



*Protecting Southwest Florida's unique natural environment and quality of life ... now and forever.*

August 31, 2018

City of Naples Streets & Stormwater Department  
Gregg Strakaluse, Director  
295 Riverside Circle  
Naples, FL 34102

Re: Naples Stormwater Master Plan Update

Dear Mr. Strakaluse:

The Conservancy of Southwest Florida, on behalf of our more than 7,000 supporting member families, appreciates the City of Naples' efforts to improve stormwater management and enhance water quality. We are concerned with both maintaining and restoring the health of our region's waters. As such, the Conservancy has been closely following the reports and presentations pertaining to the Stormwater Master Plan Update, as well as conducting our own research and analysis with the assistance of Eric Livingston of Watershed Management Services, LLC.

We understand that staff is making clarifications or additions on several areas we made comments on within the SWMP. We look forward to resolution on these matters and we will update our comments accordingly before the Council meeting on the 5<sup>th</sup> of September.

Overall, we applaud the City's dedication to protecting our water resources through more stringent stormwater standards, particularly the goal of an 85% pollutant load reduction for both phosphorus and nitrogen. We would like to point out that although we are thrilled the City has set protective standards and goals for pollutant load reduction in Policy 1-11 of the Public Facilities and Water Resources Element of the Comprehensive Plan, the Stormwater Master Plan refers several times to South Florida Water Management District (SFWMD) permitting criteria, Best Management Practices (BMPs), and treatment volumes. Since 2007 it has been widely understood that the current Environmental Resource Permit (ERP) BMP design criteria do not achieve the minimum level of treatment set in 62-40.432, F.A.C., and do not assure that discharges will not cause or contribute to violations of water quality standards. Therefore, the Conservancy suggests that, in order to meet this 85% pollutant load reduction target, the City must adopt a significant incentive-based system for entities that implement BMP's, Low Impact Development (LID) design standards or other stormwater management practices. In addition,



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enforceable requirements for stormwater systems utilizing the BMPTrains approach will need to be developed to meet the 85% treatment performance standard.

Additionally, if the City wants to promote the use of LID BMPs to get to an 85% treatment level, it needs to develop and adopt a BMP Manual that achieves that level of treatment. The current Water Management District ERP Applicant Handbooks do not include design criteria for LID BMPs. The recently adopted Pinellas County BMP Manual includes these design criteria and should be used as a reference by the City. The BMPTRAINS model can be used to calculate the expected load reduction from a BMP or series of BMPs, including LID BMPs, to ensure the 85% reduction is met.

The draft Stormwater Master Plan currently lacks a reference to the Net Improvement performance standard for projects that will ultimately discharge to impaired waters. Section 373.414(1)(b)3, F.S., establishes the concept of net environmental improvement for discharges to a water body that is not meeting its applicable water quality standards. In such cases, the post-development pollutant loading must not exceed the pre-development pollutant loading for the pollutant of concern. Unfortunately, the Net Improvement stormwater treatment performance standard is not being enforced by FDEP or the WMDs leading to the discharge of additional pollutant loading to impaired waters. Typically the discharge is into a permitted MS4, such as the City of Naples, meaning the City and its taxpayers will be responsible for reducing this additional pollutant loading when a TMDL is adopted. It is for this reason that the City needs to carefully review and approve the stormwater treatment plans for any new development. This is especially true for those projects that “self-permit” themselves using the 10/2 stormwater general permit.

In reference to our January 9th, 2018 meeting, we strongly support an additional 50% volumetric treatment capacity for all stormwater systems that discharge within city limits. As discussed in this meeting, all waterbodies in the area are important, and we should take proactive measures to help protect local waterbodies from new or continued impairment. The Conservancy supports revising the Land Development Code to reflect the additional requirement of 50% volumetric treatment capacity for all new development or redevelopment stormwater systems, as one of the strategies to assist in meeting the 85% pollutant reduction goal.

The Conservancy understands that the Stormwater Master Plan provides the framework for the City’s stormwater management and provides goals the City hopes to achieve; however, it is necessary to also provide direct linkages to regulatory code. The Conservancy supports regulatory changes, to either the LDC or Comprehensive Plan, which will allow for the implementation of all aspects of the Stormwater Master Plan.

Our original comments were made while reviewing the 60% Stormwater Master Plan Update document. We have made comments on specific chapters and subsections from the 100% Stormwater Master Plan Update below. Many of our comments were not directly addressed, so many of the below comments are the same as our previous letter, with any additions noted in red.

## Chapter 5

### 5.1.2.1 Description of City of Naples's Stormwater System

In response to the first paragraph, we suggest the terminology for retention basins should be changed. The city has 28 stormwater detention ponds, not retention basins. Retention basins reduce flooding by reducing stormwater volume through infiltration, evaporation, and evapotranspiration. Additionally, these are permitted stormwater systems, not “lakes” which are defined by Florida statute and rule as public water bodies that are subject to water quality standards. Calling stormwater detention ponds “lakes” creates certain expectations among the public and can lead to confusion about the purpose and management of the stormwater systems. It appears that even the City Commissioners are confused on this issue since the basin assessments included several recommendations to improve “lake” water quality in some wet detention systems. This confusion means money is being spent in the wrong place – within a wet detention system instead of implementing BMPs within the watershed to reduce stormwater pollutant loading into the wet detention system.

With respect to the city's “demonstration rain gardens”, it is important to know if they have been designed as “retention” or “detention” rain gardens. This is a very important difference with respect to the amount of stormwater treatment they obtain and to the actual mechanisms that are reducing pollutants. In “retention” rain gardens, treatment is via stormwater volume reduction whereas in “detention” rain gardens” the treatment is via engineered filter media (biosorption activated media). Before building more rain gardens there needs to be monitoring of the demonstration rain gardens to document stormwater pollutant load reduction and fine tune the design criteria. Additionally, given the differences in soil types and SHWT elevations in the City of Naples, design criteria and monitoring are needed for both “retention” and “detention” rain gardens. For more information on Rain Garden Design Criteria, please see the Pinellas County Stormwater Management Manual, the Alachua County Stormwater Treatment Manual, or the Escambia County Low Impact Design BMP Manual.

### Section 5.2.2 Gulf of Mexico

Has the ECE 30% Design Technical Report (2016) been completed? If so, what BMPs are being implemented and what level of pollutant load reduction will be achieved?

### Section 5.2.4, Gordon River

This section notes that FDEP has adopted a TMDL with required TN reductions and states “however this TMDL does not have an associated Basin Management Action Plan. Please note that pursuant to Section 403.067, F.S., the preparation and adoption of a BMAP is optional. However, meeting the load reductions is not optional with requirements established and enforced through permits. Part V of the current, but out of date, Phase II MS4 Generic Permit requires a permittee to “Stormwater management programs must be assessed and adjusted, as part of an iterative process, to maximize their efficiency and make reasonable further progress toward an ultimate goal of reducing the discharge of pollutants to the extent necessary to protect the designated uses of receiving waters.” Furthermore, with respect to TMDLs it states: “If a TMDL is approved for any water body into which the Phase II MS4 discharges, and the

TMDL includes requirements for control of stormwater discharges, the operator must review its stormwater management program for consistency with the TMDL allocation. If the Phase II MS4 is not meeting its TMDL allocation, the operator must modify its stormwater management program to comply with the provisions of the TMDL Implementation Plan applicable to the operator in accordance with the schedule in the Implementation Plan.”

#### 5.2.5 Upland Surface Water

This section should be deleted since none of the listed “surface waters” are actually surface waters. Instead, they are all components of the City’s permitted MS4. Of course, if the City wants to consider them water bodies, then a petition can be submitted to DEP to have them removed from the MS4 at which time they become “surface waters” and are subject to water quality standards.

The discussion of stormwater BMPs should be moved to the BMP section of the plan.

### 5.3 Regulatory Standards Affecting the Stormwater Management Plan

Figure 5-2 Regulation Implementation Chart – This chart needs to be modified to correct typos (“so that these do not exceed WQS”. Also, since you discussed them, need to add “Reasonable Assurance Plans” and “Regulatory Programs and Permits” as an implementation pathway since the development and adoption of BMAPs is optional under state law.

#### 5.3.1 Water Quality Standard 62-302 F.A.C.

We suggest revising the first sentence to read: “Florida’s surface water quality standards system, first adopted in March 1979 and subsequently revised, are published in 62-302 F.A.C (and 62-302.530 F.A.C.), are designed to protect human and ecosystem health and to enhance the quality of waters according to their intended use and value.

The current section entitled “Proposed Revisions to Chapter 62-302, FAC” has not been revised and is still out of date.

#### 5.3.2 Impaired Waters Rule 62-303 F.A.C.

Suggested revision for the second sentence in the subsection entitled “How is the IWR Implemented”: “Once a water body is classified as impaired, FDEP must develop and adopt a Total Maximum Daily Load (TMDL) that establishes a pollutant loading cap and equitably allocates pollutant load reductions to discharges.” **Since the consultants have not revised this inaccuracy, perhaps they can provide the legal citation in the Clean Water Act that requires a “plan to restore their water quality.”**

**The final paragraph in Section 5.3.2 needs to be revised to read: “Finally, none of these WBIDs are impaired for nutrients when assessed using the recently adopted Numeric Nutrient Criteria.”**

#### 5.3.3 TMDLs, Reasonable Assurance Plans, and Basin Management Action Plans

We recommend the first sentence be revised to read: “The Total Maximum Daily Load (TMDL) program was established in 1972 through Section 303(d) of the federal Clean Water Act (CWA).

Within Florida, the program is implemented pursuant to the Florida Watershed Restoration Act, Section 403.067, F.S., as discussed in Section 5.3.2.”

Please modify 6 of the Basic Steps of the TMDL Program to include: Measure the effectiveness of TMDL implementation activities by documenting pollutant load reductions and monitoring the water body to determine if water quality is improving.

In addition, the next paragraph can be revised to read: “The City of Naples is part of the Group 1 Basin, Everglades West Coast Planning Unit in the South District. FDEP has not developed and adopted TMDLs for all listed impaired waters in City of Naples. In September 2015, FDEP submitted its TMDL Priority Framework to EPA. This framework requires FDEP to establish a schedule for developing and adopting TMDLs for water bodies on the Verified List of Impaired Waters. The current schedule does not include the development of TMDLs for impaired water bodies in the City of Naples. These include the Gordon River Marine Segment which is impaired for iron and copper, and the Naples Bay Coastal area impaired for iron, copper, and mercury.”

Since this was not done, then this sentence needs to be corrected to acknowledge that DEP implemented the Watershed Approach process in 2000 and it is now in its fourth cycle around the state.

Recommend deletion of the final paragraph as the changes in WBIDs already has been discussed.

#### 5.3.3.2 Basin Management Action Plans (BMAPs)

Recommend revising the first paragraph to read: “Section 403.067(7), F.S., sets forth the legal framework for implementing TMDLs within Florida. FDEP may develop and adopt a Basin Management Action Plan 403.067(7)(a) or use existing regulatory and other management programs specified in 403.067(7)(b) to implement a TMDL. BMAPs establish a five-year blueprint by specifying projects, programs, or other activities that will be undertaken to reduce pollutant loadings of the causative pollutant(s). FDEP and the affected stakeholders collaborate to develop BMAPs or other implementation approaches. An impaired water body with an adopted TMDL may have more than one BMAP if the water body is impaired for multiple pollutants.”

Recommend the following revision to the last sentence: “Progress assessments of adopted BMAPs are conducted every five years and the BMAP is revised to set forth the projects, programs, and other activities that will be implemented during the next five years to continue progress in reducing pollutant loadings to achieve the TMDL. In addition, annual reports are completed to document interim progress towards meeting the associated TMDL and BMAP goals.”

#### 5.3.4 NPDES Program

We recommend the following revision to paragraph 1: “The National Pollutant Discharge Elimination System (NPDES) was developed by the U.S. Environmental Protection Agency (EPA), as part of the Clean Water Act of 1972. The 1987 Clean Water Act Amendments established the NPDES stormwater permitting program which was developed in two phases. Phase I was implemented in 1990, and addresses requirements for municipal storm sewer systems (MS4s)

for large municipalities (population  $\geq 100,000$ ) and other industrial activities that disturbs  $>5$  acres of land. Phase II was promulgated in 1999, and addresses additional sources, including MS4s not regulated under Phase I, and small construction activities disturbing between 1 and 5 acres of land.”

#### 5.3.6 City’s Stormwater Management Regulation Program

This section needs to include the specific local regulatory authority and actions that the City takes to regulate stormwater. Two general vision statements do not constitute a Stormwater Management Regulation Program. We suggest discussing City Comprehensive Plan and Land Development Code (LDC) requirements including the requirements of Ordinance 07-1807 along with the role of the 2007 Naples Stormwater Standards Handbook. There is also a need to identify and discuss any impediments to using LID BMPs that exist within the City’s Comprehensive Plan and LDC.

Given that the above comments were not incorporated, perhaps the document can at least describe how the City reviews and approves stormwater plans and permits, especially for projects that are “self-permitted” via the 10/2 General Permit. Since so many of the 10/2 GPs ignore the “Net Improvement” requirement for projects within the watersheds of impaired WBIDs, the City needs to understand that its taxpayers, not the developers, will be liable for reducing these additional pollutant loadings.

#### 5.4 Evaluation of the City’s Water Quality Monitoring Program

We recommend the following revision in the first sentence under Water Quality Sampling: “According to the Florida Department of Environmental Protection (DEP), the number one source of pollutant loading to Florida’s surface waters in Florida is stormwater runoff, and the City’s stormwater system conveys runoff laden with pollution to natural water bodies.”

##### 5.4.1 Urban Stormwater Runoff

In this section, please clarify that the 28 “stormwater lakes” are actually wet detention ponds that are not waters of the state. We recommend conducting stormwater loading monitoring to document the pollutant loads discharged to downstream receiving waters in addition to periodic water column sampling.

##### 5.4.3 Recommendations for Improvement of the Water Quality and Biological Monitoring Programs

What is the purpose of monitoring wet detention systems? It is certainly not to determine their “ambient water quality” since they are stormwater systems with highly variable inputs and flows. If this monitoring is continued it needs to be redesigned to determine the load reduction effectiveness of the wet detention systems and to quantify the loadings discharged to downstream water bodies.

#### 5.5 Analytical Water Quality Modeling Results

The EMCs listed in Table 5-9 need to be updated with the current State of Florida EMCs. These can be obtained from the BMPTRAINS software available on the UCF Stormwater Management

Academy web site. The values for TSS are meaningless since there are no WQS established for the parameter.

The BMP load reduction values also need to be revised to reflect the most current information in the BMPTRAINS software. In addition, the table values need to be explained that they are not absolute. The actual load reduction effectiveness of stormwater BMP is directly related to the design of the BMP. For retention BMPs (including swales), the load reduction is directly proportional to the annual stormwater volume that is retained and not discharged. For wet detention systems, the load reduction is directly related to residence time. The same site-specificity is especially true for the volume reductions listed in the table. Few dry detention systems obtain 80% volume reduction nor do filter marshes. Using load reduction data from a single project or paper is not scientifically valid.

Please explain the difference in wet detention systems removal rates that are found in Table 5-10.

Finally, the modeling of loadings and BMP load reductions must be based on design information and not generalized.

## Chapter 6

### Section 6.2 Water Quality LOS

Please rename this section Stormwater Quality LOS as it is NOT a Water Quality LOS

The first sentence is inaccurate and needs to be revised to read: “Water quality standards are set and achieved in a variety of ways including the implementation of stormwater BMPs, TMDLs, BMAPs, and permits”

Please modify sentence 3 to read: Stormwater treatment standards are largely implemented through Best Management Practices (BMPs) such as dry detention basins, wet detention systems, or roadside swales to name a few.

Please keep in mind that wet retention and dry detention are not effective BMPs for stormwater treatment.

Please clarify why the following sentence is included. What is its intended purpose? “Furthermore, if activities or developments are determined to be increasing pollutant loading to an impaired waterbody, then water quality mitigation is required and implemented (SFWMD 2016).” Is the purpose to highlight the legal requirement to meet the “Net Improvement” performance standard for new projects discharging to impaired water bodies? If not, please explain since neither DEP nor a WMD has ever required an existing system to be upgraded solely for water quality purposes.

Section 373.414(1)(b)3. F.S., establishes the concept of net environmental improvement for discharges to a water body that is not meeting its applicable water quality standards. In such cases, the post-development pollutant loading must not exceed the pre-development pollutant loading for the pollutant of concern. Unfortunately, the Net Improvement stormwater

treatment performance standard is not being enforced by FDEP or the WMDs leading to the discharge of additional pollutant loading to impaired waters. Typically the discharge is into a permitted MS4, such as the City of Naples, meaning the City and its taxpayers will be responsible for reducing this additional pollutant loading when a TMDL is adopted. It is for this reason that the City needs to carefully review and approve the stormwater treatment plans for any new development. This is especially true for those projects that “self-permit” themselves using the 10/2 stormwater general permit.

Section 6.2.1 Existing Requirements for Pollution Abatement

With respect to Stormwater Quality Level of Service, the section needs to be revised to clarify that it is a Stormwater LOS, not a Water Quality LOS.

Please correct the last sentence in 6.2.1.1 to read: Please see Table 6.4 for a summary of current TMDL and BMAP information.

The City’s current Stormwater Quality Level of Service is set forth in Policy 1-11 of the Public Facilities and Water Resources Element of the Comprehensive Plan. It seems to require a minimum of 85% average annual pollutant load reduction for stormwater systems. However, it also refers to SFWMD permitting criteria, BMPs, and treatment volumes. We commend the City for requiring the 85% treatment performance standard. However, if the City is relying on SFWMD BMP design criteria and permits, then the 85% treatment standard is not being met. Since 2007 it has been widely known that the current ERP BMP design criteria do not achieve the 80% minimum level of treatment set in 62-40.432, F.A.C., and do not assure that discharges will not cause or contribute to violations of WQS. Furthermore, there is no reference to the Net Improvement performance standard for projects that will ultimately discharge to impaired waters.

In conclusion, the Stormwater Quality LOS in the Comprehensive Plan and this SWMP are not being achieved. There is an internal conflict between the City’s requirement for at least 85% load reduction and the SFWMD design criteria that do not achieve this level of stormwater treatment.

6.2.1.2 New Construction Standards

The first sentence needs revising since it is discussing BMP design criteria or BMP performance standards, not water quality standards. Again, the City’s LOS of 85% treatment is in direct conflict with the statements concerning use of SFWMD ERP requirements. Rather than repeating SFWMD ERP BMP design criteria, this section should discuss the actual level of treatment that the SFWMD systems are obtaining. For example, wet detention systems are the most widely used BMPs in the City of Naples yet they only get 35% TN load reduction and 60%TP load reduction. SFWMD dry detention systems get virtually no reduction in stormwater pollutant concentrations with the load reduction associated only with the volume of stormwater that is infiltrated and not discharged. Even the SFWMD retention BMP design criteria do not achieve 80% average annual load reduction.



### 6.2.1.3 Retrofit Standards

We appreciate including this discussion of retrofitting in the SWMP. However, there is no regulatory mechanism to require existing stormwater systems to be retrofitted to improve stormwater treatment. Most retrofit projects are implemented by government entities using a combination of funding sources such as DEP or WMD grants. Perhaps the City can help prioritize these retrofits by working with the HOAs to get buy-in and matching funds that can be used to seek grant funds to help pay for them.

### 6.3. Recommended Approach to Address LOS for Stormwater Quantity and Quality

First, this section should be retitled as above. It is not a discussion of “water” but “stormwater” LOS.

Table 6-5 TMDL Summary Table should be moved to the TMDL section in 5.3.3.1.

## **Chapter 7**

Given the City’s desire to improve stormwater treatment and to promote using LID BMPs, the review of the Comprehensive Plan and LDC should include identifying current impediments to using LID BMPs and recommending revisions that promote and incentivize using LID BMPs as part of a stormwater BMP treatment train.

With respect to the Recommendations in Table 7-1, we offer the following comments:

- Recommendation #3, Section 16-115 –Add 3 BMP Selection Tables from Policy 1-11 to end of section.
  - Tables are proposed for deletion from Policy 1-11 and they are out of date.
- Recommendation #4. Utilize Low-Impact Development (LID) approach to stormwater management by capturing and retaining the Design Storm (as defined under Technical Criteria (A)) on-site. Alternatives (e.g., capture/retain 95th percentile average annual rainfall event) and fees-in-lieu option should be addressed where required volume creates a hardship or is technically infeasible.
  - The design storm concept is for flood control, not for stormwater treatment. If the City wants to promote the use of LID BMPs to get 85% treatment, it needs to develop and adopt a BMP Manual that achieves that level of treatment. The current WMD ERP Applicant Handbooks do not include design criteria for LID BMPs. The recently adopted Pinellas County BMP Manual includes them. The BMPTRAINS model can be used to calculate the expected load reduction from a BMP or series of BMPs, including LID BMPs, to ensure the 85% reduction is met.

- Recommendation #5 Section 16-291: Consider requiring or incentivizing final grading/drainage plan that retains design storm surface water in excess of pre-construction discharge amount.
  - Is “preconstruction discharge amount” referring to the preconstruction average annual stormwater volume? If so, use that term to provide clarity.
- Recommendation #6, Article VI: Add definition for new term - Best Management Practice (BMP) Selection Criteria and Credits. BMP incentive plan described in Policy 1-11 of the Comprehensive Plan’s Public Facilities and Water Resources Element has many stormwater management-related credits available.
  - The credits need to be based on the volume of stormwater to be infiltrated which directly translates to pollutant load reductions achieved.
- Recommendation #7, Section 30-340: Expand existing credit system by adding reference to new Best Management Selection Criteria Tables recommended for Section 16-115. Describe City council authorization to administer the credit system in Section 30-340 or elsewhere in Chapter 30.
  - We recommend that the credit system be based on actual load reductions achieved as documented with BMPTRAINS.
- Recommendation #9, Section 50-103: Consider expanding current conditions where pervious surfaces are allowed.
  - We strongly support this recommendation. We suggest the City look at recently revised Pinellas County or Alachua County BMP manuals and Land Development Codes for suggested language. Same comment for Recommendation #10.
- Section 52-184. Timing of fertilizer application – No recommended changes
  - We support the language addition of “changes as developed by the Natural Resources Section”.
- Recommendation #15. Sec. 54-74. - Land development innovations. Specifically reference Low Impact Development (LID) as example of development project type that may qualify under this section. Additionally, preparation of a LID Implementation Manual is proposed to provide property owners and developers a range of options for meeting stormwater quantity, quality, and resiliency standards while maintaining contextual sensitivity. The manual would allow for flexibility to select the appropriate BMPs to that which can be integrated into the overall design of the property offering improved aesthetics and function.
  - We support and agree with the recommendation. However, to promote LID the City needs to include incentives in the LDC to promote LID, such as open space or landscaping credits, increased density, etc.
- Recommendation #16, Sec. 56-40. - Lot coverage, maximum permitted. Introduce limits for maximum lot coverage for other impervious surfaces (e.g. driveways, patios) with

option for increased area limits when using pervious surfaces. Reference BMP incentive table (described in Section 54-6 review) for possible credits available for pervious surface and consider adding incentive for lots that have significantly less coverage than maximums shown in current Sec. 56- 40 table.

- This is a good concept. Any stormwater credits should be based on the actual reduction in stormwater volume achieved with pervious pavements.
- Recommendation #17, Sec. 58-60, 58-90, 58-120, 58-150, 58-180, 58-210, 58-240. - Maximum building area: Consider lowering percentages for maximum building areas in the above described Residential districts. Also, introduce limits for maximum lot coverage for other impervious surfaces like driveways with option for increased area limits when using pervious surfaces. Reference BMP incentive table (described in Section 54-6 review) for possible credits available for pervious surface and consider adding incentive for lots that have significantly less coverage than maximums shown in current tables. Consider lowering minimum floor areas listed in each section as well.
  - We would like to be involved in the discussions to further refine and implement these revisions.

#### 7.4. MS-4 Permits

This section needs to note and discuss the TMDL requirements in the City’s MS4 permit. Namely “If a TMDL is approved for any water body into which the Phase II MS4 discharges, and the TMDL includes requirements for control of stormwater discharges, the operator must review its stormwater management program for consistency with the TMDL allocation. If the Phase II MS4 is not meeting its TMDL allocation, the operator must modify its stormwater management program to comply with the provisions of the TMDL Implementation Plan applicable to the operator in accordance with the schedule in the Implementation Plan.” The City will need to explicitly state what actions they are taking to reduce stormwater pollutant loadings from the MS4 for each of its water bodies with an adopted TMDL.

## **Chapter 9**

Please delete the third paragraph as it is factually wrong. The FDEP Green Industry BMPs are not “Green Infrastructure BMPs” also known as LID BMPs. The Green Industry BMP Program is a training and certification program for those who apply fertilizers and pesticides. The actual LID BMP is Florida-friendly Landscaping and Fertilizers.

Any stormwater credits in Table 9-1 need to be based on good science, namely monitoring and design criteria. For Infiltration or retention BMPs this means the credit is directly proportional to the annual volume of runoff that is retained on-site.

### 9.2. Green Infrastructure and LID

Why limit to just five LID BMPs. The Pinellas, Alachua, and Escambia County Stormwater Manuals, along with BMPTRAINS, include 12 Site Planning BMPs, 10 Source Control BMPs, and 14 Structural BMPs that include 10 LID BMPs.

These Manuals are available on-line at:

- Pinellas County - [http://www.pinellascounty.org/plan/stormwater\\_manual.htm](http://www.pinellascounty.org/plan/stormwater_manual.htm)
- Alachua County - <http://www.alachuacounty.us/Depts/epd/WaterResources/Pages/Stormwater-Manual.aspx>
- Escambia County - <https://www.myescambia.com/our-services/natural-resources-management/water-quality-land-management/low-impact-design>

**9.2.3 Rain Gardens**

Given the soil and water table conditions in the City, this section needs to discuss the use of both “retention” and “detention” based rain gardens. They have different design criteria and pollutant load reduction benefits.

We offer the following revision of this chapter to incorporate Florida stormwater BMP information rather than using EPA information:

**9. Best Management Practice (BMP) Review**

**9.1 BMP Evaluation**

Low Impact Development (LID) is a comprehensive approach to managing stormwater using hydrology as the integrating framework. LID is also referred to as “Low Impact Design”, “Green Infrastructure”, or “Water Sensitive Urban Design

The LID approach incorporates natural processes to maintain pre-development hydrologic patterns by using nonstructural and structural BMPs to control stormwater at the source using decentralized BMPs integrated into a BMP Treatment Train. A major LID principle is to minimize impervious surfaces and reduce stormwater volume and pollutant loading by capturing and retaining rainwater where it lands using infiltration, evapotranspiration, and stormwater harvesting. The goals and benefits of LID BMPs include improving water quality, attenuating flows, recharging groundwater, reducing potable water consumption, habitat restoration, improving aesthetics, and potentially a cost reduction in community infrastructure

Table 1 lists the primary nonstructural and structural LID BMPs being used in Florida. Since LID BMPs include Site Planning BMPs and Source Control BMPs, an integrated site design process is needed as are clear guidelines for using LID BMPs within a local government’s Land Development Codes. During the past three years, several Florida local governments have developed and implemented LID BMP Manuals and revised their Land Development Codes to encourage and incentivize using LID BMPs for stormwater management. These include Pinellas County, Alachua County, and Escambia County.

Site Planning	Conceptual Site Planning	Load
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<b>BMPs</b>		<b>Reduction Credit</b>
<a href="#">SP1</a>	Inventory Site Assets: Hydrology	
<a href="#">SP2</a>	Inventory Site Assets: Topography	
<a href="#">SP3</a>	Inventory Site Assets: Soils	
<a href="#">SP4</a>	Inventory Site Assets: Vegetation	
<a href="#">SP5</a>	Protect Surface Waters and Wetlands	
<a href="#">SP6</a>	Preserve Open Space	
<a href="#">SP7</a>	Natural Area Conservation - Retain Tree Canopy and Native Landscapes	√
<a href="#">SP8</a>	Cluster Design and Maximize Gross Density	
<a href="#">SP9</a>	Minimize Building Footprint	
<a href="#">SP10</a>	Minimize Total Impervious Area	√
<a href="#">SP11</a>	Minimize Directly-Connected Impervious Area	√
<a href="#">SP12</a>	Curb Elimination and Curb Cuts	

<b>Source Control BMPs</b>	<b>Source Control Techniques</b>	<b>Load Reduction Credit</b>
<a href="#">SC1</a>	Retain Natural Landscape Depressions	
<a href="#">SC2</a>	Minimize Clearing and Grading	
<a href="#">SC3</a>	Minimize Soil Disturbance and Compaction	
<a href="#">SC4</a>	Build with Landscape Slope	
<a href="#">SC5</a>	Retain Native Landscapes at the Lot Level	
<a href="#">SC6</a>	Florida-friendly Landscapes and Fertilizers	√
<a href="#">SC7</a>	Rainfall Interceptor Trees	√
<a href="#">SC8</a>	Install Efficient Irrigation Systems	
<a href="#">SC9</a>	Use Non-potable Water Supply for Irrigation	

<a href="#">SC10</a>	Community and Home Owner Education	
<b>Structural BMPs</b>	<b>Structural Stormwater BMPs</b>	<b>Load Reduction Credit</b>
<a href="#">SW1</a>	Retention Basin	√
<a href="#">SW2</a>	Exfiltration Trench	√
<a href="#">SW3</a>	Underground Storage and Retention	√
<a href="#">SW4</a>	Rain Gardens	√
<a href="#">SW5</a>	Treatment Swales	√
<a href="#">SW6</a>	Vegetate Natural Buffers	√
<a href="#">SW7</a>	Pervious Pavements	√
<a href="#">SW8</a>	Green Roofs with Cisterns	√
<a href="#">SW9</a>	Rainwater Harvesting/Cisterns	√
<a href="#">SW10</a>	Wet Detention Systems	√
<a href="#">SW11</a>	Stormwater Harvesting/ Horizontal Wells	√
<a href="#">SW12</a>	Filter Systems	√
<a href="#">SW13</a>	Managed Aquatic Plant Systems	√
<a href="#">SW14</a>	Biofiltration Systems/Tree Box Filters	√

The City of Naples Stormwater Ordinance 07-11807 encourages the use of the latest BMPs and LID approaches as defined by the State. The goal is to improve control of runoff to the City’s swale system, increased retention systems on private property with more runoff percolating into the groundwater, improved pre-treatment of runoff and potentially reduced flood elevations experienced from specific storm events. The Stormwater Ordinance includes a table of BMP Selection Criteria, which includes a proposed credit for use of a BMP. The current BMP Selection Criteria table is shown in Table XX.

**Comment: Is this table only for single family residential stormwater systems? The stormwater credits should be based on the volume of stormwater to be infiltrated which translates to pollutant load reduction. Have revised the table to update terminology and to combine concepts where appropriate**

Table 9-1 Best Management Selection Criteria

Proposed BMP Selection Guide			
	Additional BMP Measure Utilized	Proposed Credit	Justification Explanation
1	Common Swale on Joint Lot Line		Grading disparities between properties and minimal distance between side setbacks result in difficult to construct an efficient stormwater treatment system that is difficult to maintain. Any property owner that can negotiate and develop a common swale between two lot lines provides a typically superior to maintain, problem free solution that can remove pollutants with a high efficiency as well as carry on-site stormwater in an easier to maintain technique that underground vaults and pipes.
2	Driveway Runoff Management		Because of FFE requirements most new homes are well above the crown of the roadway and driveways have steep slopes where all impervious pollutants drain into Public Right-of-Way with little treatment. Valid techniques, such as pervious pavement, intercepting driveway trench drains, and roof runoff management can decrease imperviousness, stormwater volume, and pollutant loadings.
3	Pervious Driveway · Flat ( $\leq$ 2% slope)		Driveways that are made of pervious materials that allow percolation will be given BMP

	<ul style="list-style-type: none"> <li>· Med (2% &gt; 5% slope)</li> <li>· Steep (<math>\geq</math> 5% slope)</li> </ul>		credits. Their effectiveness is directly related to the pervious pavement used and the driveway slope.
	Roof Runoff Management		Often roof runoff is directed onto impervious driveways that discharge stormwater off-site. Roof gutters can be used to direct the runoff to pervious areas such as rain gardens or to rain barrels or cisterns where the water can be used for irrigation.
5	“Rain Gardens” – recessed landscaping		Rain gardens are small, shallow depressions within the landscaping that are design to retain stormwater and allow it to infiltrate or evaporate. They can be used to collect roof runoff or runoff from driveways, parking lots, or roads. Recessed landscape islands in looped driveways, parking lots or within cul-de-sacs are good examples.
7	Pool and Deck “Self-Containment” Design		Designing a pool deck area to shed the runoff back to the pool instead of penetrating additional stormwater runoff will be rewarded with BMP credits.
8	Florida-friendly Landscaping and Fertilizers		Florida-friendly landscaping and fertilizers can be used to minimize the nutrients in runoff or leaching .



While many of the above BMPs are focused more towards single-family residential properties they also are very applicable to commercial land uses, office parks, and government facilities.

#### Conclusion

In conclusion, the Conservancy is supportive of many aspect of the SWMP. However, there is still an inherent conflict in the Comprehensive Plan and the SWMP between the City's LOS goal of 85% treatment and then relying on SFWMD rules and permits. The SWMP does not include any discussion of the Net Improvement Performance Standard for impaired waters, the additionally pollutant loading entering the City's MS4 from the lack of Net Improvement stormwater systems, nor the issues associated with the developer self-issued stormwater general permit for projects under 10 acres with less than two acres of impervious.

Thank you for your time and consideration of our issues and concerns. If you have any questions or need additional information, please feel free to contact me at 236-262-0304 x 267 or [kellym@conservancy.org](mailto:kellym@conservancy.org).

Sincerely,

Kelly McNab

Environmental Planning Specialist

CC: Andrew Holland