

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE

A. Permit Citation/ SWMP Element	B. Permit Requirement/Quantifiable SWMP Activity	C. Number of Activities Performed	D. Documentation / Record	E. Entity Performing the Activity	F. Comments
	During Year 1 of the permit, develop and implement a written plan for conducting inspections of high risk facilities to determine compliance with all appropriate aspects of the stormwater program. While the permittee may determine the order and frequency of the inspections, the permittee shall inspect each identified facility at least once during the permit term; however, facilities identified as high risk due to the findings of the proactive inspection program as per Part III.A.7.c of the permit shall be inspected annually. Report on the high risk facilities inspection program, including the number of inspections conducted and the number and type of enforcement actions taken. *DEP Note: If "0" is reported for the number of inspections conducted and the permittee has one or more high risk facilities, please provide an explanation in Column F for why no inspections were conducted. In addition, the permittee should re-word the "NOVs / warning letters / citations issued" reporting item to more accurately reflect its particular initial enforcement activity, if necessary*				
	Total high risk facilities	5	5	0	0	High Risk Facility Inspection Checklist	Environmental Inspector	Staff inspections
	New high risk facilities added to the inventory during the current reporting period	1	1	0	0	High Risk Facility Inspection Checklist	Environmental Inspector	Discovered during proactive inspections (Worldwide)
	Operating municipal landfills	0	0	N/A	N/A	N/A	N/A	N/A
	Hazardous waste treatment, storage, disposal and recovery (HWTSDR) facilities	2	2	0	0	High Risk Facility Inspection Checklist	Environmental Inspector	Safety Kleen (storage and transportation), Bethesda Memorial Hospital (biohazard incinerator)
	EPCRA Title III, Section 313 facilities (that are not landfills or HWTSDR facilities)	0	0	N/A	N/A	N/A	N/A	N/A
	Facilities determined as high risk by the permittee through the proactive inspections as per Part III.A.7.c	5	5	0	0	High Risk Facility Inspection Checklist	Environmental Inspector	Staff inspections
	Other facilities determined as high risk by the permittee (that are <u>not</u> facilities identified through the proactive inspections)	0	0	N/A	N/A	N/A	N/A	N/A
Part III.A.8.b	**Industrial and High-Risk Runoff — Monitoring for High Risk Industries**				
	Sampling of the discharge to the stormwater system may be required on an as-needed basis in the event that inspections of high-risk facilities disclose suspected illicit				

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
A.	**B.**	**C.**	**D.**	**E.**	**F.**
Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
	discharges to the MS4. New high-risk industrial facilities as defined in 40 CFR 122.26(d)(2)(iv)(C) must be evaluated to determine if the new discharge is contributing a substantial pollutant load to the MS4. The evaluation may include site-specific monitoring. Report the number of high risk facilities sampled.				
	High risk facilities sampled	0	N/A	N/A	N/A
Part III.A.9.a	**Construction Site Runoff — Site Planning and Non-Structural and Structural Best Management Practices**				
	Continue to implement the local codes or land development regulations and the written pre-construction site plan review procedures that require the use and maintenance of appropriate structural and non-structural erosion and sedimentation controls during construction to reduce the discharge of pollutants to the MS4. Report the number of permittee and private pre-construction site plans reviewed for stormwater, erosion, and sedimentation controls, and the number approved. *DEP Note: Please provide an explanation in Column F for any "0" reported in Column C.*				
	PERMITTEE SITES: Construction site plans reviewed	6	Plan Review Procedures	Building Division, Public Works/ Engineering, and Utilities Dept.	Site plan review process
	PERMITTEE SITES: Construction site plans approved	6	Plan Review Procedures	Building Division, Public Works/ Engineering, and Utilities Dept.	Site plan review process
	PRIVATE SITES: Construction site plans reviewed	5	Plan Review Procedures	Building Division, Public Works/ Engineering, and Utilities Dept.	Site plan review process
	PRIVATE SITES: Construction site plans approved	5	Plan Review Procedures	Building Division, Public Works/ Engineering, and Utilities Dept.	Site plan review process
	Annually review (and revise, as needed) and implement the permittee's written procedures to notify all new development / redevelopment permit applicants of the need to obtain all required stormwater permits. Report the number of new development/redevelopment permit applicants notified of the ERP and CGP, and the number of applicants who confirmed ERP and CGP coverage. *DEP Note: Please provide an explanation in Column F for any "0" reported in Column C. If the number of applicants notified of ERP or CGP coverage is less than the number of construction site plans reviewed, please provide an explanation for the discrepancy in Column F.*				
	Notified of ERP stormwater permit requirements	1	CIP Project Design and Permitting Review	Utilities Dept. and Engineering Consultant	Lift Station No. 102 Force Main Subaqueous Crossing project
	Confirmed ERP coverage	1	CIP Project Design and Permitting Review	Utilities Dept. and Engineering Consultant	Lift Station No. 102 Force Main Subaqueous Crossing project
	Notified of CGP stormwater permit requirements	7	Plan Review	Building Division,	Staff reviews

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Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
			Procedures – Notice of Intent Requirements	Public Works/ Engineering, and Utilities Dept.	
	Confirmed CGP coverage	7	Plan Review Procedures – Notice of Intent Requirements	Building Division, Public Works/ Engineering, and Utilities Dept.	Staff reviews
Part III.A.9.b	**Construction Site Runoff — Inspection and Enforcement**				
	As an attachment to the Year 1 Annual Report, the permittee shall submit a written plan that details the standard operating procedures for implementation of the stormwater, erosion and sedimentation inspection program for construction sites discharging stormwater to the MS4. The permittee shall implement the plan for inspecting construction sites immediately upon written approval by the Department. Prior to Department approval, the permittee shall continue to perform inspections in accordance with its previously developed construction site inspection procedures. Report on the inspection program for privately-operated and permittee-operated construction sites, including the number of active construction sites during the reporting year, the number of inspections of active construction sites, the percentage of active construction sites inspected, and the number and type of enforcement actions / referrals taken. *DEP Note: If "0" is reported in Column C for the number of inspections conducted, please provide an explanation in Column F of why no inspections were conducted. If the number of inspections reported is equal to or less than the number of active construction sites, or the percentage inspected is less than 100%, please provide an explanation in Column F. In addition, the permittee should re-word the "NOVs / warning letters / citations issued" reporting item to more accurately reflect its particular initial enforcement activity, if necessary.* *DEP Note: Refer to Part III.A.9.b of the permittee for what must be included in the construction site inspection program plan. Please provide the title of the attached plan in Column D and the name of the entity who finalized the plan in Column E.*				
	PERMITTEE SITES: Active construction sites	6	Construction Site Inspection Checklist and Construction Inspector's Field Notes	Building Division, Public Works/ Engineering, and Utilities Dept.	Staff inspections
	PERMITTEE SITES: Inspections of active construction sites for proper stormwater, erosion and sedimentation BMPs	6	Construction Site Inspection Checklist and Construction Inspector's Field Notes	Building Division, Public Works/ Engineering, and Utilities Dept.	Staff inspections
	PERMITTEE SITES: Percentage of active construction sites inspected	100%	Construction Site Inspection Checklist and Construction Inspector's Field Notes	Building Division, Public Works/ Engineering, and Utilities Dept.	Staff inspections
	PRIVATE SITES: Active construction sites	5	Construction Site Inspection Checklist and Construction Inspector's Field	Building Division, Public Works/ Engineering, and Utilities Dept.	Staff inspections

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
A.	B.	C.	D.	E.	F.
Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
			Notes		
	PRIVATE SITES: Inspections of active construction sites for proper stormwater, erosion and sedimentation BMPs	5	Construction Site Inspection Checklist and Construction Inspector's Field Notes	Building Division, Public Works/ Engineering, and Utilities Dept.	Staff inspections
	PRIVATE SITES: Percentage of active construction sites inspected	100%	Construction Site Inspection Checklist and Construction Inspector's Field Notes	Building Division, Public Works/ Engineering, and Utilities Dept.	Staff inspections
	Notices of Violation (NOVs) / warning letters / citations issued	0	Construction Site Inspection Checklist and Construction Inspector's Field Notes	Building Division, Public Works/ Engineering, and Utilities Dept.	Staff inspections
	Stop Work Orders issued	0	Construction Site Inspection Checklist and Construction Inspector's Field Notes	Building Division, Public Works/ Engineering, and Utilities Dept.	Staff inspections
	Fines issued	0	Construction Site Inspection Checklist and Construction Inspector's Field Notes	Building Division, Public Works/ Engineering, and Utilities Dept.	Staff inspections
	Year 1 ONLY: Attach the written construction site inspection program plan		City of Boynton Beach Construction Site Inspection Plan and Inspection Form	Utilities Department	Plan is attached
Part III.A.9.c	**Construction Site Runoff — Site Operator Training**				
	During Year 1 of the permit, develop and implement a written plan for stormwater training / outreach for construction site plan reviewers, site inspectors and site operators. Provide training for permittee personnel (employed by or under contract with the permittee) and private persons involved in the site plan review, inspection or construction of stormwater management, erosion, and sedimentation controls. All inspectors of construction sites shall be certified through the Florida Stormwater, Erosion, and Sedimentation Control Inspector Training program, or an equivalent program approved by the Department. Follow-up training shall be provided annually. Report the number and type of training activities, the number of inspectors, site plan reviewers and site operators trained (both in-house and outside training), and the number of private persons trained by the permittee. *DEP Note: If "0" is reported for any of these reporting items, please include in Column F an explanation of why training was not provided to / obtained by the permittee's staff and private persons during the applicable reporting year.*				

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE

A. Permit Citation/ SWMP Element	B. Permit Requirement/Quantifiable SWMP Activity				C. Number of Activities Performed	D. Documentation / Record	E. Entity Performing the Activity	F. Comments
	DEP Note: The permittee should report only the number of staff and private persons (i.e., private construction site operators) trained / certified during the applicable reporting year, and then note in Column F the number of staff and private persons who were previously trained / certified. Private site operator training can include pre-construction meetings.							
		Certification Training	**Initial Training (non-certification)**	**Refresher Training**				
	Permittee construction site inspectors	0	0	4		Attendance List	March 16, 2011 – EXCAL Videos "Storm Warnings" and "Spills & Skills" shown by Steering Committee	4 inspectors were previously certified through the Florida Stormwater, Erosion and Sedimentation Control Inspector Training program
	Permittee construction site plan reviewers	0	0	3		Attendance List	March 16, 2011 – EXCAL Videos "Storm Warnings" and "Spills & Skills" shown by Steering Committee	2 site plan reviewers were previously certified through the Florida Stormwater, Erosion and Sedimentation Control Inspector Training program
	Permittee construction site operators	0	0	38		Attendance List	PureSafety Online Training – Environmental Awareness 1, 2, 3	5 operators/field crew were previously certified through the Florida Stormwater, Erosion and Sedimentation Control Inspector Training program and FSA Level 1
	Private persons	0	0			N/A	N/A	No private persons were trained

SECTION VIII. CHANGES TO THE STORMWATER MANAGEMENT PROGRAM (SWMP) ACTIVITIES (Not Applicable In Year 4)		
A.	**Permit Citation/ SWMP Element**	**Proposed Changes to the Stormwater Management Program Activities Established as Specific Requirements Under Part III.A of the Permit (Including the Rationale for the Change) — REQUIRES DEP APPROVAL PRIOR TO CHANGE IF PROPOSING TO REPLACE OR DELETE AN ACTIVITY.** *DEP Note: There may be changes deemed necessary after developing / reviewing your plans and SOPs as per Part III.A of the permit, after completing your SWMP evaluation as per Part VI.B.2 of the permit, or due to a TMDL / BMAP as per Part VIII.B of the permit.*
	N/A	N/A
B.	**Permit Citation/ SWMP Element**	**Changes to the Stormwater Management Program Activities NOT Established as Specific Requirements Under Part III.A of the Permit (Including the Rationale for the Change)** *DEP Note: There may be changes deemed necessary after developing / reviewing your plans and SOPs as per Part III.A of the permit, after completing your SWMP evaluation as per Part VI.B.2 of the permit, or due to a TMDL / BMAP as per Part VIII.B of the permit.*
	N/A	N/A

CHECKLIST A: ATTACHMENTS TO BE SUBMITTED WITH THE ANNUAL REPORTS

Below is a list of items required by the permit that may need to be attached to the annual report. Please check the appropriate box to indicate whether the item is attached or is not applicable for the current reporting period. Please provide the number and the title of the attachments in the blanks provided.

Attached	N/A	Rule / Permit Citation	Required Attachment	Attachment Number	Attachment Title
☐	☒	Part II.F	**EACH ANNUAL REPORT:** If program resources have decreased from the previous year, a discussion of the impacts on the implementation of the SWMP.		
☐	☒	Part III.A.1	**EACH ANNUAL REPORT:** An explanation of why the minimum inspection frequency in Table II.A.1.a was not met, if applicable.		
☐	☒	Part III.A.4	**EACH ANNUAL REPORT:** A list of the flood control projects that did not include stormwater treatment and an explanation for each of why it did not, if applicable.		
☐	☒	Part III.A.7.a	**EACH ANNUAL REPORT:** A report on amendments / changes to the legal authority to control illicit discharges, connections, dumping, and spills, if applicable.		
☒	☐	Part V.B.9	**EACH ANNUAL REPORT:** Reporting and assessment of monitoring results. **[Also addressed in Section III of the Annual Report Form]**	N/A	Refer to the Palm Beach County Joint Annual Report
☒	☐	Part VI.B.2	**EACH ANNUAL REPORT:** An evaluation of the effectiveness of the SWMP in reducing pollutant loads discharged from the MS4 that, at a minimum, must include responses to the questions listed in the permit.	2	City of Boynton Beach SWMP Effectiveness
☐	☒	Part VIII.B.3.e	**EACH ANNUAL REPORT:** A status report on the implementation of the requirements in this section of the permit and on the estimated load reductions that have occurred for the pollutant(s) of concern.		
☐	☒	Part VIII.B.4.f	**EACH ANNUAL REPORT after approval of the BPCP:** The status of the implementation of the Bacterial Pollution Control Plan (BPCP).		
☒	☐	Rule 62-624.600(2)(a), F.A.C.	**YEAR 1:** An inventory of all known major outfalls and a map depicting the location of the major outfalls (hard copy or CD-ROM).	3	City of Boynton Beach Major Outfalls, Contributing Areas & Land Use Map
☐	☒	Part III.A.3	**YEAR 1:** If have curbs and gutters but no street sweeping program, an explanation of why no street sweeping program and the alternate BMPs used or planned.		
☒	☐	Part III.A.6	**YEAR 1 or YEAR 2:** A copy of the adopted Florida-friendly Ordinance, if applicable.	4	City of Boynton Beach Ordinance 11-019
☒	☐	Part III.A.7.c	**YEAR 1:** A proactive illicit discharge / connection / dumping inspection program plan.	5	City of Boynton Beach Proactive Inspection Program
☒	☐	Part III.A.9.b	**YEAR 1:** A construction site inspection program plan. **[For approval by DEP]**	6	City of Boynton Beach Construction Site Inspection Plan and Inspection Form
☐	☒	Part III.A.2	**YEAR 2:** A summary report of a review of codes and regulations to reduce the stormwater impact from new development / redevelopment.		
☐	☒	Part V.A.2	**YEAR 3:** Estimates of annual pollutant loadings and EMCs, and a table comparing the current calculated loadings with those from the previous two Year 3 ARs.		
☐	☒	Part III.A.2	**YEAR 4:** A follow-up report on plan implementation of changes to codes and regulations to reduce the stormwater impact from new development / redevelopment.		
☐	☒	Part V.A.3	**YEAR 4:** If the total annual pollutant loadings have not decreased over the past two permit cycles, revisions to the SWMP, as appropriate.		

☐	☒	Part V.B.3	**YEAR 4:** The monitoring plan (with revisions, if applicable).		
☐	☒	Part VII.C	**YEAR 4:** An application to renew the permit.		
☐	☒	Part VIII.B.3.d	**YEAR 4:** A TMDL Implementation Plan / Supplemental SWMP.		

CHECKLIST B: THE REQUIRED ANNUAL REVIEWS OF WRITTEN STANDARD OPERATING PROCEDURES (SOPs) & PLANS

The permit requires annual review, and revision if needed, of written Standard Operating Procedures (SOPs) and plans (e.g., public education and outreach, training, inspections). Please indicate your review status below. **If you have made revisions that need DEP approval, you must complete Section VIII.A of the annual report.**

Did not complete review of existing SOP / Plan	Developed new written SOP / Plan	Reviewed & no revision needed to existing SOP / Plan	Reviewed & revised existing SOP / Plan	Permit Citation	Description of Required SOPs / Plans
☐	☐	☒	☐	Part III.A.1	SOP and/or schedule of inspections and maintenance activities of the structural controls and roadway stormwater collection system.
☐	☐	☒	☐	Part III.A.2	SOP for development project review and permitting procedures and/or local codes and regulations for new development / areas of significant development.
☐	☐	☒	☐	Part III.A.3	SOP for the litter control program.
☐	☐	☒	☐	Part III.A.3	SOP for the street sweeping program.
☐	☐	☒	☐	Part III.A.3	SOP for inspections of equipment yards and maintenance shops that support road maintenance activities.
☐	☐	☒	☐	Part III.A.5	SOP for inspections of waste treatment, storage, and disposal facilities not covered by an NPDES stormwater permit.
☐	☐	☒	☐	Part III.A.6	Plan for public education and outreach on reducing the use of pesticides, herbicides and fertilizer.
N/A	N/A	N/A	N/A	Part III.A.6	~~Plan for pesticide, herbicide and fertilizer application training~~ *DEP Note: A plan is not necessary since the FDACS certification / licensing program adequately fulfills the permit requirement.*
☐	☐	☒	☐	Part III.A.6	SOP for reducing the use of pesticides, herbicides and fertilizer, and for the proper application, storage and mixing of these products.
☐	☐	☐	☒	**Part III.A.7.c**	**Plan for proactive illicit discharge / connections / dumping inspections.***
☐	☐	☒	☐	Part III.A.7.c	SOP for reactive illicit discharge / connections / dumping investigations.
☐	☐	☒	☐	Part III.A.7.c	Plan for illicit discharge training.
☐	☐	☒	☐	Part III.A.7.d	SOP for spill prevention and response efforts.
☐	☐	☒	☐	Part III.A.7.d	Plan for spill prevention and response training.
☐	☐	☒	☐	Part III.A.7.e	Plan for public education and outreach on how to identify and report the illicit discharges and improper disposal to the MS4.
☐	☐	☒	☐	Part III.A.7.f	Plan for public education and outreach on the proper use and disposal of oils, toxics and household hazardous waste.
☐	☐	☒	☐	Part III.A.7.g	SOP to reduce / eliminate sanitary wastewater contamination of the MS4.
☐	☐	☒	☐	Part III.A.8	SOP for inspections of high risk industrial facilities.
☐	☐	☒	☐	Part III.A.9.a	SOP for construction site plan review for stormwater, erosion and sedimentation controls, and ERP and CGP coverage.
☐	☐	☐	☒	**Part III.A.9.b**	**Plan for inspections of construction sites.***
☐	☐	☒	☐	Part III.A.9.c	Plan for stormwater, erosion and sedimentation BMPs training.

* Revisions to these plans require DEP approval – please complete Section VIII.A of the annual report.

REMINDER LIST OF THE TMDL / BMAP REPORTS TO BE SUBMITTED SEPARATELY FROM AN ANNUAL REPORT		
Rule / Permit Citation	**Report Title**	**Due Date**
Part VIII.B.3.a	**6 MONTHS from effective date of permit:** TMDL Prioritization Report.	9/2/11
Part VIII.B.3.b	**12 MONTHS from effective date of permit:** TMDL Monitoring and Assessment Plan.	3/2/12
Part VIII.B.3.c	**6 MONTHS from receiving analyses from the lab:** TMDL Monitoring Report.	TBD
Part VIII.B.4	**30 MONTHS from effective date of permit:** A Bacterial Pollution Control Plan (BPCP).	9/2/13

END OF REVISED TAILORED MS4 AR FORM
CYCLE 3 PERMIT

Attachment 1

City of Boynton Beach
Major Stormwater Outfalls

Third Term, Year 1 Report

March 2012

The City of Boynton Beach is reporting zero (0) inspections and maintenance activities for the three (3) major stormwater outfalls (36 inches in diameter or larger) within the City's MS4 system. The major outfalls were identified as part of the preparation of the map for this Annual Report. It should be noted that two (2) outfalls are shared jointly with the Boynton Beach Leisureville Community and one (1) outfall discharges into a canal deeded for public use, but the canal is not owned by the City. Routine inspections and maintenance will now be performed on a regular basis.

Attachment 2

City of Boynton Beach
SWMP Effectiveness

Third Term, Year 1 Report
March 2012

In accordance with Part VI.B.2.:

- The ANNUAL REPORT shall include as an attachment an evaluation of the effectiveness of the permittee's SWMP in reducing pollutant loads discharged from the MS4. At a minimum, the permittee shall attach to the ANNUAL REPORT an explanation of how its SWMP is addressing each of the following:

1. Have stormwater pollutant loadings discharged from the MS4 decreased? Why or why not? ***In many areas, the amount of stormwater pollutants discharged from the MS4 has decreased due to the amount of positive displacement stormwater conveyance systems being installed and the implementation of low impact development for new construction and redevelopment projects, as required/encouraged by the City's Land Development Regulations. Additionally, the City of Boynton Beach is utilizing more swale and exfiltration stormwater applications to filter stormwater pollutants and create groundwater recharge.***

2. Which components of the SWMP are working well and are effective in reducing stormwater pollutant loadings? Why are they effective? ***All components of the SWMP are working well. Swale rehabilitation, exfiltration stormdrain applications, and street sweeping/litter control are especially effective. There are many benefits to these applications:***

   - ***Swale rehabilitation filters stormwater runoff pollutants and reestablishes groundwater recharge.***

- ***Exfiltration applications allow stormwater runoff to percolate into the ground therefore not allowing runoff to be conveyed into Class III Waters of the State.***

- ***Street sweeping/litter control reduces the amount of pollutants that derive into stormwater runoff and pollute our waterways. This application also prevents leaves debris and litter from clogging the storm drain system and presents a clean, aesthetically pleasing appearance to the City of Boynton Beach residential and commercial roadways.***

3. Which components of the SWMP are not working well and need to be revised to make them more effective in reducing stormwater pollutant loadings? ***All components of the SWMP are working well and contribute to reducing pollutant loadings. However, the performance of many stormwater catch basins could be enhanced by installing BMPs such as:***

   - ***Snouts (offers reductions in gross pollutants such as floatables and trash, as well as free oils and sediment).***
   - ***Bio-Skirt (reduces bacteria and more effectively captures and retains hydrocarbons).***

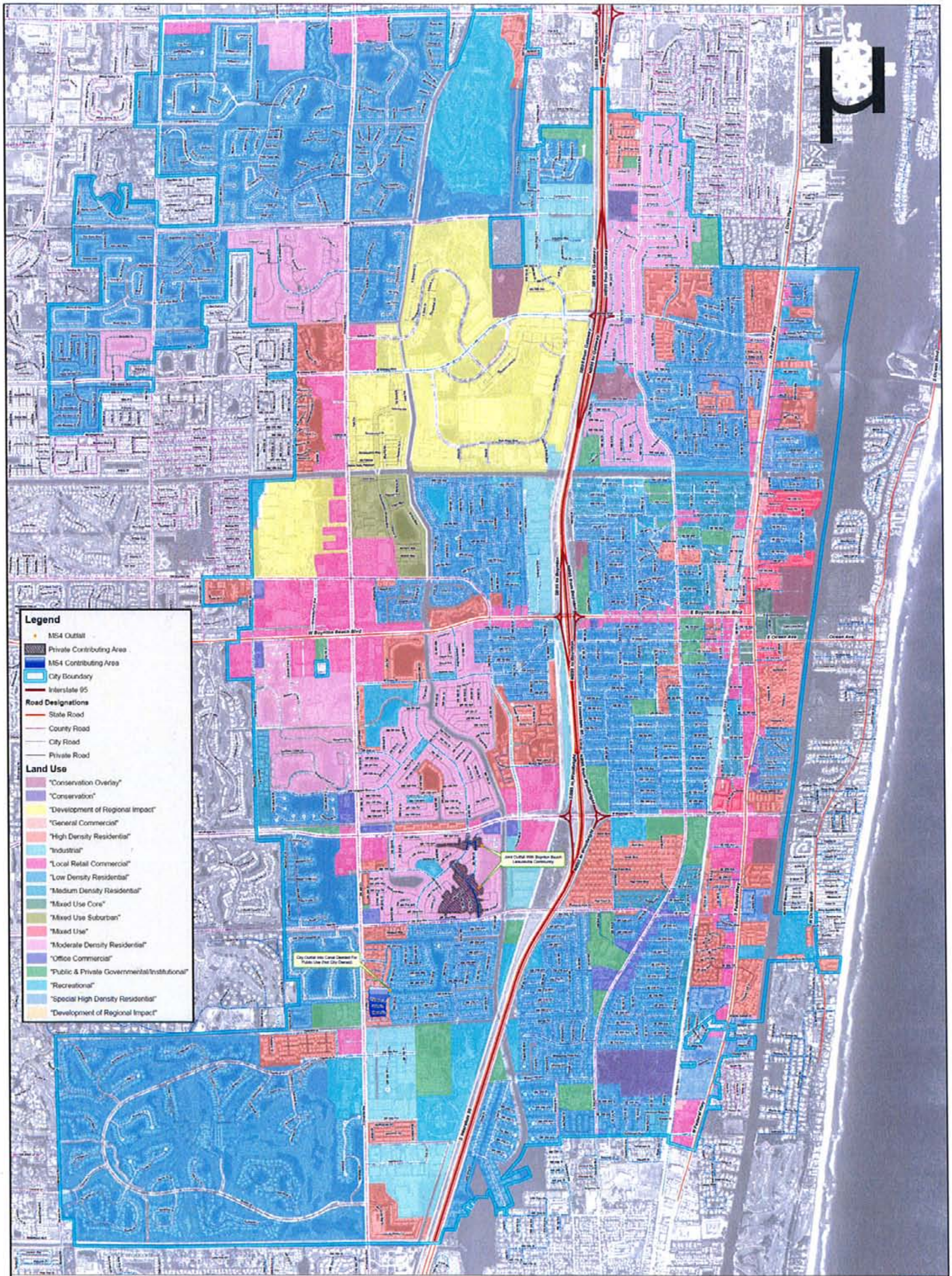
   The structures that have these types of BMPs in place are working effectively to decrease stormwater pollutants loading. It is the goal of the City of Boynton Beach to implement BMPs within all of our stormwater catch basins to create cohesiveness to improve reducing pollutant loading.

4. Which components of the SWMP do not contribute to reducing stormwater pollutant loads and could be revised or eliminated, and why? ***All components of the City's SWMP contribute to reducing pollutant loads in some way.***

5. Is the monitoring program providing data that can be used to assess the effectiveness of the SWMP in reducing stormwater pollutant loadings, assess the effectiveness of specific BMPs, and determine where stormwater retrofitting projects should be prioritized for implementation? ***Yes, the City's monitoring program provides the necessary data for our staff to analyze our operations and prioritize projects under our operations budget and Capital Improvement Plan.***

The evaluation is expected to be subjective and is intended to lead the permittee to consider which programs deserve more or less attention.

ATTACHMENT #3



City of Boynton Beach Major Outfalls, Contributing Areas & Land Use

Attachment 4

ORDINANCE 11-019

ORDINANCE OF THE CITY COMMISSION OF THE CITY OF BOYNTON BEACH, FLORIDA APPROVING AMENDMENTS TO PART III, "LAND DEVELOPMENT REGULATIONS" TO ADD FLORIDA-FRIENDLY LANDSCAPING STANDARDS AND PROVISIONS; PROVIDING FOR CONFLICT, SEVERABILITY, INCLUSION; AND EFFECTIVE DATE.

WHEREAS, due to the increased need for water conservation and in connection with a related strategy adopted in the City's Climate Action Plan staff has determined that additional enhancements to the code are warranted; and

WHEREAS, the intent of these regulations is to foster a more sustainable outdoor environment on developed non-residential and multi-family residential sites while taking into consideration feasibility and financial impacts upon the development community, landscape industry, business and property owners; and

WHEREAS, staff recommends the adoption of the attached revisions to the Land Development Regulations as they will add Florida-friendly landscaping standards and provisions.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COMMISSION OF THE CITY OF BOYNTON BEACH, FLORIDA:

Section 1. That the foregoing "WHEREAS" clause is true and correct and hereby ratified and confirmed by the City Commission.

Section 2. That Part III, "Land Development Regulations", of the Code of Ordinances of the City of Boynton Beach is hereby amended as follows:

See attached Exhibit "A"

Section 3. All prior ordinances or resolutions or parts thereof in conflict herewith are hereby repealed to the extent of such conflict.

Section 4. If any section, sentence, clause, or phrase of this Ordinance is held to be invalid or unconstitutional by any court of competent jurisdiction, then said holding shall in no way affect the validity of the remaining portions of this Ordinance.

Section 5. It is the intention of the City Commission of the City of Boynton Beach, Florida, that the provisions of this Ordinance shall become and be made a part of the City of Boynton Beach Code of Ordinances; and that the sections of this ordinance may be renumbered or relettered and the word "ordinance" may be changed to "section," "article," or such other appropriate word or phrase in order to accomplish such intentions.

Section 6. This Ordinance shall be effective immediately after adoption by the City Commission.

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PASSED FIRST READING this 19th day of July, 2011.

SECOND AND FINAL READING ADOPTED this 2ND day of Aug., 2011.

CITY OF BOYNTON BEACH, FLORIDA

Mayor – Jose Rodriguez

Vice Mayor – William Orlove

Commissioner – Woodrow L. Hay

Commissioner – Steven Holzman

Commissioner – Marlene Ross

ATTEST:

Judith A Ryke, Deputy City Clerk
Janet M. Prainito, MMC
City Clerk

(Corporate Seal)

CITY OF BOYNTON BEACH

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DEPARTMENT OF DEVELOPMENT
PLANNING AND ZONING
Memorandum PZ 11-022

TO: Chair and Members
Planning & Development Board

FROM: Eric Lee Johnson, AICP
Planner II

THROUGH: Michael Rumpf
Planning and Zoning Director

DATE: June 21, 2011

RE: Florida-Friendly Landscaping
CDRV 11-006

OVERVIEW

The rewrite of the City's land development regulations (LDR) allowed staff to perform a complete review and analysis of each standard, regulation, and process. As part of the post-adoption process, staff anticipates the periodic need for, and is prepared to expeditiously process, updates and amendments to the LDR for one or more of the following reasons or initiatives:

1. Business and economic development initiatives (the attraction and retention of businesses, and response to changes in the economic environment);

2. Sustainability initiatives (to further general energy conservation and/or the specific recommendations of the Climate Action Plan or for general energy conservation);

3. Internal consistency (those amendments warranted to address identified internal inconsistencies or errors);

4. Regulatory compliance (responses to changes in State and / or county laws and regulations); and

5. Implementation feedback (those adjustments in standards, regulations, and processes necessary to meet original or current objectives and vision).

NATURE OF REQUEST

Amend the land development regulations by inserting Florida-friendly landscape provisions that will be applicable to non-residential, multi-family residential, and planned residential uses. The proposed code amendment would further the initiative for sustainability and implement one of the recommendations from the City's Climate Action Plan (CAP), which was approved in 2010.

BACKGROUND

The City's landscaping requirements, approved with the adoption of Ordinance 10-25 (LDR Rewrite project), included several provisions that are based upon the Florida-friendly landscape principles (e.g., drought tolerant species). Staff later concluded that more research should be conducted on the topic and that additional enhancements to the code would be beneficial, particularly due to the increased need for water conservation. In fact, as of today, the South Florida Water Management District (SFWMD), which is the governmental entity that manages water distribution to Palm Beach County and 15 other counties, recently declared a water shortage in south Florida due to what is called a record-breaking dry season. Because of the lack of rain, the SFWMD issued general watering restrictions which apply to homes, farms, nurseries, and golf courses located throughout Palm Beach County. Furthermore, the SFWMD predicts that many of its monitoring areas and data collection points will continue to experience moderate to severe drought conditions for the remainder of this dry season.

To promote water conservation, the City's CAP contains an Implementation Strategy (4.1.2 Water / Wastewater Facilities, Conservation and Landscape Irrigation) that states the following:

> Adopt Florida-friendly landscaping principles in the land development code, including identification of permitted and prohibited species. Establish landscape requirements in the City's LDR with a target of greater than 50% for new landscaping consisting of Florida-Friendly species, including lawn grass.

According to SFWMD Interim Executive Director Tommy Strowd, "Water-smart landscaping makes sense considering outdoor irrigation accounts for half of all potable water use. Transforming an outdoor space into a Florida-friendly yard is a great way to conserve water and protect regional water resources." The University of Florida's Institute of Food and Agricultural Sciences (IFAS) helped create the nine (9) Florida-friendly landscaping principles. The intent of these principles is aimed at reducing the environmental impact of development by employing sustainable landscaping / maintenance practices. The nine (9) principles are listed as follows (also see Exhibit "C"):

1. Right Plant, Right Place
2. Water Efficiently
3. Fertilize Appropriately

4. Mulch
5. Attract Wildlife
6. Manage Yard Pests Responsibly
7. Recycle
8. Prevent Stormwater Runoff
9. Protect the Waterfront

The Florida Department of Environmental Protection (DEP) developed a model ordinance intended to guide the adoption of these principles. Staff reviewed the model ordinance and used it as a guide in drafting the proposed regulations contained in Exhibit "B." The new provisions would be inserted into the following articles of the LDR:

Chapter 1, Article II Definitions;
Chapter 2, Article III Engineering Division Services;
Chapter 4, Article I Environmental Protection Standards; and
Chapter 4, Article II Landscape Design and Buffering Standards.

The intent of these regulations is to foster a more sustainable outdoor environment on developed non-residential and multi-family residential sites, while taking into consideration feasibility and financial impacts upon the development community, landscape industry, businesses, and property owners. It should be noted that the draft regulations were distributed to local stakeholders (i.e., nursery grower, landscape architects, landscape contractor, and irrigation contractor) and their feedback has been positive and incorporated into the proposed regulations.

CONCLUSION / RECOMENDATION

Staff is proposing the attached provisions to implement a CAP recommendation. The intent of these regulations is to decrease the impacts of development on the environment as well as to reduce the use of potable water for irrigation purposes. The new provisions would apply to all new non-residential, multi-family residential, and common areas within planned residential developments.

EXHIBIT "B" – Draft Regulations for Florida-Friendly Landscaping

Chapter 1, Article II (Definitions)

FLORIDA-FRIENDLY LANDSCAPING - The principles of Florida-Friendly Landscaping include planting the right plant in the right place, efficient watering, appropriate fertilization, mulching, attraction of wildlife, responsible management of yard pests, recycling yard waste, reduction of stormwater runoff, and waterfront protection. Additional components of Florida-Friendly Landscape include planning and design, soil analysis, the use of solid waste compost, practical use of turf, and proper maintenance. The following definitions shall also apply:

AQUASCAPE - The planting of aquatic and wetland plants in the enhancement, restoration, or creation of freshwater, estuarine, or marine systems.

AUTOMATIC CONTROLLER – An electronic device, capable of automated operation of valve stations to set the time, duration and frequency of a water application based upon soil moisture probes.

BEST MANAGEMENT PRACTICES - Turf and landscape practices or combination of practices based on research, field-testing, and expert review, determined to be the most effective and practicable on-location means, including economic and technological considerations, for improving water quality, conserving water supplies and protecting natural resources. See "BIOINTENSIVE INTEGRATED PEST MANAGEMENT."

COMMERCIAL FERTILIZER APPLICATOR - Any person who applies fertilizer on turf and / or landscape plants in the City in exchange for money, goods, services or other valuable consideration.

CONSTANT PRESSURE / FLOW CONTROL - A device that maintains a constant flow, pressure, or both.

EMITTER - This term primarily refers to devices used in microirrigation systems.

FERTILIZE, FERTILIZING, OR FERTILIZATION - The act of applying fertilizer or fertilizer product to turf, specialized turf, or landscape plant.

FERTILIZER - Any substance or mixture of substances, except pesticide / fertilizer mixtures
such as "weed and feed" products, that contains one or more recognized plant nutrients and promotes plant growth, or controls soil acidity or alkalinity, or provides other soil enrichment, or
provides other corrective measures to the soil.

FILTER - A device in irrigation distribution systems that separates sediment or other foreign matter.

GROUND COVER - Low growing plants, other than turf grass, used to cover the soil and form a continuous, low mass of foliage.

GUARANTEED ANALYSIS - The percentage of plant nutrients or measures of neutralizing capability claimed to be present in a fertilizer.

HARDSCAPE – Impervious areas such as patios, decks, driveways, paths and sidewalks that do not require
irrigation.

HIGH WATER USE PLANTS - Plants that require irrigation to provide supplemental water on a regular basis throughout the year, or are so identified by a regulatory agency having jurisdiction. When placed in a naturally high water table area appropriate to the plant such that irrigation is not required, such plants shall not be considered high water use for the purposes of the Florida-Friendly standards.

HYDROZONE - A distinct grouping of plants with similar water needs and climatic requirements.

INFILTRATION RATE - The rate of water entry into the soil expressed as a depth of water per unit of time (inches per hour).

INTEGRATED PEST MANAGEMENT (IPM) - An effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices. IPM programs use current, comprehensive information on the life cycles of pests and their interaction with the environment. This information, in combination with available pest control methods, is used to manage pest damage by the most economical means, and with the least possible hazard to people, property, and the environment.

IRRIGATED LANDSCAPE AREA - All outdoor areas that require a permanent irrigation system.

IRRIGATION SYSTEM - A constructed watering system designed to transport and distribute water to plants.

IRRIGATION ZONE - A grouping of sprinkler heads or microirrigation emitters operated simultaneously by the control of one valve.

LANDSCAPED AREA – The entire parcel; less the building footprint, driveways, hardscape and other impervious areas, such as decks, patios, and non-

porous areas. Water features are included in the calculation of the landscaped area.

LOW-FLOW POINT APPLICATORS – Irrigation applicators with output less than 60 gallons per hour (gph).

LOW MAINTENANCE ZONE – An area with a minimum of six (6) feet in width, adjacent to water courses, which is planted and managed in order to minimize the need for fertilization, watering, mowing, etc.

LOW WATER USE PLANTS – Permanent plants that do not need supplemental water beyond natural rainfall, or are so identified by a regulatory agency having jurisdiction not needing irrigation to survive.

MICROCLIMATE – The climate of a specific area in the landscape that has substantially differing sun exposure, temperature, or wind than surrounding areas or the area as a whole, resulting in different needs and requirements.

MICROIRRIGATION (LOW VOLUME) - The application of small quantities of water directly on or below the soil surface, usually as discrete drops, tiny streams, or miniature sprays through emitters placed along the water delivery pipes (laterals). Microirrigation encompasses a number of methods or concepts including drip, subsurface, bubbler, and spray irrigation, previously referred to as trickle irrigation, low volume, or low flow irrigation.

MODERATE WATER USE PLANTS - Plants that need supplemental water during seasonal dry periods.

MOISTURE SENSING DEVICE OR SOIL MOISTURE SENSOR - A device to indicate soil moisture in the root zone for the purpose of controlling an irrigation system based on the actual needs of the plant.

MULCH - Non-living, organic, or synthetic materials customarily used in landscape design to retard erosion and retain moisture.

NATIVE VEGETATION - Any plant species with a geographic distribution indigenous to all, or part, of the State of Florida as identified in: Wunderlin, R. P. 1998. Guide to the Vascular Plants of Florida. University Press of Florida, Gainesville.

NON-COMMERCIAL APPLICATOR - Any person that applies fertilizer for the purpose of maintaining turf and / or landscape plants. Non-commercial applicators shall include but not be limited to owners and managers of public lands, schools, parks, religious institutions, utilities, and any residential properties maintained in condominium and / or common ownership.

PASTURE - Land used for livestock grazing that is managed to provide feed value.

PLANT BED - A grouping of trees, shrubs, ground covers, perennials or annuals growing together in a defined area devoid of turfgrass, normally using mulch around the plants.

PLANT COMMUNITIES - An association of plants that are dominated by one or more prominent species, or a characteristic physical attribute.

POINT OF CONNECTION (POC) - The location where an irrigation system is connected to a water supply.

POP-UP SPRAYS - Spray heads that pop up with water pressure and provide a continuous spray pattern throughout a given arc of operation.

PRESSURE TANK - A pressurized holding tank for irrigation water.

PROHIBITED APPLICATION PERIOD - The time period during which a Flood Watch or Warning, or a Tropical Storm Watch or Warning, or a Hurricane Watch or Warning is in effect for any portion of (CITY/COUNTY), issued by the National Weather Service, or if heavy rain is likely.

PUMP CYCLING - Irrigation pump coming on and shutting off frequently during operation of irrigation systems.

RAIN SENSOR DEVICE - A low voltage electrical or mechanical component placed in the circuitry of an automatic irrigation system that is designed to turn off a sprinkler controller when precipitation has reached a pre-set quantity. Required by law (373.62 F.S.) on all automatic irrigation systems since 1991.

SITE APPROPRIATE PLANT - A plant that after establishment, will thrive within the environmental conditions that are normal for a specific location without artificial supplements such as irrigation.

"SLOW RELEASE," "CONTROLLED RELEASE," "TIMED RELEASE," "SLOWLY AVAILABLE," or "WATER INSOLUBLE NITROGEN" - Nitrogen in a form which delays its availability for plant uptake and use after application, or which extends its availability to the plant longer than a reference rapid or quick release product.

SOD OR LAWN - A piece of turf-covered soil held together by the roots of the turf.

SOIL MOISTURE SENSOR - See "MOISTURE SENSING DEVICE."

SOIL TEXTURE - The classification of soil based on the percentage of sand, silt, and clay in the soil.

TURF (TURFGRASS) - A mat layer of monocotyledonous plants such as, but not limited to, Bahia, Bermuda, Centipede, Paspalum, St. Augustine, and Zoysia.

VALVE - A device used to control the flow of water in the irrigation system.

WATER USE ZONE - See "HYDROZONE."

Chapter 2, Article III, Section 3 (Land Development Permit)

Section 3. Land Development Permit (LDP).

A. General.

1. Purpose and Intent. The purpose and intent of this subsection is to set forth a well-defined application process, review criteria, and uniform procedure for the processing of land development permits, and to ensure that developments comply with the drainage requirements of the South Florida Water Management District and other external agencies, and the respective standards described in the Engineering Design Handbook and Construction Standards, the City's Code of Ordinances, and these Land Development Regulations.

2. Applicabilty. The land development permit (LDP) shall be required prior to the commencement of any new construction (or modification) of site improvements, required infrastructure, and activities listed hereunder. For the purposes of this subsection, a modification shall be construed to exclude simple maintenance and repairs of existing site improvements and infrastructure, as determined by the City Engineer or designee. The LDP shall be required for the following:

a. Impervious Surfaces. Any new impervious surfaces of 800 square feet or more;

b. Off-Street Parking Areas. Off-Street parking, vehicular use area, and loading zones on private property as described in Chapter 4, Article VI (Parking Lot, Vehicular Use Area, and Loading Zone Standards);

c. Required Improvements. Any drainage, storm water and wastewater systems, and the other required improvements (e.g. utilities, streets, sidewalks, pedestrian and bicycle paths, etc.) as described in Chapter 4, Article VIII (Roadways, Utilities, and Infrastructure Design Standards);

d. Landscaping and Irrigation. Landscaping, including its irrigation, located within rights-of-way or that which is required on private property pursuant to Chapter 4, Article II (Landscaping Design and Buffering Standards);

e. Clearing and Grubbing Activities. Any proposal to cut down, move or remove, destroy, or effectively destroy through damaging any plant material protected under Chapter 4, Article I (Environmental Protection Standards).

f. Excavation and Fill Activities. Any excavation, grading, dredging, or fill activities pursuant to Chapter 4, Article XI (Excavation and Fill Regulations);

g. Exterior Lighting. Any exterior site lighting located within public rights-of-way or that which is required in off-street parking areas or other vehicular use areas pursuant to Chapter 4, Article VII (Exterior Lighting Standards); and

h. Abutting Rights-of-Way. The application for an LDP shall generally include any off-site improvements and construction activity proposed to, or within, an abutting or contiguous right-of-way; however, the City Engineer shall have the authority to require a right-of-way permit in those instances when the scope of work is such that it is not located within close proximity of the subject property or abutting right-of-way, and is a considerable distance off-site, and is not a direct component of the subject LDP.

3. Prerequisites to the Land Development Permit. The City Engineer or designee shall not commence the review of a land development permit application in instances when the Director of Planning and Zoning or designee determines that a site plan or a modification thereof is necessary. See Chapter 2, Article II, Section 2.F for the site plan review process. In this section, the term "site plan" is also construed to include the master site plan and technical site plan review processes (see Chapter 2, Article II, Sections 3.A and 3.B, respectively).

The review of an LDP application may occur concurrently with the review of a final plat in instances when the City Engineer determines a plat or replat is required, but in all instances, the LDP shall not be issued until the final plat is approved.

B. Submittal Requirements. An application form for a land development permit shall be provided by the Engineering Division. Unless the City Engineer or designee determines otherwise, the applicant shall submit the completed form,

pay the fee as adopted by resolution by the City Commission, and provide all documentation required hereunder:

1. **Survey.** Seven (7) surveys sized 24" x 36", not older than six (6) months, and one (1) additional copy sized 11" x 17", showing the subject property and any affected rights-of-way, including alleys, shall be prepared and sealed by a licensed surveyor. The surveys shall also illustrate the following:

   a. Total gross project acreage and square footage;

   b. North arrow, scale, and legend;

   c. Property boundaries, legal description, and property control number(s);

   d. Existing natural features, including but not limited to lakes, trees and other vegetation, soils, and topography;

   e. Existing buildings and structures, including dimensions, height, and use;

   f. Existing utility lines and easements;

   g. Existing ground elevations (street and finished floor); and

   h. Permanent reference monuments and permanent control points as required by Chapter 4, Article VIII, Section 3.C.4.

2. **Site Plan.** Seven (7) site plans sized 24" x 36" and one additional (1) copy sized 11" x 17" shall be prepared and sealed by a professional architect, engineer, or landscape architect registered in the State of Florida. The site plan shall be drawn to scale and indicate the following:

   a. Total gross project acreage and square footage;

   b. North arrow, scale, and legend;

   c. Future Land Use Map Classification (FLUM) and Zoning District (from Official Zoning Map);

   d. Tabular summary indicating the total building area expressed in square footage, including nonresidential floor area (if applicable) and intended use of such floor area;

e. Tabular summary indicating the total number of dwelling units (if applicable), including characteristics such as number of bedrooms, bathrooms, and size of each typical unit;

f. Tabular summary indicating square footage and percentage distribution of the total project site, including areas proposed for landscaped open space, vehicular use areas and other paved surfaces, building coverage, and pervious and impervious surfaces;

g. Tabular summary indicating number and ratio (methodology) of required and provided off-street parking spaces and loading zones;

h. Existing buildings and structures which are to remain, and any proposed buildings and structures, including dimensions, height, setbacks, and use;

i. Proposed off-street parking spaces, loading zones, and vehicular use areas (i.e. driveways), including dimensions, setbacks, traffic control markings, and signage;

j. Proposed sidewalks and pedestrian areas, including dimensions and setbacks;

k. Proposed fences and walls, including dimensions, setbacks, height, and material;

l. Proposed location of exterior freestanding lighting fixtures; and

m. Proposed dumpster or trash receptacle location(s).

3. **Civil Engineering Drawings.** Seven (7) civil engineering drawings sized 24" x 36" and one additional (1) copy sized 11" x 17" shall be prepared and sealed by a professional engineer registered in the State of Florida. The civil engineering drawings shall be drawn to scale and illustrate the same general information as that shown on the site plan following (including associated easements and dedications), in addition to containing the following:

a. Paving and grading;

b. Potable water and sanitary sewer systems;

c. Stormwater management and drainage calculations that were used in the design of the water management system;

d. Stormwater pollution prevention plan (SWPPP) and / or Erosion and Sedimentation Control (ESC) plan;

e. Typical sections and summary of quantities;

f. Street lighting; ~~and~~

g. Traffic control markings~~.~~; and

h. Maintenance of traffic plan.

4. Landscape Plan. A detailed landscape plan shall only be required for those permit applications associated with the required landscaping as described in Chapter 4, Article II or by the Engineering Design Handbook and Construction Standards. The applicant shall be required to submit seven (7) landscape plans sized 24" x 36" and one (1) additional copy sized 11" x 17", all of which drawn to scale, and prepared and sealed by a professional landscape architect in the State of Florida. The plans shall illustrate the same general information as that shown on the site plan, in addition to containing the following:

a. Existing and proposed ~~Proposed~~ vegetation (trees and shrubs), including species, height, and size, and any which are to remain;

b. Locations of protected or specimen trees;

c. Tabular summary of plant list indicating type of plant by common and botanical name, and quantity;

d. Proposed berms, watercourses, and other topographic features;

e. A notation on the method of irrigation; and

f. Locations of required trash receptacles, bicycle racks, and trash receptacles.

g. Locations of exterior lighting fixtures, utility structures (at-grade and below grade), easements, and proposed civil engineering improvements.

5. Irrigation Plan. A detailed irrigation plan shall only be required for those permit applications associated with landscaping and irrigation lines as regulated under Chapter 4, Article II (Landscape Design and Buffering Standards) or by the Engineering Design Handbook and Construction Standards. The applicant shall be required to submit seven (7) irrigation plans sized 24" x 36" and one (1) additional copy sized 11" x 17", all of which drawn to scale, and prepared and sealed by a professional landscape architect in the State of Florida. The plans shall illustrate the same general information as that shown on the site plan, in addition to containing the following:

a. The irrigation system plans and specifications shall identify the materials to be used, the installation methods, and estimated monthly water savings as compared to non-microirrigation systems;

b. Irrigation system plans and specifications shall under go final testing and adjustments to achieve design specifications prior to completion of the system and acceptance by the owner's representative and the City;

c. The water use zones shall be shown on the irrigation plan and labeled as to their usage (e.g., turf zone, shrub zone,etc);

d. Location and size of public water meter(s) (domestic and reclaimed) service(s), well or lake water or cistern storage source, pressure tank and rust chemical treatment.

e. Location and size of backflow prevention device, and automatic controller;

f. Static water and design pressure at point of connection and pressure-regulation valve shall be installed and maintained if static service pressure exceeds 80 pounds per square inch. The pressure regulating valve shall be located after the meter;

g. Location of power source (single or three phase);

h. Location, type, size, and depth of all irrigation main and lateral lines, and sleeves;

i. Location and type of all irrigation heads, quick couplers, gate valves, automatic flush valves, air vacuum relief valves, soil moisture sensors, control switches, pumps, starters, and other related equipment;

j. Installation details and outline specifications for backflow prevention device, metal caging, controller, control valves, quick couplers, emitter heads, drip lines and emitters, automatic and / or manual flush valves, air vacuum, relief valves, main line and later line pipe, wire connection details, and all other irrigation related operations;

k. Irrigation legend with symbol, size, manufacturer, model number, PSI and GPM shown on each sheet;

l. Irrigation general notes and outline specification and applicable to project;

m. Weekly and monthly watering schedule for each hydrozone;

n. Approval of irrigation system plans and specifications shall also require that the installer provide property owners and users with the following post-construction documentation, including as-constructed drawings, recommended maintenance activities and schedules, operational schedule, design precipitation rates, instructions on adjusting the system to apply less water after the landscape is established, maintenance schedule, water source, water shut-off method, and the manufacturer's operational guide for their irrigation controller. When feasible, similar information should be made available for subsequent property transfers.

o. In order to assist the property owner with the most efficient use of the irrigation system, the contractor shall supply the following information at the completion of the installation:

(1) As-built irrigation plan;

(2) Irrigation scheduling information, with instructions for seasonal timer and sensor changes; and

(3) An irrigation valve site map detailing:

(a) Gallons per minute demands;

(b) Precipitation rates;

(c) Operating pressure requirements for each valve.

~~a. Location and size of public water meter(s) (domestic and reclaimed) service(s), well or lake water or cistern storage source, pressure tank and rust chemical treatment;~~

~~b. Location and size of backflow prevention device, and automatic smart controller;~~

~~c. Static water and design pressure at point of connection and pressure regulation valve shall be installed and maintained if static service pressure exceeds 80 pounds per square inch. The pressure regulating valve shall be located after the meter;~~

~~d Location of power source (single or three phase);~~

~~e. Location, type, size, and depth of all irrigation main and lateral lines, and sleeves;~~

~~f. Location, type, size, circuit number, and gallons per minute, precipitation rate and plant types for each control valve;~~

~~g. Location and type of all irrigation heads, quick couplers, gate valves, automatic flush valves, air vacuum relief valves, soil moisture sensors, control switches, pumps, starters, and other related equipment;~~

~~h. Installation details and outline specifications for backflow prevention device, metal caging, controller, control valves, quick couplers, emitter heads, drip lines and emitters, automatic and / or manual flush valves, air vacuum, relief valves, main line and later line pipe, wire connection details, and all other irrigation related operations;~~

~~i. Irrigation legend with symbol, size, manufacturer, model number, PSI and GPM shown on each sheet;~~

~~j. Irrigation general notes and outline specification and applicable to project; and~~

~~k. Weekly and monthly watering schedule for each hydrozone;~~

~~l. Calculations for estimated monthly water savings.~~

6. Tree Management Plan. A detailed tree management plan shall only be required for those permit applications associated with the

removal of plant material as regulated under Chapter 4, Article I (Environmental Protection Standards). The applicant shall be required to submit seven (7) tree management plans sized 24" x 36" and one (1) additional copy sized 11" x 17", all of which drawn to scale, and prepared and sealed by a professional landscape architect in the State of Florida. The tree management plan shall illustrate the same general information as that shown on the site plan. The plan shall illustrate the trees that are to remain in place, as well as those which are to be relocated elsewhere on-site, including a notation regarding the reason for relocation. The plans shall also indicate the trees that are proposed to be removed and the reason for such removal.

7. **Photometric Plan.** A detailed photometric plan shall only be required for those permit applications associated with exterior lighting as regulated under Chapter 4, Article VII (Exterior Lighting Standards) or by the Engineering Design Handbook and Construction Standards. The applicant shall be required to submit seven (7) photometric plans sized 24" x 36" and one (1) additional copy sized 11" x 17", all of which drawn to scale, and prepared and sealed by a professional engineer in the State of Florida. The plans shall illustrate the same general information as that shown on the site plan, in addition to containing the following:

a. Detail of each type of exterior freestanding lighting fixtures, including material, color(s), height, and sizes;

b. Illumination levels (in footcandles), including a summary table indicating the average, minimum, and maximum footcandle levels;

c. Certification of compliance with the latest edition of the Florida Building Code and the capacity to withstand 140 MPH wind load; and

d. Proposed conduit routing.

8. **Grading Plan.** A detailed grading plan shall only be required for those permit applications associated with excavation, grading, dredging, or fill activities as regulated under Chapter 4, Article XI (Excavation and Fill Regulations). The applicant shall be required to submit seven (7) grading plans sized 24" x 36" and one (1) additional copy sized 11" x 17", all of which drawn to scale, and prepared and sealed by a professional engineer registered in the State of Florida. The plans shall illustrate the following:

a. A topographical map depicting existing grade, paved conditions, and vegetation on the referenced property and to a point 50 feet off the property in all directions;

b. A phasing plan, where applicable;

c. Soil borings indicating the depth of the various materials to be dredged or excavated;

d. A map indicating the location of soil borings;

e. A topographical map with finished land elevations shown;

f. A description of the method(s) involved in the excavation;

g. A listing of the person or persons responsible for the work proposed;

h. Tabulation of the amount of material to be moved;

i. Plans for the abatement of nuisances such as the flowing of dust and sand;

j. The steps to be taken to protect the water resources, if applicable;

k. The height and location of proposed stockpiles;

l. The duration of stockpiling;

m. The duration of the work;

n. Traffic plans to include the treatment of internal roads, private or public street crossings;

o. Points of ingress and egress to the site;

p. Location of turn lanes, if appropriate; and

q. Methods to ensure public safety during and after the work to be performed.

9. Native Florida Ecosystem Survey or Inventory. A detailed Native Florida Ecosystem Survey or Inventory shall only be required for those permit applications associated with the development of environmentally sensitive lands in accordance with Chapter 4, Article I

(Environmental Protection Standards). The evaluation of any proposed alteration of lands which are found to be environmentally sensitive shall be prepared by a professional biologist. The applicant shall be required to submit (7) surveys or inventories, sized 24" x 36" and one (1) additional copy sized 11" x 17", all of which drawn to scale. The surveys or inventories shall illustrate the following:

a. Site location map with the specific property clearly indicated;

b. Aerial photograph with the specific property clearly indicated (scale: one {1} inch equals 600} feet or less);

c. Detailed map of existing terrestrial and aquatic vegetation, including exotic species within the jurisdictional limits of wetland jurisdiction of the U.S. Army Corps of Engineers and the Florida Department of Environmental Regulation;

d. Soil types and conditions;

e. List of endangered, threatened and rare species and species of special concern found on the site;

f. Areas or sites where colonies of birds are nesting or roosting or where migratory species are known to concentrate;

g. Archaeologically and / or historically significant features as identified or recognized by State or Federal regulations;

h. Geologically significant features;

i. Areas of previous disturbance or degradation, including present and past human uses of site;

j. Surrounding land uses;

k. Conceptual footprint of site development, including buildings, roadways, parking areas, utilities, water features, flood control structures, stormwater systems, wellfield locations, landscaped areas, buffer areas, preserve areas, and other open space areas, as an overlay to vegetation mapping;

l. Status of development approvals, including permit applications; and

m. Project Operation.

(1) Description of proposed operations to be performed on the site including use, storage, handling or production of substances known to be harmful to humans, plants and/or animals;

(2) Identification of any pollutants expected to be emitted during project operation;

(3) Identification of timing and source of noise and / or vibration impacts on resident and adjacent human and animal life; and

(4) Project Alternatives.

(a) Discussion of project alternatives should be provided, including options considered and rejected and the rationale for rejection of each option considered; and

(b) Mitigation considerations should be discussed in detail as they relate to possible loss of habitat or impact on endangered, threatened or rare animal and plant species, or species of special concern.

C. Review Criteria. The land development permit shall be consistent with the corresponding site plan and final plat, and comply with the standards and requirements pertaining to paving, grading, and drainage as described in the City's Code of Ordinances, Land Development Regulations, Engineering Design Handbook and Construction Standards, and as regulated by the South Florida Water Management District and other external agencies.

D. Approval Process.

1. Initial Review. Within 20 business days following the submittal of a land development permit application, the City Engineer or designee shall review the civil engineering drawings to ensure that the paving, grading, and drainage complies with the review criteria of Section 3.C above. If deficiencies persist on the drawings, the City Engineer shall provide the applicant's engineer of record with a written account of all the issues, citing the specific chapter, article, section, and paragraph. Upon receipt of such findings, the engineer of record shall make the necessary corrections or revisions as defined in the written statement, and resubmit the civil engineering drawings to the Engineering Division.

2. **Technical Compliance and Issuance of Permit.** Once the drawings are found to be acceptable, the City Engineer or designee shall issue a written statement of technical compliance, and notify the applicant of any fees, surety (in accordance with Section 6 below based on the cost estimates provided by a duly licensed professional in the State of Florida), and permits that are required from any external agencies, such as from the South Florida Water Management District or Department of Transportation. The LDP shall be issued by the Engineering Division once the aforementioned items, the final plat, and any other documents required by the City Engineer or designee, are found to be acceptable and meets the provisions of this ordinance. The applicant will then be allowed to commence work on the impervious surface, off-street parking, vehicular use areas and loading zones, paving, grading, and drainage systems, and other required improvements as specified in Section 3.A.2 above.

3. **Construction Activity.** Construction shall be performed under the surveillance of, and at all times, be subject to review by the City Engineer or designee; however, this no way shall relieve the Florida-registered engineer of record of responsibility for administration, coordination, and final compliance with the approved plans, specifications, and all applicable rules, laws, ordinance, and resolutions. The City Engineer or designee shall have the authority to enter the property during the progress of construction. The applicant's engineer of record shall submit construction progress reports at points of progress prescribed by the City Engineer, as well as final certification of completion of required improvements. The engineer of record shall coordinate joint reviews of construction with the City Engineer or designee. The City Engineer or designee shall have the authority to stop work upon failure of the developer or engineer of record to administer and / or coordinate the construction of the required improvements as prescribed by this ordinance.

4. **Completion.** In order for final closeout and project completion of the required improvements, the engineer of record shall certify in writing that the required improvements were installed under his responsible direction; that all improvements conform with the approved civil engineering drawings, and all laws, regulations, codes, and ordinances. In addition, the applicant's engineer of record shall submit tests and reports (concerning the work and materials used during construction of the required improvements), in addition to as-built drawings on a high quality time stable reproducible material showing the original design as compared to the actual finished work.

E. Expiration. All required improvements shall be completed within one (1) year of the date of issuance of the LDP. Unless the time period is otherwise

extended, the permit shall become null and void if the applicant is unable to complete the work within the stated timeframe.

F. Extension. An applicant may petition the City Engineer to extend the approval of a land development permit for an additional time period, not to exceed one (1) year, provided that such written request for extension is filed 30 days prior to the expiration of the preceding one (1) year period. The fee for the extension shall be in the amount as adopted from time to time by the City Commission.

G. Miscellaneous. No Certificates of Occupancy will be issued for buildings in the platted developments until all required improvements are completed, approved, and / or accepted by the City, except that it is the prerogative of the developer to post an additional 110% surety for work that may be more prudently put in place subsequent to building construction, such as sidewalks and landscaping. Certificate of occupancies will not be issued until such work is approved and / or accepted by the City as completed.

Chapter 4, Article I (Environmental Protection Standards)

CHAPTER 4. SITE DEVELOPMENT STANDARDS

ARTICLE I. ENVIRONMENTAL PROTECTION STANDARDS

Section 1. General.

A. Short Title. This article shall be known and may be cited as the "City Tree Preservation Ordinance."

B. Purpose and Intent. The City recognizes the inherent value of trees and other plant material. Healthy vegetation aids in reducing destructive environmental factors to real property, such as wind, noise, and the potential for erosion to the City's soils and beaches. Trees and shrubs contribute towards energy conservation and management by

producing oxygen and absorbing carbon dioxide. They have a positive effect in surface drainage, and help to provide a beautiful and aesthetic environment for residents, businesses, and visitors. The purpose and intent of these regulations, therefore, is to promote the health, safety, and welfare of the community by establishing rules and regulations governing the protection of trees and vegetation, in conjunction with encouraging the installation and / or proliferation of healthy trees in shrubs and appropriate locations and quantities.

C. Administration. The Director of Planning & Zoning or designee shall have the authority to interpret and administer this article.

D. Applicability. The provisions of this article shall apply to all real property in the City that is intended for development or redevelopment, and when such tree removal activity is initiated by the property owner or agent thereof.

E. Exemptions. The protection standards and permitting processes of this article shall not apply to the following:

1. Single-Family Homes and Duplexes. Individually platted lots containing single-family homes and duplexes located within single-family and two-family residential zoning districts are exempt from the protection standards and permitting processes of this article, provided they do not contain specimen trees. Specimen trees shall be protected in accordance with Section 3.B below.

2. Community Garden. All fruits, vegetables, nuts, and herbs shall be exempt from the provisions of this article with respect to those that are planted and growing on the premises in connection with a community garden and when approved by the City pursuant to a zoning permit or conditional use / site plan approval, whichever is applicable.

3. Nurseries and Tree Farms. All licensed plant or tree nurseries or tree farms shall be exempt from the provisions of this article only in relation to those trees planted and growing on the premises of such licensed business, which are so planted and growing for the sale or intended sale to the general public in the ordinary course of such business.

4. Public Utility Agencies. Public utility agencies are authorized to remove existing trees that interfere with infrastructure located within easements or rights-of-way, or which

otherwise endanger the safety and welfare of the public, without the requirement or need to obtain a City permit.

5. **Emergencies.** The provisions of this article may be waived by the Director of Development during a period of emergency, such as during a hurricane, tropical storm, flood, or any other Act of God.

6. **Hazardous or Diseased Trees.** No permit is required to remove hazardous or diseased trees, provided that the subject trees are removed under the supervision of a Certified Arborist in accordance with the standards of the International Society Arboriculture (ISA).

F. Terms and Definitions. See Chapter 1, Article II for all applicable terms and definitions which pertain to the regulations and standards contained herein.

G. Conflict. Whenever the regulations and requirements of this code conflict with any other lawfully enacted and adopted rules, regulations, ordinances, or laws, the most restrictive shall apply, unless otherwise stated herein.

Section 2. City Approval Required.

No plant material or vegetation shall be cut down, moved or removed, destroyed or effectively destroyed through damaging without first securing the necessary City approvals and permits as provided hereunder, except in instances when exempt from these regulations in accordance with Section 1.E. above. The following processes and permits shall be available to ensure that all clearing and grubbing activities comply with the standards of this article:

A. Private Property and Public Lands. The property owner or agent shall file the following applications prior to commencement of any of the aforementioned clearing and grubbing activities:

1. **Site Plan Review.** Except for individually platted lots containing single-family and duplex homes located within single-family and two-family residential zoning districts, the site plan review process shall be required and reviewed in accordance with the procedures set forth in Chapter 2, Article II, Section 2.F. prior to the issuance of any land development permit. For the purpose of this subsection, the term "site plan" is construed to include master site plan and technical site plan applications, and to ultimately mean the process by which a landscape plan is approved. The City Forester may require the submittal of a tree

survey, tree management plan, Native Florida Ecosystem Survey or Inventory, or a combination thereof, as part of the site plan application, when determined necessary to identify specimen trees or to ensure compliance with the preservation efforts of Section 3.B below.

2. **Land Development Permit.** The land development permit process shall be required, and initiated only subsequent to the approval of a site plan (landscape plan) application, except in those instances when site plan review is not required. The land development permit application shall be processed in accordance with the procedures set forth in Chapter 2, Article III, Section 3. The City Forester may require the submittal of a tree survey, tree management plan, Native Florida Ecosystem Survey or Inventory, or a combination thereof, as part of the land development permit application, when determined necessary to identify specimen trees or to ensure compliance with the preservation efforts of Section 3.B below. The issuance of a land development permit shall not relieve any party from obtaining the necessary permits which may be required by the various federal, state, or local government agencies.

B. **City Rights-of-Way.** A right-of-way permit application shall be required for any proposal to remove plant material from a City right-of-way in accordance with the procedures set forth in Chapter 2, Article III, Section 4. The City Forester may require the submittal of a tree survey, tree management plan, Native Florida Ecosystem Survey or Inventory, or a combination thereof, as part of the City right-of-way permit application, when determined necessary to identify specimen trees or to ensure compliance with the preservation efforts of Section 3.B below.

Section 3. **Preservation Principles.** ~~Standards.~~

A. **High Ecological Importance.** Areas that are considered to be of high ecological importance should be given highest priority for protection. These areas include but are not limited to the following: 1) have occurrences of federal and state listed species of flora and fauna; 2) high biological diversity; 3) located in aquifer recharge zones; and 4) known to inhabit threatened and endangered species of fauna and flora. Therefore, the following natural areas shall be protected as follows:

B. **Easements and Rights-of-Way.** Utilities, stormwater easements and rights-of-way should avoid preserved areas.

C. **Contiguity.** Areas set aside for preservation should be contiguous parcels of land that are interconnected and considered viable

habitat for wildlife to the extent practical. Small fragmented areas of preservation should be avoided when possible.

Section 4. Standards.

The following standards shall be considered in order to ensure the protection of existing vegetation:

A. General. All proposed developments shall be designed to preserve, perpetuate, and improve the existing natural character of the site. Existing native trees and other landscape features shall, to the maximum extent possible, be preserved in their natural state; and additional landscape features shall be provided to enhance architectural features, to relate structural design to the site, and to conceal unattractive uses. In all instances the City's landscaping requirements and all other applicable regulations shall be fully complied with as minimum standards. No tree shall be removed from any City property, lands, public park, or any areas within a City right-of-way except in accordance with the provisions of this article.

High-quality areas placed in preservation shall be retained in entirety in their current or improved natural state, and protected in perpetuity regardless of ownership. This requirement may be negotiated to create contiguous preservation among plant communities. During the site plan review process, the applicant shall be required to prove that the highest ecologically valued land is being retained first. If the preservation of the highest ecological valued land produces undue burden on the development of the site, it shall be the applicant's responsibility to prove such hardship and provide an acceptable alternative for approval.

Rights-of-way and areas determined to be future rights-of-way in the Comprehensive Plan and utility or drainage easements shall not be allowed as designated set-aside areas.

B. Preservation Efforts.

1. **Beach Dunes.** The natural vegetative cover on beach dunes shall be preserved in an undisturbed state of growth as a fragile ecosystem. No beach dune vegetation, grass, sea grape, and tree development shall be altered, removed, or changed except in accordance with federal, state, county, and local regulations.

2. **Mangrove Areas.** Well-documented scientific research has established that mangrove areas are the ecological base of the biological food chain for many important species, including some species of fish that are important for sport and commercial fishing.

Mangrove trees, which are of considerable aesthetic value, also serve as protection against storm surge as well as provide a habitat / shelter for birds and other wildlife. For these reasons, land development and construction thereon, shall be conserved to the maximum extent possible and only altered in accordance with federal, state, county, and local regulations.

3. **Specimen Tree Designation.** The Director of Development may, by written request to the City Manager recommend from time to time the official designation of certain trees located within the City as specimen trees. If the City Manager approves such recommendation, the matter shall be presented to the City Commission for final determination. The City shall notify by certified mail the affected property owner of the proposed hearing. The City Commission shall accept, modify or deny the staff recommendation. Any proposal to remove a specimen tree shall be mitigated in accordance with Section 2.C below.

4. **Environmentally Sensitive Lands.**

a. **General.** The purpose and intent of this section is to preserve and protect the values and functions of environmentally sensitive lands from alterations that would result in the loss of these lands or significant degradation of their values and functions.

b. **Applicability.** This subsection applies to all properties that contain environmentally sensitive lands with an "A", "B", or "C" rating as pursuant to Table 2 of the Conservation Element of the Comprehensive Plan.

c. **Standards.** The following standards shall promote the preservation of natural resource sites:

(1) If the property proposed for development is greater than 10 acres, or is a portion of a larger tract containing 10 or more acres of environmentally sensitive lands designated as an "A" rated site, the developer shall be required to preserve a minimum of twenty-five 25% of all native plant communities on the site in one (1) unified preserve. Habitat shall be preserved with intact canopy, under story and ground cover.

(2) If the property proposed for development is greater than 10 acres and has been designated as a "B" or "C" rated site, the developer shall be required to preserve a minimum of 25% of all native plant communities on the site. The preserve areas may be separated into micro preserves. Habitat shall be preserved with intact canopy, under story and ground cover.

(3) Natural resource sites identified in Table 2 of the Conservation Element of the Comprehensive Plan and that exceeds 10 acres shall be subject to the 25% preserve area set aside notwithstanding subdivision into smaller parts.

(4) The specific location of the preservation area shall be determined during the review of a master plan or site plan. If no master plan or site plan is required, then such determination shall occur during the review of the proposed plat. The ultimate area to be preserved shall be indicated on the approved plan and any corresponding plat. In determining the most appropriate location for the preserve area within the site, the City shall consider factors, which include, but are not limited to the following: 1) proximity of the preserve area to developed and undeveloped property; 2) potential for immediate or future consolidation with environmentally sensitive lands on abutting properties; 3) ability to maintain the preserve area based upon surrounding development and land uses; and 4) the recommendations of staff or any consultants retained by the City. The Preserve Area shall be maintained in accordance with a City approved Preserve Area Management Plan.

C. Mitigation of Existing Trees. All existing trees that are not preserved in place, or relocated on-site (as requested by the developer) shall be mitigated in connection with a land development permit, by installing replacement trees in accordance with the following:

1. Total Number of Trees. The total number of existing trees shall be replaced on-site with an equal or greater number of replacement trees;

2. **Caliper Inches.** The cumulative caliper inches of existing trees (to be removed) shall be replaced on-site with an equal or greater number of caliper inches of replacement trees.

3. **Species.** All replacement trees must be Florida-Friendly and drought tolerant species and comply with Chapter 4, Article II, Section 4.A.1.

4. **Size.** The minimum size of all replacement trees, including their height and caliper inches shall comply with the standards of Chapter 4, Article II, Section 4.A.3, regardless of whether the existing tree with which it is replacing meets the minimum standards thereto.

5. **Prohibited Trees, Invasive, and Exotic Species.** See Section 5 below for the mitigation requirements and removal provisions of prohibited, exotic, and invasive species.

6. **Miscellaneous.** On-site tree replacement requirements may be changed or reduced by the Director of Planning and Zoning or designee if determined that on-site conditions make conformance impractical. The type and size of all replacement trees shall comply with Florida Power & Light Company's "Plant the Right Tree in the Right Place" publication, where applicable, and with city regulations where located within utility easements.

D. Forestry Practices and Procedures.

1. **General.** The Director of Planning and Zoning or designee shall use "The Urban Forestry Manual (L)-Trees and Construction", United States Department of Agriculture Forest Service, 2005 edition or latest supplement thereof as the arboricultural standard when determining which forestry practice or procedure to apply when reviewing the following types of activities: 1) any proposal to relocate, replace, or remove trees that are subject to the standards and permitting processes of this article; 2) any proposal where the grade of the site is to be raised or lowered around an existing plant; 3) where ditching for utilities, foundations, swimming pools, driveways or the like will severely cut root systems; 4) where large paved areas will delete the water supply and aeration necessary for the life of the tree or shrub; 5) or where a change in the grade or drainage of development will seriously harm natural areas to be retained.

2. **Land Clearing and Construction.**

a. Vegetation that is set aside for preservation shall be protected from all on-site construction. During the land clearing and construction stage of development, the developer shall erect and maintain protective barriers (to City requirements consistent with best management practices) around all trees or groups of trees to be protected. The developer shall not allow the movement of equipment or the storage of equipment, materials, debris or fill to be placed within the protective barrier. Removal or re-grading of soils within preservation areas is prohibited. Any damaged vegetation located within the set-aside areas shall be replaced with vegetation equivalent to the vegetation destroyed.

b. During the construction stage of development, the developer shall not allow the cleaning of equipment or material within the drip line of any protected tree or groups of trees. Neither shall the developer allow the disposal of waste materials such as paint, oil solvents, asphalt, concrete, mortar, and the like within the drip line of any tree or groups of trees.

c. No attachments or wires other than those of a protective nature shall be attached to any tree.

d. If more than one (1) native terrestrial plant community is present on-site, areas representing all existing plant communities shall be preserved on-site unless preserving more of one particular community is more ecologically beneficial.

E. Seeding and Mulching. Properties shall be seeded with drought tolerant grass or other Florida-Friendly landscape material, and mulched within 30 days after any clearing, grubbing, excavating, or filling activity, or prior to request for inspection to close out the land development permit, whichever occurs first, or subsequent to other major building demolition or site work. In the case where other site work is to occur and seeding and mulching will not be performed, the other site precautions, such as silt or erosion control fencing as deemed appropriate, protection of storm drains, etc., shall be immediately implemented. Staff shall inspect the seeded and mulched areas to ensure that adequate ground coverage has been obtained. Repeated seeding and mulching may be required until the satisfactory coverage is accomplished.

Section 5. ~~4.~~ Hazardous or Diseased Trees.

Any dying or dead tree the City determines poses a threat, hazard, or danger to the public shall be removed without delay by the property owner, without the need for obtaining a permit, provided the subject tree is removed under the supervision of a Certified Arborist in accordance with the standards of the International Society Arboriculture (ISA). This provision shall include diseased trees or those in a condition that could potentially contaminate other trees, such as the lethal yellowing of coconut palm trees.

Section 6. ~~5.~~ Prohibited Trees, Exotic, and Invasive Species.

A. General. Plants classified as a Category I species on the current prohibited list published by the Florida Exotic Pest Plant Council (FLEPPC) is not allowed within the City.

B. Tree Removal and Mitigation. Any tree classified as a prohibited species under this subsection shall be removed at the expense of the property owner prior to commencement of construction in accordance with the following:

1. Vacant and Undeveloped Property.

a. Less than Two (2) Acres. If the parcel of property is less than two (2) acres, no permit or review by the City is required to remove the exotic tree species listed above. A courtesy inspection and identification of exotic species may be performed by staff, at no cost to the property owner, upon request of the property owner.

b. Two (2) Acres or Greater. If the parcel of property is equal to or greater than two (2) acres, a land development permit shall be required in accordance with the procedures set forth in Chapter 2, Article III, Section 3 to remove exotic and invasive species, except where exempt under the provisions of Section 1.E above.

2. Developed Property. On properties that have valid site plan (landscape plan) approval, no land development permit shall be required to remove exotic or invasive trees unless the subject trees were previously approved as part of, or contribute to landscape buffering, or to otherwise comply with the standards of Chapter 2, Article II Landscape Design and Buffering Standards. In these instances, the removal of all such trees shall be subject to the mitigation requirements of Section 3.C above at the expense of the property owner. For the purpose of this section, the term "site plan" is construed to include master site plan and technical site

plan applications, and to ultimately mean the process by which a landscape plan is approved.

Chapter 4, Article II (Landscape Design & Buffering Standards)

ARTICLE II. LANDSCAPE DESIGN AND BUFFERING STANDARDS

Section 1. General

A. Short Title. This article shall be known and may be cited as the "City Landscape Code."

B. Purpose and Intent. It is the purpose of this article to protect and improve the appearance and character of the community by increasing the quality of landscaping visible from public or private streets and adjacent properties; to increase the durability of landscape material in order to withstand environmental hazards such as hurricanes; to conserve valuable energy and water; and to ensure the quality installation and maintenance of landscaping. The specific objectives of this article are as follows:

1. **Appearance.** To improve the aesthetic appearance of development through creative landscaping that helps to enhance the natural and built environment;

2. **Environment.** To improve the environment by maintaining permeable land area essential to surface water management and aquifer recharge; reducing and reversing air, noise, heat, and chemical pollution through the biological filtering capacities of trees and other vegetation; promoting energy conservation through the creation of shade; and reducing heat gain in or on buildings or paved surfaces;

3. **Water Conservation.** To promote water conservation by requiring the use of native and drought tolerant landscape material; promoting the use of water conserving irrigation practices; and requiring adherence to landscape installation standards and maintenance procedures that promote water conservation;

4. **Preservation.** To encourage the preservation and planting of native trees and vegetation as part of landscape design;

5. **Compatibility.** To improve compatibility of land uses through the strategic placement and quantity of landscape material;

6. **Land Value.** To maintain and increase the value of land by requiring landscaping that where installed and maintained properly, becomes a capital asset.

7. **Human Value.** To provide physical and psychological benefits to persons and to reduce noise and glare by softening the harsher visual aspect of development.

C. Administration. The Director of Planning and Zoning or designee shall have the authority to interpret and administer this article.

D. Applicability. The provisions of this article shall be considered the minimum standards and shall apply to new construction, major modifications to existing sites, and newly created landscaped areas where compliance with regulations does not decrease conformance with off-street parking regulations.

E. Exemptions. The following are exempt from the permitting processes and standards of this article:

1. **Single-Family and Duplex Dwelling Units.** Single-family and duplex dwelling units located on individually platted lots within single-family or two-family residential zoning districts, notwithstanding the cross-visibility and safe-sight regulations of Chapter 3, Article II, Section 6. For clarification, if a property was rezoned to a planned residential zoning district and developed with platted lots for single-family or duplex homes, all plant material installed or relocated within each lot shall be exempt from the standards and permitting processes of this article, unless such plant material was installed or relocated in connection with an approved landscape plan.

2. **Off-Street Parking in Garages.** Off-street parking and circulation areas located within enclosed parking structures; and

3. **Miscellaneous.** Public improvements, such as schools, parks, streets, and medians, having separate design requirements regulated by other agencies. The improvements should be designed to meet the intent of these standards without strict adherence thereto.

F. Terms and Definitions. See Chapter 1, Article II for all applicable terms and definitions which pertain to the regulations and standards contained herein, including Florida-friendly landscaping principles.

G. Conflict. Whenever the regulations and requirements of this code conflict with any other lawfully enacted and adopted rules, regulations, ordinances, or laws, the most restrictive shall apply, unless otherwise stated herein.

H. Relief from Standards. Unless described otherwise, any deviation from the standards contained herein shall require approval of a variance application, which is subject to review and approval by the City Commission. A request for a variance shall be reviewed in accordance with Chapter 2, Article II, Section 4.D.

Section 2. City Approval Required.

No landscape material or vegetation shall be installed, relocated, or removed without first securing the necessary City approvals and permits as provided hereunder, except in instances when exempt from these regulations in accordance with Section 1.E above. The following processes and permits are intended to ensure compliance with the standards of this article:

A. Private Property and Public Lands. The property owner or agent shall file the following applications prior to commencement of any of the aforementioned installation and relocation activities:

1. Site Plan Review. The site plan review process shall be required and reviewed in accordance with the procedures set forth in Chapter 2, Article II, Section 2.F prior to the issuance of any land development permit. For the purpose of this subsection, the term "site plan" is construed to include master site plan and technical site plan applications, and to ultimately mean the process by which a landscape plan is approved. The City Forester may require the submittal of a tree survey, tree management plan, irrigation plan, Native Florida Ecosystem Survey or Inventory, or combination thereof, as part of the site plan application, when determined necessary to identify specimen trees or to ensure compliance with the preservation efforts of Chapter 4, Article I, Section 3.B.

2. Land Development Permit. The land development permit process shall be required, and initiated only subsequent to the approval of a site plan (landscape plan) application, except in those instances when site plan review is not required. The land development permit shall be processed in accordance with the procedures set forth in Chapter 2, Article III, Section 3. The City Forester may require the submittal of a tree survey, tree management plan, irrigation plan, Native Florida Ecosystem Survey or Inventory, or combination thereof, as part of the land

development permit application when determined necessary to identify specimen trees or to ensure compliance with the preservation efforts of Chapter 4, Article I, Section 3.B. The issuance of a land development permit shall not relieve any party from obtaining the necessary permits which may be required by the various federal, state, or local government agencies.

B. City Rights-of-Way. A right-of-way permit application shall be required for any proposal to install or relocate plant material within a city right-of-way in accordance with the procedures set forth in Chapter 2, Article III, Section 4.

Section 3. Landscape Design Principles.

The following design principles shall be applied in conjunction with the design and buffering standards of this article:

A. Natural Landscapes. Landscape designs should preserve and enhance existing natural landscapes, specimen trees, and native vegetation. Where previous landscaping has dramatically altered natural landscapes, new designs should re-establish original landscape patterns and plantings.

B. Composition. The quality of a landscape design is dependent not only on the quantity and selection of plant materials but also on how that material is arranged. Landscape materials should be arranged in a manner as to provide textured appearance and contrasting color through the use of a variety of plant materials. The three-dimensional form of the landscaping should be considered, so that the final design presents a coherent whole.

C. Buffering and Screening. The use of natural landscape materials (trees, shrubs, hedges) is preferred over the sole use of human-made materials, such as buffer walls and fences, for buffering differing land uses, for providing a transition between abutting properties, and for screening the view of any parking, storage, or service areas visible from a public street or pedestrian area.

D. Responsive to Local Character. Landscape designs should build on the unique physical characteristics of the site and general area, conserving and complementing existing natural features. Naturalistic design elements such as staggered plant spacing, undulating berm contours, and mixed proportions of plant species should be used to ensure that new landscaping blends in and contributes to the quality of the surrounding area.

E. Use of Drought Resistant and Native Plants. Landscape designs should utilize drought tolerant plant materials to the maximum extent feasible. The use of drought-tolerant plants should enrich the existing landscape character, conserve water and energy, and provide as ~~pleasant~~ colorful and varied a visual appearance as plants that require more water. Landscape designs should feature native and/or related plant species, especially in areas adjacent to existing native vegetation, to take advantage of the unique natural character and diversity of the region and the adaptability of native plants to local environmental conditions. Where feasible, the re-establishment of native habitats should be incorporated into the landscape design. Plant selection should be based on the plant's adaptability to site conditions and existing native plant communities, particularly considering appropriate hardiness zone, soil type and moisture conditions, light, mature plant size, desired effect, color, and texture. Plant species that are drought-tolerant and freeze-tolerant are preferred.

F. Continuity and Connection. Landscaping should be designed within the context of the surrounding area, provided that the landscaping is also consistent with these design principles. Whether the design intent and surrounding landscape is naturalistic or formal, plant materials and design should blend well with adjacent properties, particularly where property edges meet, to create a seamless and natural landscape.

G. Enhancing Architecture. Landscape designs should be compatible with and enhance the architectural character, features, and scale of the buildings on site, and help relate the building to the surrounding landscape. Major landscape elements should be designed to complement architectural elevations and rooflines, through color, texture, density, and form on both vertical and horizontal planes.

H. Energy Conservation and Sustainable Design. Attention should be given to locating landscape elements in a manner that supports energy conservation. Large tree canopies should be utilized to provide daytime shading for buildings, reducing energy consumed for interior air conditioning. Landscape designs should also consider natural drainage features and the use of pervious surfaces and areas to minimize stormwater runoff. The use of pervious surfaces is preferred, therefore impervious surfaces and materials within landscaped areas should be limited to borders, sidewalks, step stones, and other similar materials. Gravel, river rock, shell and similar materials should be used minimally because they increase the need for herbicide use, have no habitat value, reflect rather than absorb heat, and do no produce oxygen like plants. Finally, the solar orientation of the project and its relationship to other properties should be considered as this may produce microclimate

exposures (e.g., sun vs. shade, southern exposure vs. northern exposure, surrounded by heat-reflective surfaces, etc.).

I. **Quality Pedestrian Environment.** Landscape designs should give special attention to ensure a safe and attractive pedestrian environment. In high activity areas, such as commercial and workplace settings, benches, kiosks, artwork, and other streetscape elements should be incorporated into landscape designs. Pedestrian access to sidewalks or buildings should be considered in all landscape designs, with special consideration of pedestrian sightlines, especially at crosswalks.

J. Pesticide Management.

1. **Generally.** All applications of pesticides, including Weed and Feed products, for hire should be made in accordance with federal and state law and with the Florida-Friendly Best Management Practices for Protection of Water Resources by the Green Industries or latest supplement thereof.

2. **Integrated Strategy.** Property owners and managers are encouraged to use an Integrated Pest Management Strategy as currently recommended by the University of Florida Cooperative Extension Service Publications.

K. Site Preparation, Maintenance, and Cutting.

1. **Generally.** Landscape maintenance for hire should be performed in accordance with recommendations in the *Florida-Friendly Best Management Practices for Protection of Water Resources by the Green Industries*. In no case should grass clippings, vegetative material, and / or vegetative debris either intentionally or accidently, be washed, swept, or blown off into stormwater drains, ditches, conveyances, water bodies, wetlands, or sidewalks or roadways. When mowing near a shoreline, direct the chute away from the water body. Riparian or littoral zone plants that do not require mowing or fertilization should be planted in these areas.

2. **Shoreline Considerations.**

a. **Grading and Design.**Grading and design of property adjacent to bodies of water shall conform to federal, state, and City regulations, including but not limited to the use of berms and / or swales to intercept surface runoff of water and debris that may contain fertilizers or pesticides.

b. **Low Maintenance Zone.** A voluntary six (6) foot low maintenance zone is recommended from any pond, stream, water course, lake, wetland, or from the top of a seawall. A swale / berm system is recommended for installation at the landward edge of this low maintenance zone to capture and filter runoff. If more stringent City regulations apply, this principle does not relieve the requirement to adhere to the more stringent regulations. No mowed or cut vegetative material should be deposited or left remaining in this zone or water. Care should be taken to prevent the over-spray of aquatic weed products in this zone.

c. **Miscellaneous.** Also refer to the Florida Department of Environmental Protection's (FDEP) "Florida Waterfront Property Owners Guide" or the Florida Fish and Wildlife Conservation Commission's "Invasive Plant Management Section." Where water levels vary considerably, care must be taken in the selection of these plants. Mangrove trimming shall be performed in accordance with Florida Statutes. The Florida Waterfront Property Owners Guide should be referred to for additional information about Florida-Friendly shoreline practices.

Section 4. Standards.

It is the objective of this section to provide landscaping standards tailored to distinct geographic areas of the City to ensure that the type, quantity, and size of required material is commensurate with the type, intensity, scale, and location of new development and particularly consistent with vehicular movement, streetscape design, pedestrian habits and routes, and design relationship between projects. The intent of these standards is to promote a landscape design pattern that is functional, practical, equitable, and creative.

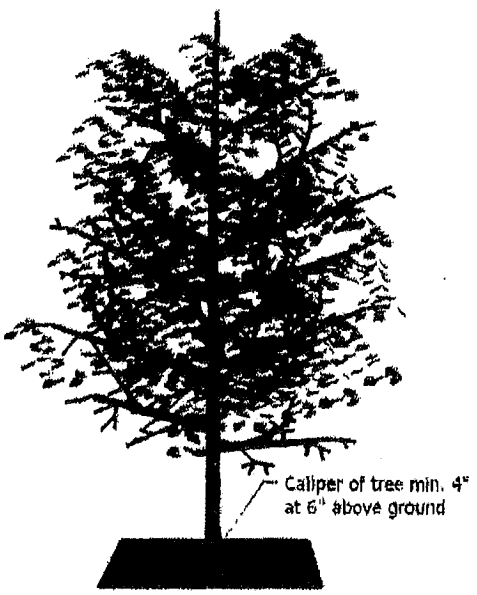
A. City-Wide Standards. The following standards shall apply to all properties in the City, except for those exempted in Section 1.E of this article:

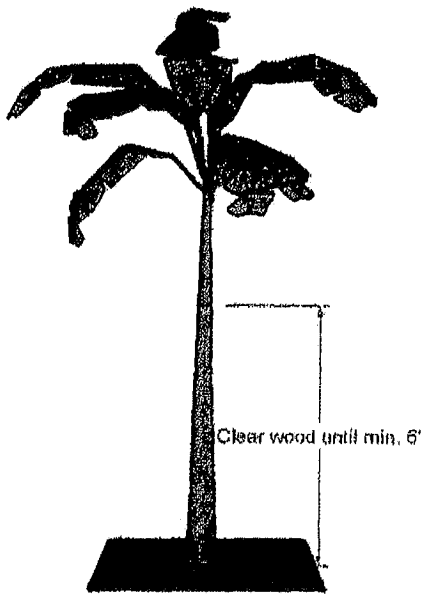
1. Native and Drought Tolerant Species. Plant materials to be used are limited to those classified as "low" and "medium" in the publication "Waterwise South Florida Landscapes," published by the South Florida Water Management District (SFWMD). The maximum extent possible, plant selection should emphasize Waterwise or Florida-Friendly plants.

2. **Prohibited Species.** Plants classified as a Category I species on the current prohibited list published by the Florida Exotic Pest Plant Council (FLEPPC) is not allowed within the City. The initial eradication and ongoing removal of prohibited plant species that have become nuisances because of their tendency to disrupt or destroy native ecosystems is promoted herein.

3. **Plant Material.** All plant ~~Plant~~ materials used in conformance with provisions of this article shall conform to the Standards for Florida No. 1 or better as given in "Grades and Standards for Nursery Plants", State of Florida, Department of Agriculture, Tallahassee, or equal thereto. Sod shall be clean and reasonably free of weeds and noxious pests or diseases.

a. **Trees.** The caliper of all trees, except for palms and those trees classified as a development's "signature tree" (see subparagraph "(1)" below) shall be a minimum of four (4) inches at the time of installation. The caliper shall be measured no higher than six (6) inches above the ground. No minimum caliper size is required for palm trees. However, palm trees shall have a minimum of six (6) feet of clear wood at the time of planting.





(1) Signature Tree. A signature tree shall be installed at both sides of a development's entrance (ingress). The caliper of a development's signature tree shall be a minimum of one (1) inch at the time of installation. Signature trees, if sized with a caliper of less than four (4) inches at the time

of installation, cannot count toward meeting the minimum number of trees required on-site. Signature trees include the following species:

(i) ~~Purple Glory Tree (*Tibouchina granulosa*);~~

~~(ii)~~ Yellow Elder (*Tecoma stans*);

(ii) ~~(iii)~~ Bougainvillea (*Bougainvillea*);

(iii) ~~(iv)~~ Glaucous Cassia; (*Cassia surattensis*); and

(iv) ~~(v)~~ Orange or White Geiger (*Cordia sebestena or boissieri*).

(2) Species. The minimum number of different species of trees provided shall be as follows:

See next page.

(i) Table 4-1 Tree Species.

Number of Trees Provided	Number of Required Tree Species
1-5	1
6-10	2
11-30	3
31-60	4
61-100	5
101 and over	6

(ii) Signature trees, if sized with a caliper of four (4) inches or greater at the time of installation, may count towards meeting the minimum number of required species of trees. The caliper shall be

measured no higher than six (6) inches above the ground; and

(iii) Palm species, in a cluster of three (3) trees with varying heights, shall represent the equivalent of one (1) canopy tree.

b. Shrubs and Hedges. Shrubs and hedges shall be planted a minimum of 24 inches in height, 24 inches in spread with tip-to-tip spacing measured immediately after planting to form a continuous opaque landscape barrier within one (1) year. The minimum hedge height may be reduced to 18 inches if planted in conjunction with a berm where the minimum combined height is 36 inches.

c. Vines. Vines shall be a minimum of two (2) feet in height, spaced five (5) feet apart immediately after planting. Vines may be used in conjunction with fences, screens and / or walls to contribute towards meeting physical screening requirements as specified.

d. Lawn. While sod / turf areas have practical benefits in a landscape, the magnitude and location of the sod in a project represents the majority of a site's irrigation needs. Irrigated sod / turf areas, as opposed to non-irrigated sod / turf areas are considered to be a high water use (hydrozone). Therefore, in all developments, including public and private parks, the use of sod / turf shall be restricted to park and open space areas intended for passive or active recreation purposes or when required for drainage and storm water management (e.g., swales, retention, detention areas) when the use of other drought tolerant surface material is not feasible. Sod / turf shall be installed such that it can be irrigated using separate zones. The intent is to promote sustainable landscaping design by reducing water consumption and unnecessary irrigation of small, strip, or remnant surfaces of a site. The use of drought tolerant plant material is preferred over the use of sod for those areas of a site.

~~In all developments, including public and private parks, the use of sod shall be restricted to large park-like areas available for passive or active recreation purposes, or when required for drainage and storm water management (e.g. swales, retention, detention areas). The intent is to promote sustainable landscaping design by reducing water~~

~~consumption and unnecessary irrigation of small, strip, or remnant pervious surfaces of a site. The use of drought tolerant plant material is preferred over the use of sod for those areas of a site.~~

4. Existing Plant Material. Existing healthy plant material, in part or in whole, may count toward required plant material if such use furthers the objectives of this article regarding preservation, water conservation, and beautification.

5. Water Source. To conserve water, potable water is not to be used for irrigation purposes. Instead, alternative sources of water shall be used for irrigating landscaping materials such as well water, lakes, and/or reclaimed water where available and to be used in compliance with City and County regulations. Where ground water is not available of the quality necessary for irrigation purposes, and other preferable sources are not available, potable may be used in accordance with the following requirements:

a. Approval is obtained from the Department of Utilities;

b. The site irrigation system must be designed to only use a restricted number of gallons per month (water bill);

c. The site irrigation system must be designed to automatically remove all established trees off watering at the end of year one;

d. The site irrigation system must be designed for simple removal of all established trees on separate zones from watering at the end of the first year;

e. All trees, shrubs, and plants (no sod) used in the site landscape design must be identified as having low watering needs in the South Florida Water Management District's "Waterwise" publication; and

f. Landscape and irrigation improvements must be inspected annually for compliance with these requirements.

6. Irrigation. All landscaped areas shall be provided with an automatic water supply system as approved through a land development permit (see Chapter 2, Article III, Section 3). Irrigation systems shall be designed as follows:

a. To provide the minimal water volume based on the particular watering needs of individual plant species; ~~promote water conservation, landscape (bedding) areas shall be designed on separate zones by plant drought tolerances. All trees shall contain drip bubblers and be on a separate zone;~~

b. To consider soil, slope, and other site characteristics in order to minimize water waste, including overspray, the watering of impervious surfaces and other non-vegetative areas, and off-site runoff; ~~Reused water may be required in accordance with Chapter 26, Article VIII of Part II City Code of Ordinances if a main supply is within 500 feet of the site and permitted by the Palm Beach County Health Department;~~

c. To minimize free flow conditions in case of damage or other mechanical failure; ~~The irrigation system must contain a rain gauge;~~

d. To use the lowest quality water feasible. Reused water may be required in accordance with Chapter 26, Article VIII of Part II City Code of Ordinances if a main supply is within 500 feet of the site and permitted by the Palm Beach County Health Department; ~~Natural areas and native vegetation, which remain undisturbed by development, may be excluded from receiving irrigation;~~

e. To include rain switches and other approved devices, such as soil moisture sensor controllers to prevent unnecessary irrigation; ~~Irrigation is not required for landscaped areas that have been entirely planted with drought tolerant species, once established and approved by the City. However, irrigation systems must be kept in operation at all times.~~

f. A recommended season operating schedule and average precipitation rates for each irrigation zone for both establishment and maintenance conditions shall be provided by the system controller;

g. Provide the following minimum capabilities:

(1) Programmable in minutes, by day of week, season, and time of day;

(2) Ability to accommodate multiple start times and programs;

(3) Automatic shutoff after adequate rainfall;

(4) Ability to maintain time during power outages for a minimum of three (3) days; and

(5) Operational flexibility to meet applicable year-round water conservation requirements and temporary water shortage restrictions.

h. Precipitation rates for sprinklers and all other emitters in the same zone shall be matched, except that micoirrigation emitters may be specified to meet the requirements of the individual plants.

i. To consider factors that maximizes uniformity such as:

(1) Emitter types;

(2) Head spacing;

(3) Sprinkler pattern; and

(4) Water pressure at the emitter.

j. To correlate to the organization of each hydrozone. All plants requiring watering during establishment. Temporary facilities may be installed to facilitate establishment. Irrigation must be conducted in accordance with restrictions imposed by the South Florida Water Management District (SFWMD);

k. To avoid irrigation during periods of sufficient soil moisture, automatic shut-off equipment with sensing devices shall be required and used;

l. If the water supply for the irrigation system is from a well, a constant pressure flow control device or pressure tank with adequate capacity shall be required to minimize pump "cycling," if there is a pressure switch in the design;

m. Check valves must be installed at irrigation heads as needed to prevent low head drainage and puddling;

n. Nozzle precipitation rates for all heads within each valve circuit must be matched to within 20% of one another;

o. No water spray from irrigation systems shall be applied under roof overhangs; and

p. Irrigated areas shall not be less than four (4) feet wide, except when next to contiguous property or using micro, drip, or spray irrigation.

q. A regular irrigation maintenance schedule shall include but not be limited to checking, adjusting, and repairing irrigation equipment; and resetting the automatic controller according to the season and inspected by the City.

r. To maintain the original performance and design integrity of the irrigation system, repair of the equipment shall be done with the originally specified materials or their equivalents.

7. **Installation.** All landscaping shall be installed in accordance with a land development permit and in a competent manner according to certified planting procedures with the quality of plant materials as hereinafter described. (All elements of landscaping shall be installed so as to meet all other applicable ordinances and code requirements).

a. **Vehicular Encroachment.** Landscaped areas shall require protection from vehicular encroachment by wheel stops, curbs, and / or decorative bollards. All landscaped areas with trees adjacent to sidewalks or vehicular use areas may require the use of root deflector products to prevent damage from root growth. All landscape areas containing trees and vegetation shall be first filled with City inspected clean fill (soil).

b. **Clean Fill.** All planted areas on the site shall first be filled with clean fill to a depth of one (1) foot from the surface along the entire length of the green space, island, or landscape buffer.

c. **Inspection.** The City shall inspect all clean fill, irrigation systems, and landscape improvements prior to

installation. No temporary certificate of occupancy will be issued until the clean fill, irrigation, and landscaping improvements meet the requirements provided herein or the applicant submits surety for 110% of the value of the incomplete clean fill / landscape / irrigation improvements. Surety will be released upon completion and inspection of incomplete improvements.

8. Mulch (Non-living Plantings). Mulch applied and maintained at appropriate depths promotes moisture retention, reduces weed growth, and prevents erosion. Mulch can be used in places where conditions are inadequate for or not conducive to growing quality ground covers. Mulches are typically wood bark chips, wood grindings, pine straws, nut shells, small gravel, and shredded landscape clippings. Planting areas, including those around individual trees shall be mulched to a minimum depth of three (3) inches at the time of inspection and maintained at this depth thereafter. Use of byproduct or recycled mulch is recommended; however, in no instance is cypress mulch allowed. ~~No Cypress mulch shall be used.~~ All mulch material shall be free of seeds and weeds to prevent tree sprouting and regrowth. Plastic sheeting and other impervious materials shall not be used under mulched areas. Mulches should be kept at least six (6) inches away from any portion of a building or structure, or the trunks of trees.

9. Upland Buffer / Littoral Plantings Lake and retention areas in excess of one-half (½) acre shall be planted to create a habitat that provides the optimal environment for upland and / or aquatic species. Lakes, ponds, and rentention areas provided for new construction or major modifications of existing projects shall be planted as follows:

a. To occupy a minimum of 50% of lake perimeter with littoral plantings;

b. To occupy a minimum of 50% of lake perimeter with upland plantings contiguous with the littoral plantings;

c. To consist of a minimum of 10 square feet of littoral shelf per one (1) linear foot of shoreline, using five (5) different native plant species (littoral plantings);

d. To consist of a minimum of one (1) native tree, 25 native shrubs using two (2) species, and 10 native ferns and groundcover plant species (upland plantings); and

e. All vegetation installed contiguous, at a minimum of three to one (3:1) slope, 100% appropriate native vegetation, installed with proper spacing for full coverage of littoral shelf areas within one (1) year. All littoral and upland plantings established consistent with these standards shall be installed, maintained, and reported quarterly to the Director of Planning and Zoning or designee for a period of two (2) years by a natural areas certified contractor in accordance with a management plan approved by the City at the time of site plan approval or permitting.

10. Landscaping within Easements. All easement locations and specific types of easement shall be identified on the landscape plan. Easements may overlap a required landscape strip or perimeter buffer by a maximum of five (5) feet. However, detention / retention areas, drainage easements, and sloped directional swales greater than one (1) foot below finished grade, shall not be located in or overlap required landscaped areas, unless otherwise approved in writing by the City Engineer and the Director of Development, or their designee. Where the conflict between easements and landscape strips or perimeter buffers is unavoidable, the strips and buffers may be separated from the property boundary by the easement, if all requirements and objectives for screening / buffering are met. Shrub and tree selections shall be based on root characteristics and size restrictions as described in "Waterwise", a publication of the South Florida Water Management District, and in "Plant the Right Tree in the Right Place," as published by the Florida Power & Light Company.

a. All trees planted in or in close proximity to an easement shall be installed consistent with the *Engineering Design Handbook and Construction Standards* for Landscaping, Irrigation, and Lighting.

b. Landscape strips and buffers shall be required to extend a minimum of five (5) feet beyond the easement for planting the largest canopy tree possible as allowed by FPL and City standards. If a buffer wall with a continuous footer is used, a minimum of ten (10) feet outside of the easement for planting is required.

c. The abutting easement shall be entirely planted with shrubs and trees according to a design similar to the adjoining or overlapping landscape strip or buffer.

d. Roots and branches of trees shall not impact existing underground or overhead utilities and infrastructure. Trees planted in close proximity to easements shall be the largest possible and selected to avoid aggressive root systems. Root barriers shall be required to protect nearby underground infrastructure and parking lots and curbing.

e. Trees shall be maintained so that the mature tree canopy is a minimum of ten (10) feet from overhead lines.

11. Landscaping within Rights-of-Way.

a. General. Landscaping may be planted within public rights-of-way, subject to review and approval of the Forestry and Grounds Manager. No person may plant, remove, destroy, prune, set out, break, cut, deface or in any way injure or interfere with any tree, shrub, or similar plant on any street or alley, or upon property owned or maintained by the city, without first obtaining a public right-of-way permit pursuant to Chapter 2, Article III, Section 4.

b. Relief from Standards. Any deviation from the standards of this subparagraph would require a waiver, which is subject to review and approval of the City Engineer. A request for a waiver shall be reviewed in accordance with Chapter 2, Article III, Section 5.

c. Standards. Limited non-invasive planting may be allowed in swales and / or rights-of-way subject to the following conditions:

(1) Sod may be placed in public swale areas provided that such sod or grass is not permitted to grow to a height in excess of six (6) inches;

(2) Trees may be permitted within swale areas and medians but must be high enough so as to provide an eight (8)-foot clearance between the lowest hanging branch or leaf and the existing grade;

(3) All landscape work within the public right-of-way shall be consistent with Florida Department

of Transportation and Palm Beach County regulations, where applicable, and must conform to the latest edition of the Public Works Department Forestry and Grounds Manual and the Engineering Design Handbook and Construction Standards for Landscaping, Irrigation & Lighting (Volume II) or latest supplement thereof.

(4) Planting cannot significantly interfere with maintenance of existing utilities;

(5) If planting is allowed and installed within swales and / or rights-of-way, the adjacent property owner assumes total responsibility for repairing / restoring the swale / right-of-way to its original condition if the swale / right-of-way is disturbed for installation and / or repair of utilities either already in place or constructed in the future. The property owner also assumes the maintenance responsibility for the swale / right-of-way.

(6) Also see Section 4.B.5 below for additional "streetscape design" requirements.

12. Landscaping within Off-Street Parking Lots. The intent of this subsection is to encourage landscape design that will facilitate the optimal growth of hardy trees, prevent future damage to off-street parking areas from tree root systems, and to enhance and screen off-street parking areas. Off-street parking and vehicular use areas shall include landscape islands designed as follows:

a. Required Landscaping. Off-street parking areas, excluding those spaces located within parking garages, shall have at least 25 square feet of parking lot landscape islands (e.g., green space) per parking space, including those on-street parking spaces allowed in accordance with Chapter 4, Article V, Section 4.C;

b. Tree Size and Type. Parking lot landscape islands shall be designed to correspond with the size and growing characteristics of the intended tree species. Types of required trees exclude palm species, and tree sizes proposed within each island shall directly correspond with the size descriptions included in the South Florida Water Management District publication, "Waterwise";

c. **Large Islands.** Landscape islands sized greater than 224 square feet in area are defined as "large islands" and shall not be less than 15 feet in width in any dimension. Each large island shall contain a minimum of one (1) tree, classified as a large tree (see paragraph "b" above for description of a large tree). A minimum of 75% of the landscape islands shall be large islands within developments that are required to have up to 249 parking spaces. A minimum of 85% of the landscape islands shall be large islands within developments that are required to provide 250 or more parking spaces;

d. **Small Islands.** The remaining required green space within off-street parking areas shall be allocated to "small islands", which are defined as landscape islands sized at least 150 square feet in area and no less than 10 feet in width in any dimension. Each small island shall contain one (1) tree classified as a "small" tree;

e. **Plantings.** All landscape islands shall be entirely planted with shrub species;

f. **Cross Visibility.** All plant material proposed within each landscape island shall maintain unobstructed cross-visibility at a level between 30 inches and eight (8) feet above pavement to avoid traffic hazards. Canopy or palm trees shall not have limbs and / or foliage that extend into this cross-visibility area. Plant selection should be based on the growing characteristics as described in the publication "Waterwise" to best conform to the visibility requirements stated above and to allow for proper maintenance without degrading the quality and appearance of established plant species; and

g. **Lighting.** Lighting fixtures within off-street parking areas shall be strategically located to avoid future conflicts with mature tree canopies.

13. **Maintenance.**

a. **General.** The property owner shall be responsible for the maintenance of all irrigation and landscaping which shall be maintained in a certified condition so as to present a healthy, neat, and orderly appearance free from refuse and debris. All newly

landscaped properties shall receive an initial clean fill / landscape / irrigation inspection and thereafter a semi-annual inspection for compliance with these regulations. All conflicts between landscape improvements and site signage, parking lot light fixtures, or vehicular safety movements will be corrected as part of the semi-annual inspection process.

b. International Arborist Association (IAA) Standards. All plantings, including trees, must not be trimmed or sheared of foliage during the first growing year and must be maintained to continue the buffering/screening objective of these regulations. All existing and newly installed trees must be trimmed under the supervision of a Certified Arborist in accordance with the standards of the International Arborist Association (IAA). All existing and newly installed materials not pruned in accordance with the IAA standards must be removed and replaced on the site. The total diameter inches of the new trees must equal the total number of diameter inches of the improperly pruned tree(s). Any trees removed in violation with these regulations will be replaced in compliance with this section. Site maintenance shall not alter screening or barrier below the intended requirements of these regulations.

c. Appearance and Maintenance. Also see Part II (Code of Ordinances), Chapter 15, Article IX, Section 15-120 for minimum standards regarding general appearance and maintenance of landscaping on public and private property.

14. Cross-Visibility and Safe-Sight. The purpose of this subparagraph is to promote the creative and efficient design of landscaped areas within off-street parking areas and other vehicular use areas, or near rights-of-way. The intent is to create functional and quality pervious surfaces for drainage / storm water management, in conjunction with increasing the visual enhancement of off-street parking areas. Landscape design shall provide safe and unobstructed views for pedestrians and motorists moving throughout the project:

a. Visibility at Corners of Rights-of-Way. Landscape material, within a triangular-shaped area of property formed by the intersection of two (2) rights-of-way, shall maintain unobstructed cross-visibility at a level

between 30 inches and eight (8) feet above the pavement to avoid traffic hazards pursuant to Chapter 4, Article VIII, Section 3.C.4.u. Canopy or palm trees shall not have limbs and / or foliage that extend into this cross-visibility area. Landscape material, except low growing shrubs, shall be located at least three (3) feet from the edge of a sidewalk. The size of this triangular-shaped area shall be designed in accordance with the Engineering Design Handbook and Construction Standards.

b. Driveway Openings along Rights-of-Way. Landscaping on both sides of each project entrance along rights-of-way shall contain a signature tree in accordance with Section 4.A.3.a.(1) above and a minimum of two (2) colorful and / or flowering shrub species (3 different species if sufficient space is available). Design emphasis shall be placed on clear understory and low-growing or dwarf varieties of landscape material with a maximum height of 30 inches, in order to comply with visual obstruction regulations (see Engineering Design Handbook and Construction Standards and Chapter 4, Article VIII, Section 3.C.4.u.). The plant material required in this subparagraph may also count towards meeting the minimum requirements for landscape strips abutting rights-of-way (see Section 4.B.2 and Section 4.C.2 below).

c. Driveway Openings (and Cross-Access) Between Properties. Landscaping on each side of a driveway opening that connects abutting properties shall be designed with an emphasis on clear understory with low-growing or dwarf varieties of plant material. All plant material proposed shall maintain unobstructed cross-visibility at a level between 30 inches and eight (8) feet above pavement. Canopy or palm trees shall be trimmed up eight (8) feet so that limbs and / or foliage does not create a traffic hazard.

15. Raised Planters. Raised planters shall be allowed, contingent upon the following:

a. A minimum setback of three (3) feet is required from all property lines;

b. No planter shall exceed a maximum height of six (6) feet.

c. All planters shall contain clean fill.

d. Planters shall be located to comply with Cross-Visibility and Safe Sight regulations of Section 3.A.14 above.

16. Maximum Height of Hedges. The maximum height of hedges shall be eight (8) feet above finished grade, except as described below:

a. Multi-Family and Townhouse Developments. Hedges shall be a maximum of six (6) feet in height when located within landscape strips abutting rights-of-way for all developments that have less than 400 feet of frontage on typical City streets. However, the maximum height of hedges (located within the landscape strip abutting rights-of-way) may be increased to eight (8) feet when in compliance with the following:

(1) The street frontage of the development is at least 400 feet in length;

(2) The development has no more than one (1) parking lot driveway opening or access point along said street frontage;

(3) The placement of the hedge shall not cause any traffic line-of-sight obstruction and must comply with the visibility requirements of Chapter 4, Article VIII, Section 3.C.4.u, "Visual Obstructions of Intersections".

b. Miscellaneous. Where adjacent to golf courses, golf driving ranges, Interstate 95, railroad rights-of-way, along property lines where residential abuts commercial or industrial uses, and along property lines where residential abuts parks (public or private): 10 feet, other than within the front yard setback.

17. Soils. Existing horticulturally suitable topsoil shall be stockpiled to be equal to two times (2x) the amount or top soil needed for that particular site, and re-spread during final site grading. Any new soil required shall be similar to the existing soil in pH, texture, permeability, and other characteristic, unless convincing evidence is provided that a different type of soil amendment is justified. 4. The use of solid waste compost as a soil amendment is encouraged where it is appropriate. ~~Crime~~

~~Prevention Through Environmental Design (CPTED). See Chapter 4, Article III, Section 5.B for additional regulations regarding landscaping and CPTED guidelines.~~

18. Pesticides. When using pesticides, all label instructions of Federal and State law must be adhered to.

19. Crime Prevention Through Environmental Design (CPTED). See Chapter 4, Article III, Section 5.B for additional regulations regarding landscaping and CPTED guidelines.

EXHIBIT "C" – THE NINE FLORIDA-FRIENDLY PRINCIPLES

1. **Right Tree / Right Place.** Almost any plant will survive in your landscape if you plant it in the right place. You can drastically reduce the need for water, fertilizer, pesticides and pruning if you follow these tips:

- Make a note of the type of soil, sunlight exposure and water conditions of the planting site before you shop. Choose plants that thrive under the conditions you noted.
- Limit the number of plants that need a lot of water or care.
- Keep only as much grass as you directly use for recreation and other purposes. Plant beds and mulched areas use less water than grass.
- Remove invasive exotic plants so they don't steal water and nutrition from your desired plants.

2. **Water Efficiently.** Typically, up to 50% of water used by households is used outdoors. Efficient watering will not only help you save money and conserve water, but can also create a healthier landscape. Follow these tips to save water and money:

- Grass doesn't need as much water in the cooler months of December, January and February. In fact, 1/2" to 3/4" of water every 10-14 days is enough.
- During the summer months of July, August and September, yards need only about 3/4" of water every 3 to 5 days. This region will usually get that from rainfall, so you can turn off your irrigation system for extended periods of time.
- Water your lawn and plants only when you know they need it or show signs of stress.
- Use a rain gauge or moisture sensor so you will know if rainfall has done the job.
- Install a drip or micro-spray system in your plant beds. They use water more efficiently than traditional spray heads.
- Install an automatic rain shutoff device to stop watering when it's rained enough.
- Stop overwatering! Overwatered grass has short roots that make it harder to survive pest attacks, disease and drought.

- Collect water in a rain barrel to use to water your plants.

3. **Fertilize Appropriately.** When too much fertilizer is applied to landscapes, it seeps past the root zone of the grass, plants or trees and into the aquifer or runs off into water bodies. Plants, animals and people depend on clean water for survival. Follow these tips to help prevent water pollution:

- Fertilize lawns, trees and plants only to maintain health. Don't exceed recommended amounts. Fertilizer will not help poor growth caused by too much shade, disease or pests.

- Use slow-release fertilizers that make nutrients available to plants for a longer time. They are kinder to the environment and are usually more cost-effective.

- Use iron instead of nitrogen if you want to green-up your lawn.

- Hold off on fertilizing if a heavy rain is expected, and don't overirrigate after applying.

- Follow the application directions on the fertilizer package.

- Avoid weed and feed products.

4. **Mulch.** Who likes to weed? Keeping mulch on your plant beds helps control weeds, retain soil moisture and reduce erosion and stormwater runoff. Follow these tips when mulching:

- Cut down on mowing by replacing grass with mulch in areas that are shaded or difficult to mow.

- Keep the level of mulch up to 2–3 inches by applying it once or twice a year.

- Keep mulch 2 inches from the base of plants to avoid disease.

- Let fallen tree leaves stay under a tree to create self-mulching areas.

- Look for cypress mulch that is not harvested from Florida's wetlands.

- Choose recycled mulch or alternatives like melaleuca, leaves, pine needles or bark.

5. **Attract Wildlife.** Friendly visitors, like butterflies and beneficial insects, will enjoy your landscape if you provide food, water and cover. Attract wildlife by following these tips:

- Plant vines, shrubs and trees to create cover, nesting areas and food.

- Provide a water source such as a birdbath or a small pond.
- Provide wildlife shelters such as a bat house, birdhouse, or brush pile.
- Protect the health of wildlife visitors. Limit pesticide use by spot-treating only the areas that need attention.
- Consider including native plants in your landscape. They are the natural food, shelter and nesting plants of our local wildlife.

6. **Manage Yard Pests Responsibly.** When it comes to pest management, nature takes care of itself! Misused pesticides in your yard can run off into waterways and harm beneficial insects. Follow these tips when managing yard pests:

- Learn to identify beneficial insects and let them do the work for you.
- Be tolerant! Low levels of pests will do minimal damage.
- Check plants regularly and prune off a plant's infected areas or pick off insects when possible.
- Use pesticides only to spot-treat affected plants and lawn areas. Avoid blanket applications.
- Choose the least-toxic pesticides such as horticultural oils, insecticidal soaps and Bacillus thuringiensis (BT).
- Read and follow pesticide labels carefully for safe use and disposal.

7. **Recycle.** Recycling your yard waste back onto your lawn and landscape can improve the fertility and water-holding ability of the soil and help aerate soil that has become compacted.

- There's no need to bag or rake lawn clippings. Leave grass clippings on the lawn to recycle nitrogen.
- Use fallen leaves and pine needles as mulch under trees and shrubs.
- Create and maintain a compost pile with yard waste and kitchen scraps (no animal products). Compost is a great natural fertilizer and mulch.

8. **Prevent Stormwater Runoff.** Stormwater runoff can carry pollutants, pesticides and excess fertilizers into bays, rivers, lakes and groundwater. Remember that what goes in your storm drain can find its way into our water sources. Follow these tips to help reduce stormwater runoff from your yard:

- Direct downspouts and gutters onto your lawn and plant beds, or into rain barrels, cisterns or containment areas.

- Use mulch, bricks, gravel or other porous surfaces for walkways, patios and driveways.

- Sweep grass clippings, fertilizer and soil onto the lawn so they don't get washed into storm drains.

- Clean up oil spills and leaks on the driveway. Use cat litter to absorb oil.

- Pick up pet waste to help reduce bacterial and nutrient pollution.

- Remove trash from street gutters before it gets washed into storm drains.

- Use swales (low areas) to hold and filter water.

9. **Protect the Waterfront.** Bays and waterways contribute to the quality of life in Florida. Waterfront owners can help protect these fragile natural treasures by following these tips:

- Never prune mangroves or remove any vegetation without first seeking proper permits and guidelines.

- Establish a maintenance-free zone of at least 10 feet between your landscape and a water body.

- Remove invasive exotic aquatic plants by cutting, pulling or raking.

- Plant a buffer zone of low-maintenance plants between your lawn and shoreline to absorb nutrients and to provide wildlife habitat.

Attachment 5

City of Boynton Beach

Proactive Inspection Program

Third Term, Year 1 Report

March 2012

Section III.A.7.c – Illicit Discharges and Improper Disposal – Inspection and Investigation of Suspected Illicit Discharges and/or Improper Disposal

This permit element requires a written **proactive inspection program** for identifying and eliminating sources of illicit discharges, illicit connection or illegal dumping, to your MS4.

- You must inspect portions of your MS4 that have a reasonable potential of containing illicit discharges/connections/dumping. The FDEP has indicated that this should be considered to be the commercial and industrial zoned areas/properties within your MS4 contributing area.
- FDEP allows these inspections to be combined with other inspection programs, but the inspections must include specific inspection for potential stormwater contamination.

Proactive Inspections Written Program Components

1. Procedure and Criteria for identifying priority areas/facilities
2. List of identified priority areas/facilities
3. Annual schedule for inspections
4. Procedure for conducting site inspections (include checking for MSGP)
5. Procedure for tracing source of discovered or suspected illicit discharge
6. Procedure for eliminating the discharge
7. Procedure for documenting the inspections and enforcement activities (See form)
8. Procedures for enforcement actions (or referrals to appropriate jurisdictional authority)
9. Identification of staff /department/outside entity responsible for inspections and for enforcement
10. Description of resources allocated to implement this permit element

Proactive Inspection Program (Written Procedures)

1. **Procedure and Criteria for identifying priority areas/facilities**

   According to the MS4 NPDES permit, priority areas for inspection should include:

   - Areas with older infrastructure
   - Industrial, commercial, or mixed use areas
   - Areas with history of past illicit discharges and/or illegal dumping
   - Areas with on-site sewage disposal systems
   - Areas upstream of sensitive or impaired water bodies

   The attached map depicts the extent of our MS4 contributing area; areas zoned as industrial, commercial or mixed use; areas with on-site septic systems; and, currently identified impaired water body segments. Facilities that have been identified as the source of illicit discharges in the past are also noted on the map. "Older infrastructure" is not indicative of an increased potential to contain incidences of illicit discharges/connections/dumping.

2. **List of identified priority areas/facilities**

   A list of the priority proactive inspection area/facilities are maintained by the Stormwater Division and Environmental Inspector.

3. **Annual schedule for inspections**

   All areas/facilities will be inspected at least once within the current permit term. If a facility or area is discovered to have illicit discharges/connections/dumping, it will be placed on the schedule for re-inspection the following year. The schedule for inspecting the priority areas/facilities is:

4. **Procedure for conducting site inspections (include checking for MSGP)**

   Priority Facility inspections: For proactive facility inspections, the trained inspector conducts an unannounced visit to the facility. A standardized inspection form is used (see attached).

   Priority Area inspections: For general areas that have been designated to have a reasonable potential of containing illicit discharges/connections/dumping, a drive-

around procedure is followed. The trained inspector(s) patrols the prioritized area searching for indications of illicit discharges/connections/dumping. If any are identified, the inspector either stops to do a Facility Inspection, a reactive investigation, or completes a work order form for the appropriate personnel to complete the investigation.

5. **Procedure for documenting the inspections and enforcement activities**
   Refer to the attached Proactive Illicit Discharge/Illegal Connection Inspection Form, Illicit Discharge Hotline Incident Tracking Sheet, and Wastewater Spillage Report forms.

6. **Procedures for tracing the source of the discovered illicit discharge, eliminating the discharge, and enforcement actions (or referrals to appropriate jurisdictional authority)**
   Refer to the attached City of Boynton Beach Wastewater Conveyance System Spill Response Plan. This plan will be reviewed annually and will be updated to respond to threats to illicit discharges within the MS4.

Proactive Illicit Discharge/Illegal Connection Inspection Form

Date of Inspection: _____

Address of Facility OR General Description of Area Inspected: _____

Identification of MS4 component that could receive discharge from this site/area: _____

If Facility inspection, does type of business require an MSGP? Yes___ No___

If yes, does this facility have one? Yes___ No___

Findings:

Evidence of illicit connections to storm sewer? Yes___ No___

Evidence of dumping/spills to storm sewer? Yes___ No___

Evidence of wash water going to storm sewer? Yes___ No___

Storage tanks leaking or improperly contained? Yes___ No___

Stockpiles/debris piles uncontained? Yes___ No___

If "yes," to any above, describe:

_____

_____

_____

_____

_____

_____

Type of Enforcement Action Taken: _____

Date to verify elimination: _____

Date of Referral to FDEP of facility that may require MSGP: _____

Illicit Discharge Hotline Incident Tracking Sheet

Incident ID:

Responder Information	
Call taken by:	Call date:
Call time:	Precipitation (inches) in past 24-48 hrs:
Reporter Information	
Incident time:	Incident date:
Caller contact information (*optional*):	

Incident Location *(complete one or more below)*

Latitude and longitude:			
Stream address or outfall #:			
Closest street address:			
Nearby landmark:			
Primary Location Description	**Secondary Location Description:**		
☐ Stream corridor *(In or adjacent to stream)*	☐ Outfall	☐ In-stream flow	☐ Along banks
☐ Upland area *(Land not adjacent to stream)*	☐ Near storm drain	☐ Near other water source (storm water pond, wetland, etc.):	
Narrative description of location:			

Upland Problem Indicator Description

☐ Dumping	☐ Oil/solvents/chemicals	☐ Sewage
☐ Wash water, suds, etc.	☐ Other: _____	

Stream Corridor Problem Indicator Description

Odor	☐ None	☐ Sewage	☐ Rancid/Sour	☐ Petroleum (gas)
	☐ Sulfide (rotten eggs); natural gas	☐ Other: Describe in "Narrative" section		
Appearance	☐ "Normal"	☐ Oil sheen	☐ Cloudy	☐ Suds
	☐ Other: Describe in "Narrative" section			
Floatables	☐ None:	☐ Sewage (toilet paper, etc)	☐ Algae	☐ Dead fish
	☐ Other: Describe in "Narrative" section			
Narrative description of problem indicators:				
Suspected Violator (name, personal or vehicle description, license plate #, etc.):				

Investigation Notes	
Initial investigation date:	Investigators:
☐ No investigation made	Reason:
☐ Referred to different department/agency:	Department/Agency:
☐ Investigated: No action necessary	
☐ Investigated: Requires action	Description of actions:
Hours between call and investigation:	Hours to close incident:
Date case closed:	
Notes:	

FLORIDA DEPARTMENT OF HEALTH

Charlie Crist
Governor

Ana M. Viamonte Ros, M.D., M.P.H.
State Surgeon General

WASTEWATER SPILLAGE REPORT

PALM BEACH COUNTY HEALTH DEPARTMENT

PHONE #561-233-5497/837-5900Fax#561-233-5296/837-5293

CONTACT: Dave Hebert, Antoine Devonshire, or Darrel Graziani

Offhours, weekends, holidays-561-582-5666(dispatcher A.G.Holley)

Utility: _____Contact person: _____

Phone #: _____

Date and time of Incident: _____

Description of Incident: _____

_____

Cause of Incident: _____

_____

Location of Incident (directions)_____

Estimated amount of spillage: _____

(Attach a separate sheet explaining how you arrived at this amount)

Estimated affected area: _____

Corrective Action: _____

_____

Bodies of water effected: _____**Sampling Required**

STORM DRAINS effected: _____

Signs/Notification Action: _____

Clean Up: _____

Disinfected With: _____

Back to Normal: _____**Date:** _____**Time:** _____

Comments: _____

_____

_____

The Health Department and Department of Environmental Protection (DEP # (561) 681-6600, Fax 681-6760) must be notified for any amount of spillage and this report faxed. Spills greater than 1,000 gallons or any discharge to surface waters must also be called to the State Warning Point at **1-800-320-0519**

_____

_____

_____

_____

City of Boynton Beach
Wastewater Conveyance System
Spill Response Plan

Prepared For:

The City of Boynton Beach

By:

Globaltech

October 2006

Amendments

Approved amendments or additions to this Spill Response Plan are listed below and included in Appendix H. Suggestions for amendments shall be submitted in writing to:

Michael Low
Deputy Utilities Director
124 E. Woolbright Road
Boynton Beach, FL 33435
561-742-6400, Fax 561-742-6298

Approved amendments for this Spill Response Plan are listed in the following table:

Version	Amendment	Date	Signature	Date Received

Abbreviations

City	City of Boynton Beach
COE	United States Army Corps of Engineers
DOH	Florida Department of Health
FDEP	Florida Department of Environment Protection
LWDD	Lake Worth Drainage District
PBCHD	Palm Beach County Health Department
PBCERM	Palm Beach County Environmental Resource Management
PBCWUD	Palm Beach County Water Utilities Department
SCRWWTP	South Central Regional Wastewater Treatment and Disposal Plant
SFWMD	South Florida Water Management District
SRP	Spill Response Plan
SRT	Spill Response Team
SWA	Palm Beach County Solid Waste Authority
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant

Table of Contents

Appendices

Section 1. Introduction

The City of Boynton Beach has prepared this Wastewater Conveyance System Spill Response Plan (SRP) in compliance with the Florida Department of Environmental Protection Consent Order No. OGC 04-1904, issued May 16, 2006.

This SRP shall be reviewed yearly and updated as necessary. The Wastewater Supervisor is responsible for maintaining and updating this SRP. Updates can be made through amendments approved by the Wastewater Supervisor.

Section 2. Plan Purpose

The purpose of this SRP is to outline the arrangements for responding to wastewater spills within the City's conveyance system, with the goal of protecting public health and the environment from a wastewater spill, or where this is not possible, to minimize its effects.

Section 3. Scope of Plan

This SRP coordinates the City's resources for responding to wastewater spills within their conveyance system and identifies other governmental and industry entities to potentially contact for assistance during a wastewater spill.

This SRP references and complements other City emergency response documents. This SRP does not deal with other emergency response incidents such as hurricanes, natural disasters, acts of terrorism, or other natural or man-made emergency conditions. The City's emergency response and hurricane preparedness documents should be utilized if these events occur.

Section 4. Geographical Area

The geographical area covered by this SRP includes all of the City of Boynton Beach, proper, as well as the area bounded by the limits of the City's wastewater conveyance system service area, including all of the surface water bodies contained within or that may be impacted by a spill from the City's conveyance system. These include City, County, LWDD, COE, and SFWMD jurisdictional water bodies. A map of the area covered under this SRP is shown in Figure 1.

The LWDD water bodies include all of the canals designated with either an "E" or an "L", which are west of I-95 and the Boynton Canal (C-16) West of the E-4 Canal. The Boynton Canal (C-16) east of the E-4 Canal is the responsibility of the SFWMD. The PBCERM has jurisdiction over the Lake Worth Lagoon and the Intracoastal Waterway. The COE and the SFWMD also have jurisdiction over the Intracoastal Waterway and the Lake Worth Lagoon, however the COE does not have any coordination requirements for spill responses.

Figure 1 - map

Section 5. Preparedness

5.1 Regulatory Requirements

According to F.A.C. 62-604.550(2), the City shall report to FDEP (and to PBCHD) all unauthorized spills of wastewater to surface or ground waters from its collection/transmission system as described below:

F.A.C. 62-604.550(2)(a) states the unauthorized releases or spills in excess of 1,000 gallons, per incident, or other abnormal events where information indicates that public health or the environment will be endangered, shall be reported orally to the STATE WARNING POINT (800)320-0519, as soon as practical, but no later than 24 hours from the time that City becomes aware of the circumstances. The State Warning Point will then contact the appropriate regulatory agencies. The City shall provide the following information to the State Warning Point:

1. Name, address, and telephone number of person reporting.
2. Name, address, and telephone number of the City's responsible person for the discharge.
3. Date and time of the discharge and status (ongoing or ceased).
4. Characteristics of the wastewater released (untreated or treated, industrial or domestic).
5. Estimated amount of discharge.
6. Location or address of discharge.
7. Source and cause of the discharge.
8. Whether the discharge was contained on-site, and cleanup actions taken to date.
9. Description of area affected by the discharge, including name of water body affected, if any.
10. Other persons or agencies contacted.

Oral notification shall be followed by a written submission within five days of the time that the City becomes aware of the circumstances. The written notification shall include the following information:

1. A description of the spill, release, or abnormal event and its cause.
2. The duration including exact dates and time.
3. If the condition has not been corrected, the anticipated time it is expected to continue.
4. Steps taken or planned to reduce, eliminate, and prevent a recurrence.

The Florida Department of Health (DOH) has prepared a form to submit this information to FDEP through the PBCHD. A copy of this form is included in Appendix A.

Note that per F.A.C. 62-604.550(2)(b), written notification is not required for spills 1,000 gallons or less. FDEP may also waive the written submission if the oral report is provided within 24 hours from the time the City becomes aware of the circumstances and the release,

spill, or abnormal event has been corrected and did not endanger health or the environment, 62-604.550(2)(c). However, per PBCHD requirements and City policy, a written submission to FDEP and the PBCHD will be required regardless of spill size.

While The State Warning Point will contact the appropriate regulatory agencies, the City may also need to contact the agencies directly to expedite the response. The pertinent regulatory agency contacts are listed below:

Table 5.1
Regulatory Contact Numbers

Agency	Name	Cell	Office	Email
FDEP	Fax Spill Notification Memo to 561-681-6760			
LWDD	Mike Baker	561-358-3556	561-737-3835	MikeBaker@LWDD.net
LWDD	Bill Winters	561-281-3923	561-737-3835	BillWinters@LWDD.net
PBCERM	Brian Gentry		561-233-2400	
PBCHD	Umesh Asrani Dave Hebert Michael Hambor		561-355-3070 (After Hours) 561-582-5666	
PBCHD	Fax Spill Notification Memo to 561-804-9738			
SFWMD	Jeff Smith (24 hour)		561-682-2516 561-682-6116	

FDEP is not a first responder; however, FDEP, as well as the PBCHD, must be notified of any spill, as described below.

5.2 Response Policy

The primary goals of a wastewater spill response are to:

1. Protect human health and safety.
2. Minimize environmental impacts.
3. Restore the environment, as near as is practicable, to pre-spill conditions.
4. Repair the cause of the spill and return to normal operations.
5. Take actions to prevent future spills.

5.3 Levels of Response

Depending on the severity of the spill, different response levels will be employed. By categorizing the response level of the spill, appropriate resources can be mobilized to respond to the spill. For major spills the State Warning Point must be notified within 24 hours by phone. FDEP and PBCHD must be notified orally within 24 hours and in writing within 5 days for all spills.

5.3.1 Small Spill

A small spill is defined as a spill under 500 gallons that can be contained within the boundaries of the lift station site or at the site of the pipeline or manhole incident and can be handled by City resources. The services of Coast to Coast, a private contractor the City utilizes to assist in cleanup of backups inside residences, may be required. A small spill incident may require the assistance of Coast to Coast if a backup into a house occurs. PBCHD and FDEP must be notified in the event of any spill. The Supervisor is responsible for response to this category of spill. Depending on the severity of the spill the Supervisor may need to conduct a site visit.

5.3.2 Medium Spill

A spill over 500 gallons or a spill that can not be contained within the boundaries of the lift station site or at the site of the pipeline or manhole incident, or a spill that requires outside assistance to respond to. Middle Management is responsible for response to this category of spill and must conduct a site visit. PBCHD and FDEP must be notified in the event of any spill.

5.3.3 Major Spill

A spill over 1,000 gallons or any spill that threatens to enter a canal and/or lake or any spill that poses a serious impact to public health or safety or the environment, should be considered a major spill. State Warning Point must be notified. Senior Management is responsible for response to a major spill and must conduct a site visit. PBCHD and FDEP must be notified in the event of any spill.

5.4 Responsibilities

Depending on the quantity and severity of the spill, different levels of the City's Utility Department management may be responsible for decision-making. The City's Spill Response Organizational Chart is shown in Figure 2. Supervisory duties for the decision-maker include response, containment, repairs, sign posting and public notification, cleanup and disposal. The Duty Person will initially perform an assessment of the spill severity. As a spill incident progresses, updated assessments may need to be performed by the decision-maker. The Wastewater Supervisor is always responsible for the State Warning Point notification as well as the written notice to PBCHD and FDEP.

5.4.1 Senior Management

The Deputy Utilities Director for Utilities Operations and Maintenance is responsible for high-level decision-making. In his absence, the Deputy Utilities Director for Engineering will step in. For particularly severe spills, the Director of Utilities may also be responsible for decision-making. Senior Management is responsible for involving the Risk Management and Public Relations departments and contacting the media, if necessary. Senior Management is the decision-maker for responses to major spills.

ORG CHART

5.4.2 Middle Management

The Field Operations Manager is the decision-maker for a response to a medium spill. In his absence the Senior Management will assume responsibility.

5.4.3 Supervisor

The Wastewater Supervisor and the Assistant Supervisors (Collection and Pump Stations) are responsible for initially evaluating all spills, determining the severity of the spill, assigning response staff, and informing the senior management. The Supervisor is the decision maker for small spills. For very small spills, the Duty Person may be the decision maker but they will inform the Supervisor of the situation. The Wastewater Supervisor is responsible for notifying the State Warning Point within 24 hours of any major spill, and also the PBCHD and FDEP of any spill, orally within 24 hours and in writing within 5 days of the incident.

5.4.4 Operations Staff

The Operations Staff are responsible for undertaking on-site cleanup operations and operating spill response equipment. The Operations Staff are typically the first responders and may begin assembling response resources before the Supervisors arrive onsite. The Operations Staff positions are shown in Figure 2, the Spill Response Organizational Chart.

5.5 Training and Updates

The City conducts **yearly** training programs and exercises for staff likely to be involved in a response to a wastewater spill. These training programs and exercises are designed to enable the City to have sufficient numbers of trained personnel to mount an effective response to a wastewater spill incident. The City has also begun cross training with other City divisions, such as water system staff.

Appendix B contains copies of the sign-in sheets identifying staff that have received training for wastewater spill response.

Depending on the particular incident, responding crews may also need to have completed Personnel Protective Equipment and/or Confined Space training programs.

5.6 Equipment and Supplies

The City maintains an inventory of equipment and supplies for responding to wastewater spills. The inventory is located at the East Water Treatment Plant. A table of the current inventory is included in Appendix C.

The list will be updated monthly as supplies are used and replaced. The Field Operations Manager is responsible for maintaining and updating the inventory.

Fecal coliform testing is performed at the City's laboratory.

5.7 External Resources

At times, the spill response may require the assistance of other governmental agencies or private contractors. The following paragraphs describe their roles in assisting the City.

5.7.1 Governmental Agencies

5.7.1.1 Florida Warn

The City belongs to Florida Warn, a statewide organization administered by FDEP, which provides a system for utilities to assist other utilities during emergencies, hurricanes in particular. The Florida Warn website is www.flawarn.org. The pertinent emergency contact numbers for the Southeast District, to which the City of Boynton Beach belongs, are listed below.

Table 5.2
Florida Warn Contact List
Southeast District

Program	Name	Cell	Office	Email
Main Office			561-681-6600	
Director	Kevin Neal	561-722-0759	561-681-6661	Kevin.Neal@dep.state.fl.us
Asst. Director	Timothy Rach	561-352-5406	561-681-6774	Timothy.Rach@dep.state.fl.us
Emergency Response		954-958-5575	800-320-0519	
Water	Linda Horne	561-719-6006	561-681-6696	Linda.Horne@dep.state.fl.us

5.7.1.2 Neighboring Utilities

The City's service area is bordered by the City Delray Beach to the south, the City of Lantana to the north, the Palm Beach County system to the west and the City of Ocean Ridge to the east. The City does not have any wastewater interconnects with the neighboring utilities. Ocean Ridge does not have a wastewater utility. The other utilities have been contacted to evaluate installation of an interconnect.

Except for LS 316, the City does not have any large lift stations, force mains or gravity mains near the northern, southern and western extremities of their system. The Palm Beach County Water Utilities Department (PBCWUD) does not have any facilities east of the LWDD E-3 Canal. The closest PBCWUD facilities to LS 316 are small residential gravity lines and a small lift station. The PBCWUD facilities are too far away and too small to serve as a viable interconnect for the LS 316 system. Likewise neither Delray Beach nor Lantana have any close facilities of appropriate size to function as an interconnect. Therefore there are no viable locations for an interconnect with a neighboring utility.

The City is currently developing a Mutual Aid Agreement with the City of Delray Beach. The Mutual Aid Agreement will formally allow the two cities to enlist the aid of each other when an emergency, such as spill, occurs.

Emergency Contacts for the neighboring utilities are listed below in Table 5.3

Table 5.3
Neighboring Utilities Contact List

Utility	Name	Cell	Office
Delray Beach	Victor Majtenyi		561-243-7336
Lantana	Jerry Darr		561-540-5750
PBCWUD	Larry Johnson	561-301-9708	561-493-6090

5.7.1.3 Private Contractor and Vendor Agreements

City has a current agreement with Godwin Pump to provide bypass-pumping equipment for large spills that exceed the City's equipment. A copy of the agreement is included in Appendix D.

The City has historically utilized several different contractors to assist during spill responses. If a spill occurs in a house the services of a cleanup contractor, Coast to Coast, is enlisted. Copies of the contractor agreements are included in Appendix D, (if available). Contact information for the spill response contractors is listed below in Table 5.4

Table 5.4
Spill Response Contractors

Company	Specialty	Name	Cell	Office
Coast to Coast	Cleanup	Bill Mirisola	561-704-7887	561-704-7887
Godwin Pump	Pumping Equip.	Kevin Abernathy	813-363-5962	813-740-0331
Chaz Equipment	Contractor*	Gary Czajkowski	561-718-9455	561-333-2109
Trio	Mech. Contractor	Larry Shortz	954-444-5399	954-971-2288
Madsen/Barr	Contractor*	John Barr	954-401-6758	954-561-0942
Johnson-Davis	Contractor*	Bobby Hooks	561-722-9820	561-588-1170
W Jackson & Sons	Contractor*		954-973-3405	954-973-3060
Ferguson Underground	Parts/Supplies	Jason Mueller	954-325-1591	954-973-8100
Sunbelt Rentals	Rental Equip.	Deanna Fernandez	561-662-4057	561-682-9888
NationsRent	Rental Equip.	Drew Schneider	561-718-9608	561-586-7878

* Utilities Contractor

5.8 Public Notification

The City shall maintain a minimum of 50 signs and 1,000 door hangars in inventory. The notification materials shall be large enough to easily read, printed in waterproof ink, and include languages common in the City. The signs are stored at the warehouse at the East WTP and the door hangars are stored at the laboratory at the West WTP. The laboratory staff is responsible for hanging the door hangars. Copies of the City's notification materials are included in Appendix E.

Section 6. Response

6.1 General Measures

In the event of a wastewater spill the following general measures should be employed according to the circumstances of the spill and conditions prevailing:

1. If possible stop the outflow or release of the wastewater from the source.
2. If the flow cannot be stopped, then control the wastewater spill, containing it to an area that minimizes potential threats to human health or the environment.
3. If surface water bodies are threatened, determine sensitive areas and begin response.
4. If surface water bodies are affected contain the spread of the wastewater spill to as small an area as possible.
5. If the wastewater spill occurs during a hurricane or other disaster, response may need to be reduced or delayed until the area is secure and safe for City staff to respond.

A typical spill response strategy is shown in Figure 3.

6.2 Protection Priorities

There are no drinking water sources that can be affected by a wastewater spill in Boynton Beach. There are several recreational water bodies that could be affected. The Boynton Canal (C-16) feeds into the E-4 Canal which is connected to Lake Ida and Lake Osborne, both of which are recreational water bodies. There are also several smaller recreational lakes on the E-4 canal. The C-16 also discharges to the Lake Worth Lagoon/Intracoastal Waterway, which are recreational water bodies. The Lake Worth Lagoon has also been identified as an important estuarine ecosystem, which is protected by the Lake Worth Lagoon Management Plan. As such, it receives a higher priority for protection from the City against wastewater spills.

While not specifically identified, any canal may be in use as a recreational water body or irrigation source. Therefore wastewater spills should not be allowed to enter a surface water body, unless all other options are unavailable.

Protection priorities to be employed during a response to a wastewater spill are, in order of descending priority:

1. Human health and safety.
2. Lake Worth Lagoon.
3. Intracoastal Waterway.
4. E-4 Canal and C-16 (Boynton Canal East of Military Trail control structure.
5. Other LWDD Canals
6. Other surface water bodies.
7. Habitat and cultural resources.

Strategy Chart

8. Rare and/or endangered plants and animals.
9. Plants and animals.
10. Commercial resources.
11. Aesthetics.

However, in assessing protection priorities, it is necessary to maintain a balanced view of the potential success of particular response strategies.

6.3 Spill Response Standard Procedures

6.3.1 Discovery

Typically, the City's utility staff is notified of a spill by either the City's staff, the SCADA system, or a telephone call from the public. The City maintains a 24-hour emergency telephone line at 561-742-6430. During normal business hours the Utilities Department man these lines. After hours the calls are forwarded to the West WTP, which is manned 24 hours a day.

6.3.2 Assessment

After receiving the call, the Utilities Department will call out a Duty Person to visit and evaluate the situation. The Duty Person is listed on the Duty Roster, a copy of which is located at both call locations. The Duty Person will then go out to the site to investigate. If the Duty Person determines that a spill has occurred they then notify either the Pump Station or the Collection System Assistant Supervisor, depending on cause of the leak. The Assistant Supervisors then make the decision how to address the situation. The Duty Person may also make recommendations to best respond to the spill and may begin implementation of the response prior to the Assistant Supervisor arriving on site.

6.3.3 Response

If the Assistant Supervisor determines that the spill may be over 500 gallons or that public health or the environment may be impacted they then contact the following personnel, in order of priority,

- Wastewater Supervisor
- Field Operations Manager
- Deputy Director, Utilities Operation and Maintenance

When notified of the spill, one of the personnel listed above must go to the site to evaluate the situation. In the meantime, the Assistant Supervisor assembles a Spill Response Team (SRT). In addition to Senior and Middle Management, the SRT could include one or more of the following personnel, depending on the Assistant Supervisor's assessment of the situation:

- Utility Locator

- Pipe TV Crew
- Equipment Operators
- Heavy Equipment Operators
- Pipe Crew
- Mechanic Crew
- Welder
- Electrician Crew
- Laboratory Technicians

The Assistant Supervisor will also decide whether external resources need to be utilized.

The SRT will quickly evaluate whether the cause of the spill can be quickly repaired and, if so, make the repair. If the cause of the spill cannot be repaired then the SRT will determine whether the incoming flow can be re-routed around the problem or stored within the gravity system and wet wells.

If possible, the spill should be controlled, contained or diverted to minimize health and safety concerns and impact to the environment. The spilled wastewater should then be pumped into the nearest appropriately sized manhole or lift station that is operational. The City's vacuum trucks can also be used to transfer the wastewater. In the event there are no operational manholes or lift stations nearby, the wastewater may need to be transferred to a neighboring utility, the SCRWWTP, or another WWTP.

Cleanup shall begin as soon as possible. Personnel protective gear shall be worn by all persons in the spill area.

If a water body has been affected, fecal coliform samples shall be taken by the City's Laboratory Technicians.

6.3.4 Spill Containment

Utility locations should be contacted at Sunshine State One Call (800-432-4770) before any excavation is performed. Sunshine State One Call places emergency calls to the front of their priority queue. Sunshine State One Call mans their telephones from 7:00 a.m. to 5:00 p.m. In the event excavations must be performed prior to Sunshine State One Call marking the utilities, City staff should review the City's utility maps and excavate carefully.

Every spill will be unique and will have its own set of procedures to best address the problem. It will be necessary for qualified City staff to evaluate each situation and decide which method to contain a spill is appropriate. Potential containment methods are listed below:

- Contain the spill in lift stations, manholes and gravity lines
    - Contain the spill at the spill location
    - Block storm drains

- Construct a berm (earthen or other materials)
- Excavate a trench

- Control the spill to an impoundment area
  - Block storm drains and/or storm overflow weirs
  - Divert the flow to the least sensitive location
    - Water retention area without a storm drain
    - Water retention area with a blockable storm drain
    - Swales
    - Public property
    - Streets
    - Private property
  - Use natural grades
  - Construct a berm (earthen or other materials)
  - Excavate a trench

If the spill reaches a surface water body, the following procedures can be used to contain the spill to the smallest area and minimize damage to the environment:

- Construct a dam (earthen or inflatable dam) to block canal and contain spill in a section of the canal
- Raise canal control structures to minimize flow into and out of canal

In particular, if the spill reaches the C-16 Canal West of the Lawrence Road control structure

- Raise the control structure to minimize flow out of the canal

In particular, if the spill reaches the C-16 Canal east of the Lawrence Road control structure, E-4 Canal, Lake Worth Lagoon, or the Intracoastal Waterway

- City does not currently have any options to contain a spill in these water bodies once released.

There are few options to contain a wastewater spill once it reaches a large body of water. Because sewage dilutes across the depth of the water, floating booms will have limited value. Generally after a spill in such a water body, remediation actions are just to wait until the sewage has been diluted or metabolized and fecal coliform concentrations return to normal levels. The Boynton Inlet is nearby, which will help to dissipate the spill.

6.3.5 Regulator Notification

The Wastewater Supervisor is responsible for informing PBCHD **and** FDEP orally within 24 hours and in writing within 5 days. The Wastewater Supervisor is also responsible for contacting the State Warning Point (800) 320-0519, if the spill exceeds 1,000 gallons or impacts the public health or the environment (major spill). All telephone calls should be documented. Copies of successful fax confirmations should be retained in the City's records.

6.3.6 Sign Posting and Public Notification

For spills on land, isolate the affected area using temporary fencing, warning tape, or other means. Notify property owners directly impacted by the spill.

For spills that reach a surface water body, the City will place warning signs adjacent to the water body along the full extent of the area affected by the spill at distances that can easily be seen by anyone approaching the water body from any direction. In addition, door hangars shall be placed on all buildings bordering the affected water body.

The media may need to be contacted if a spill of over 1,000 gallons reaches the C-16 east of Military Trail, the E-4, the Lake Worth Lagoon, or the Intracoastal Waterway, or if other conditions warrant it. The Deputy Director of Utilities Operation and Maintenance will coordinate with the City's Public Relations Department and the PBCHD for media notification.

Health warnings shall remain posted until the PBCHD authorizes their removal.

For spills that represent a significant public health threat in terms of volume and location the City may need to contact the Police and Fire Departments, for traffic and or crowd control.

All media questions should be deferred to the City's Public Relations Department.

6.3.7 Cleanup

Wastewater released into the environment should be collected as best as possible, using hand tools, equipment, machinery and vacuum trucks.

Cleanup crews should wear appropriate protective gear such as rubber boots, rubber gloves, Tyvek suits or work clothes, face guards and eye protection during cleanup operations. Respiratory protection may also be required. Depending on the situation, cleanup crews should have also completed Personnel Protective Equipment and/or Confined Space training programs

Small spills can be cleaned with absorbents, brooms, rakes and buckets. Larger spills may require vacuum trucks and construction equipment.

For spills on land, hydrated lime, dry HTH (calcium hypochlorite), or a biocide can be applied to the affected area. Follow the directions on the biocide label. If lime is used, it should be applied until the pH of the affected area reaches 12 or higher. For spills on impervious surfaces or equipment, chlorine bleach may also be used. **Do not mix HTH or chlorine bleach with any other cleaning compound.**

If a canal has been **completely** blocked as part of the spill response, biocide may be added to the contained section of the canal (after the contained section has been pumped down as low

as possible). The canal shall not be reopened until the biocide has been neutralized and the canal water is safe to plants and animals. **Biocide shall not be applied to any canal without specific permission from the LWDD. Biocide shall not be applied to the C-16 or E-4 Canals, the Lake Worth Lagoon or the Intracoastal Waterway under any circumstances.**

Biocide shall not be used in uncontained surface waters. Biocides kill all microorganisms and must be used carefully. Follow the manufacturers for storage, use, and disposal.

Floating debris should be removed as best as possible from surface waters that have been contaminated with wastewater, however there are few viable options available to cleanup uncontained water bodies. Warning signs should be placed around the affected water body and door hangars should be hung. The City shall contact PBCHD regarding public notification of closing of the water body to the public.

Public access shall be restricted until the cleanup has been completed.

After use, the protective gear should be washed, sanitized or disposed of on site. Staff should wash with soap and water immediately after their spill responses duties are finished. Eating, drinking or smoking is not permitted in the spill area. If necessary, staff will wash hands with soap and water and exit the spill area prior to eating, drinking, or smoking.

6.3.8 Disposal

Small amounts of contaminated soils can be neutralized and spread out on the site, if it is acceptable aesthetically. The public should be kept out of the area until the raw solids have broken down and odors have been reduced. Contaminated soils can also be returned to the City's storage locations. Contaminated soils should not be stored within a well field zone of influence until the raw solids have fully broken down and the odors eliminated.

Raw solids can also be returned to the City's conveyance system if they are relatively clear of sand and debris.

Absorbent exposed to the wastewater, bagged raw solids, and contaminated soils can be disposed of in the Solid Waste Authority (SWA) Landfill located on 45th Street in West Palm Beach. The SWA classifies these wastes as Special Waste.

Wastewater should be returned to the City's conveyance system to the closest manhole or lift station of appropriate size. If the City's system is not available, The City may need to truck wastewater to a neighboring utility's conveyance system, the SCRWWTP, or another WWTP.

Section 7. Recommendations for Further Evaluations

During the preparation of this SRP, several items were identified as potential improvements to reduce future spills. As these ideas are conceptual, the City will need to evaluate their potential benefits and costs. These ideas are listed here for further evaluation. If implemented, these improvements shall be integrated into this SRP during the yearly update.

1. The City has several vulnerable sections of their conveyance system. In particular, the LS 356 force main and the force main that's feeds the SCRWWTP could pose difficult response scenarios. The City should evaluate additional force mains and interconnects within the City's conveyance system to provide backup options in the event of a major force main break.

2. The City should develop formal agreements with spill response contractors to reduce potential costs.

3. The City should collect background fecal coliform levels from several water bodies now and develop a program to collect new samples at least yearly. In the event of a spill these background levels can be used as a baseline.

4. Evaluate water inflatable dams to use for blocking canals. These dams will make for a cleaner response and can be reused.

Attachment 6

City of Boynton Beach
Construction Site Inspection Plan and Inspection Form

Third Term, Year 1 Report
March 2012

Construction site inspections are conducted for land-disturbing projects which have the potential to discharge stormwater runoff into our MS4.

Timing

Construction site inspections are conducted:

- Before the start of construction, after the placement of temporary BMPs
- During construction (one or more inspections, based on the project's potential for discharge to our MS4)
- At the end of the construction

Site Priority

All construction sites are considered priority if they have the potential to discharge into water bodies or our MS4. Sites will be inspected with a frequency deemed appropriate during the site plan review process and with consideration to rainfall events. In addition, any sites where compliance is a concern, will be inspected more frequently.

Inspection Procedure

Inspections are the responsibility of the Utilities Department and are conducted using the attached construction site inspection form. The intent of the inspection is to verify that BMPs are performing and to document the inspections. All completed inspection forms are kept in the project file.

Enforcement

Instances of non-compliance will be handled with successively more rigorous enforcement measures.

1. Notice of Violation
2. Stop work order

The construction site inspector will issue notices of violation or stop work orders as deemed necessary.

City of Boynton Beach
Utilities Department
Construction Site
Stormwater Inspection Report

Project Name: _____
Permit or CIP # _____
Location: _____
Property Owner: _____

Project Start Date_____
Contractor: _____
Site Representative: _____
Telephone: _____

		Yes	No	NA
1	Erosion and turbidity controls properly installed and maintained?			
2	Disturbed areas properly stabilized?			
3	Offsite areas adjacent to disturbed areas protected?			
4	Receiving waters protected with turbidity barrier and other means as needed?			
5	Offsite soil tracking prevented and roadway cleaned?			
6	Stormwater inlets adequately protected from sediment?			
7	Soil stockpiles adequately contained / stabilized?			
8	Erosion problems addressed as they arise?			
9	Trash / Hazardous / Toxic materials contained and protected from stormwater?			
10	Site subject to NPDES permit ≥ acre disturbed?			
11	Stormwater Pollution Prevention Plan (SWPPP) on site?			
12	Erosion and Sediment Control Plans on site? (if not part of the SWPPP).			
13	Notice of Intent (NOI) and required permits on site?			
14	Violation found? If yes, Check action taken below: ☐ NOV ☐ Notified Contractor ☐ Stop Work ☐ Referred to PBCDPEP ☐ Other			

List Receiving Water Bodies: _____
_____

Overall Status: _____
_____
_____

Comments: _____
_____
_____

CHAPTER 5 – EROSION AND SEDIMENT CONTROL

Erosion is the process by which the land surface is worn away by the action of water and wind. Flowing water can create small channels and eventually larger channels, and washouts around pipe end walls and structures. Wind erosion can cause health and safety problems and is a source of fugitive dust.

Sedimentation occurs when the eroded soil particles from the land surface are deposited at a new location. When erodible material enters a stormwater conveyance system, capacity is reduced. When it enters a body of water, it is considered a pollutant. Turbidity occurs when eroded soil is suspended in the water. Turbid water can stress or kill fish by clogging their gills and making it hard for them to see food sources.

A critical time when erosion can occur is when land is cleared of vegetation and graded. The removal of natural vegetation and topsoil renders the exposed area particularly susceptible to erosion, causing transformation of existing drainage areas and disturbance of sensitive areas. Erosion control is the process of minimizing the amount of soil that runs off during the construction process, and sediment control is the process of retaining eroded soil on site, and preventing damage to water bodies and infrastructure.

Effective and practical measures should be used to minimize erosion potential and prevent sediments from leaving the site and reaching the stormwater system and water bodies. Erosion and sediment control practices that can typically be used are; 1) Temporary gravel construction entrance, 2) Construction road stabilization, 3) Silt fence, 4) Storm drain inlet protection, 5) Temporary diversion dike, 6) Temporary sediment trap, 7) Outlet protection, 8) Rip rap, 9) Check dams, 10) Temporary seeding, 11) Permanent seeding, 12) Sodding, and 13) Dust control.

5.01 Temporary Gravel Construction Entrance

Construction entrances provide an area where mud can be removed from construction vehicle tires before they enter a public road. A stone stabilized pad should be located at points of vehicular ingress and egress.

The pad is to be constructed of 1.5 inch to 3.5 inch stone to a thickness of at least 6 inches. It must extend the full width of the vehicular ingress and egress area. The length of the entrance should be at least 50 feet.

If conditions on the site are such that the majority of the mud is not removed from the vehicles traveling over the gravel, then the tires of the vehicles must be

washed. Wash water should be carried away from the entrance to a settling area to remove the sediment.

The entrance shall be maintained in a condition that will prevent tracking or flow of mud onto public roads. This may require periodic top dressing with stone, as conditions demand.

5.02 Construction Road Stabilization

Areas which are graded for construction traffic are especially susceptible to erosion. The exposed soil surface is continually disturbed. Such areas also tend to collect and transport runoff water along their surfaces. Temporary stabilization will reduce erosion.

Roads shall follow the natural terrain as much as possible. Slopes should not exceed 10 percent. All cuts and fills shall have side slopes no greater than 3 horizontal to 1 vertical. Place a 6 inch course of FDOT No. 1 aggregate to a width of at least 14 feet for one-way traffic and 20 feet for two-way traffic. Top dress periodically with new gravel.

5.03 Silt Fence

A silt fence is a temporary sediment barrier constructed of posts and filter fabric. It is placed across or at the toe of a slope or in a minor drainage way to intercept and detain sediment and decrease flow velocities from drainage areas of limited size. Under no circumstances shall silt fences be constructed in live streams or in swales or ditches where flows exceed 1 cubic foot per second.

Filter fabric shall be a pervious sheet of propylene, nylon, polyester or ethylene yarn containing ultraviolet ray inhibitors. The height of the silt fence shall be between 15 and 18 inches. Posts shall be hard wood, spaced a maximum of 6 feet apart, and driven securely into the ground (minimum of 12 inches). Trench fabric into the ground a minimum of 8 inches. Cant silt fence towards the flow. Splice filter fabric together only at a post. Silt fences can be removed after they have served their purpose, but not before the upslope area has been permanently stabilized.

Inspect silt fences immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs shall be made immediately. Remove sediment when deposits reach one-half the height of the barrier.

5.04 Storm Drain Inlet Protection

Inlet protection prevents sediment from entering storm drainage systems prior to permanent stabilization of the disturbed area. It prevents excessive distribution of sediment and it decreases the probability of reducing their capacity.

For protection of curb inlets, place drainfield pipe in front of the opening and anchor using sand bags. Drainfield pipe consists of perforated drain pipe with a filter fabric sock. For protection of other inlets, install a silt fence around the inlet or place sod to form a turf mat covering the soil for a distance of 4 feet from each side of the inlet structure.

These inlet protection devices are for areas of less than one acre. Areas larger than one acre should be routed through a temporary sediment trap.

Inlet protection should be inspected after each rain and repairs made as needed. Remove sediment when it has accumulated to ½ the design depth of the protection device. The inlet protection can be removed when the drainage area has been properly stabilized.

5.05 Temporary Diversion Dike

A diversion dike is a ridge of compacted soil located at the top or base of a sloping disturbed area. It diverts storm runoff from unprotected slopes to sediment trapping facilities.

The dike should be at least 18 inches in height with a top width of at least 24 inches and a minimum base width of 4.5 feet. Side slopes are to be 3 horizontal to 1 vertical or flatter. The channel behind the dike shall have a positive grade to a stabilized outlet. If the channel slope is less than or equal to 2 percent, stabilization is usually not required. If the slope is greater than 2 percent, the channel should be stabilized. If the dike is going to remain in place for more than 30 days, temporary or permanent vegetation should be established. The maximum allowable drainage area should be 5 acres.

The diversion dike should be inspected and repaired after each rainfall. It should also be inspected and repaired once every week, whether a storm has occurred or not. Damage caused by construction traffic must be repaired before the end of each working day.

5.06 Temporary Sediment Trap

A sediment trap is a ponding area formed by excavation and/or an embankment across a drainageway to detain sediment laden runoff. The detainment is long enough to allow the majority of the sediment to settle out. It is usually installed in a drainageway, at a storm drain inlet or at other points of discharge from a disturbed area. The contributing drainage area should be no more than 5 acres. The sediment trap should have an initial storage volume of 67 cubic yards per acre of drainage area. The outlet should be constructed and maintained so that sediment does not leave the trap and that erosion of the outlet does not occur.

Sediment shall be removed and the trap restored to it's original dimensions when the sediment has accumulated to ½ the design volume of the trap. The structure should be checked regularly to insure that it is structurally sound. The structure should be removed and the area stabilized when the upslope drainage area has been stabilized.

5.07 Outlet Protection

Outlet protection consists of rock rip rap placed below storm drain outlets to reduce erosion at the outlet and to reduce flow velocities before storm water enters the receiving channel below the outlet. Protection is constructed at zero grade for a distance related to the outlet flow rate and the tailwater level. Line apron area with filter fabric before placement of rip rap. The criteria for designing outlet protection is as follows:

1. Thickness to be 1.5 times the maximum rock diameter but not less than 6 inches.

2. The width should extend across the channel bottom and up the channel banks to an elevation 1 foot above the maximum tailwater elevation.

   If the pipe discharges onto a flat area with no defined channel, the upstream width shall be at least 3 times the diameter of the outlet pipe. The downstream end for a minimum tailwater condition (tailwater depth is less than half the diameter of the outlet pipe) shall have a width equal to the pipe diameter plus the length of the apron. For a maximum tailwater condition (tailwater depth greater than half the diameter of the pipe) the downstream end shall have a width equal to the pipe diameter plus 0.4 times the length of the apron.

3. Side slopes shall not be steeper than 2 horizontal to 1 vertical in a well defined channel.

4. There are to be no bends in the horizontal alignment.

5. The apron length shall be at least 4.5 times the diameter of the outfall pipe.

6. Thirty percent of the rock rip rap shall be larger than 6 inches in diameter.

5.08 Rip Rap

Rip rap is a permanent, erosion resistant ground cover of large, loose, angular rock underlain with filter fabric installed whenever soil conditions, water turbulence and velocity are such that soil may erode under design flow conditions. Rip rap may be used at storm drain outlets, to line channels, at roadside ditches, and at drop structures.

Rip rap that contains a mixture of stones that vary in size from small to large is preferred. The size of the stone is determined according to the tailwater condition mentioned in paragraph 5.07.

The thickness of the rip rap layer shall be 1.5 times the maximum stone diameter but not less than 6 inches. The stone should be angular, have a specific gravity of at least 2.5, and not disintegrate on exposure to water and weathering.

When lining a channel bend, rip rap shall extend across the bottom and up both sides, and extend upstream from the point of curvature and downstream from the point of tangency a distance of at least 5 times the channel bottom width.

Where rip rap is used only for bank protection and does not extend across the bottom of the channel, the rip rap shall be keyed into the bottom of the channel to a minimum depth equal to the thickness of the blanket.

Filter fabric is to be placed between the rip rap and the underlying soil surface to prevent movement of soil into or through the rip rap.

Once rip rap installation has been completed, it should require very little maintenance. It should, however, be inspected periodically to determine if high flows have caused scour beneath the rip rap or dislodged any of the stone. If repairs are needed they should be accomplished immediately.

5.09 Check Dams

Check dams are constructed of stone across a swale or drainage ditch to reduce the velocity of concentrated stormwater flows, thereby reducing erosion. It also

helps trap small amounts of sediment. This practice is limited to use in small open channels which drain less than 10 acres.

The maximum height of a check dam should be 2 feet. The center should be at least 6 inches lower than the outer edges. The maximum spacing between the dams should be such that the toe of the upstream dam is at the same elevation as the top of the downstream dam. Check dams should be constructed of FDOT No. 1 aggregate (2-3 inch stone).

Check dams should be checked for sediment accumulation after each significant rainfall. Sediment should be removed from behind the check dams when it has accumulated to one half of the original height of the dam. Regular inspections should be made to insure that the center of the dam is lower than the edges. Erosion caused by high flows around the edges of the dam should be corrected immediately.

Check dams must be removed when their useful life has been completed. The area beneath the check dams should be seeded and mulched or sodded (depending on velocity) immediately after they are removed.

5.10 Temporary Seeding

Establishing temporary vegetative cover by seeding will reduce erosion and sedimentation by stabilizing disturbed areas that will not be brought to final grade for a year or less. It will reduce problems associated with mud and dust production from bare soil surfaces during construction.

Use mulch to reduce damage from water runoff or wind erosion, and to improve moisture conditions for seedlings.

5.11 Permanent Seeding

Establish permanent seeding to reduce erosion and sedimentation in areas that can be final graded.

5.12 Sodding

Sodding establishes permanent turf immediately, prevents erosion and damage from sediment and runoff, reduces the production of dust and mud, and stabilizes drainageways where concentrated overland flow will occur.

On slopes greater than 3 horizontal and 1 vertical, sod shall be laid with staggered joints and secured by pegging. Install sod with the length perpendicular to the slope.

5.13 Dust Control

Dust control reduces surface and air movement of dust from exposed soil surfaces and reduces the presence of airborne substances which may be harmful or injurious to human health, welfare, or safety, or to animal or plant life.

The less soil exposed at any one time, the less potential there will be for dust generation. Phasing the work and utilizing temporary stabilization practices upon the completion of grading can significantly reduce dust emissions.

Sprinkling the exposed areas with water until the surface is wet and repeating as needed is the most economical and efficient way to control dust.