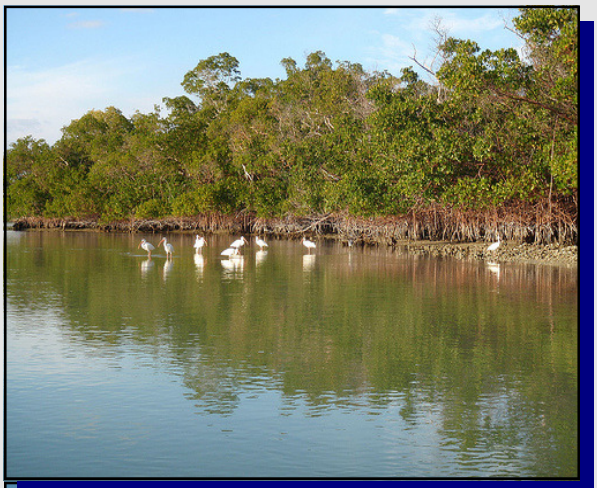

City of Marco Island Stormwater Management Program

Prepared for

City of Marco Island

Public Works Department
50 Bald Eagle Drive
Marco Island, FL 34145

Final:
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WEC excellence in engineering

City of Marco Island
Stormwater Management Program

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Marco Island, FL 34145

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ENGINEER'S CERTIFICATION

This is to certify that the information contained within this booklet has been compiled by me or under my responsible charge and

This is to verify that the enclosed engineering calculations were performed by me or under my responsible charge

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Executive Summary

The degradation of water quality of surficial waters is often linked to the quality of stormwater that enters into these bodies of water. To increase the quality of water by reducing the amount of pollutants that enter the waterbodies through stormwater runoff, the U.S. Environmental Protection Agency, teaming up with the Florida Department of Environmental Protection, have implemented regulatory policy to increase environmental awareness and also to create an adherence to guidelines for the stormwater runoff. This regulation is in the form of the National Pollutant Discharge Elimination System (NPDES), which is divided into two phases. Phase I is for large municipalities of more than 100,000 people. Phase II is for municipalities that have at least 10,000 people, but less than 100,000. As a small Municipal Separate Storm Sewer System (MS4), the City of Marco Island must participate in the NPDES Phase II program.

The NPDES Phase II program requires a minimum number of elements to be developed and put into action. These elements consist of six areas to improve the stormwater runoff quality including; public education and outreach, public participation/involvement, illicit discharge detection and elimination, construction site stormwater runoff control, post-construction stormwater management, and municipal operation pollution prevention and good housekeeping. Within these elements, a list of individual yet broad set of requirements are delegated as part of the permit. These elements include steps such as requiring ordinances for illicit discharge, conducting construction site inspections, and having a storm sewer system map.

The City of Marco Island has already begun many of these Best Management Practices that help protect their waterways. Some of the existing stormwater programs within the City of Marco Island that have been selected to be elements of the permit will need to be modified to fit the NPDES program and some will need to be started from the beginning. The NPDES Phase II permit lasts for five years, with all of the required minimum controls being placed into action before the five year period has expired. Through teaming up with local groups, providing more documentation on currently practiced elements, and creating new ways of reaching out to the general public; the City of Marco Island will be able to fully meet the requirements of this permit. Along with describing the programs that encompass the NPDES Phase II permit, an outline of the City's existing environmentally conscious programs have been highlighted, in addition with recommendations to make the transition into the program as seamless as possible. Information was collected to determine the best plan of action for the City of Marco Island through interviews with the Public Works Department staff, research on current practices within the City, and assessment of the current stormwater management program through their Drainage System Maintenance Program, Master Drainage Plan, and the geographic information system (GIS). An analysis was also completed to compare the City of Marco Island's stormwater management program to other similar MS4s in Florida for stormwater funding and staffing.

Overview

This report was completed as part of the implementation of the National Pollutant Discharge Elimination System (NDPES) for a Municipal Separate Storm Sewer System (MS4) Phase II Permit for the City of Marco Island. This permit, issued by the Florida Department of Environmental Protection, sets forth a minimum set of requirements for municipalities to adhere to. Phase II is specifically designed for municipalities that have less than 100,000 residents. For areas with a larger population, the Phase I requirements are mandated with similar, yet more stringent regulations.

The goal behind this permit is to implement best management practices that promote high water quality by addressing key points that can degrade stormwater quality. Key elements that contribute to the decline in water quality include:

- Illegal discharge of toxic chemicals;
- Poor maintenance of construction sites;
- Poor maintenance of stormwater systems; and
- Trash and debris

By combining the efforts previously established by the City along with a few additions, the City can reduce the amount of pollutants that are introduced into the stormwater and ultimately into the waterbodies neighboring Marco Island.

Regulatory Background and Requirements

The NPDES program was developed by the U.S. Environmental Protection Agency (EPA) in 1990 with Phase I to address stormwater quality for medium and large municipalities. The size of the municipality is based upon the population as registered in the census. Municipalities with a population beyond 100,000 people would require a Phase I NPDES permit. In 1999, Phase II was created and implemented to address additional sources of pollution that are not included within Phase I. Phase II focuses on small MS4s that are not presently included in a Phase I permit and also small construction activity that disturbs between 1 and 5 acres.

The main purpose of the permit is to develop and enforce a Stormwater Management Program to reduce the discharge of pollutants to the Maximum Extent Practicable in order to protect water quality and meet the guidelines as set in the Clean Water Act. The permit uses a variety of areas to achieve this goal of limiting the amount of pollutants that enter the waterways. The six elements that make up the Phase II permit include:

1. Public Education and Outreach as to Stormwater Impacts
2. Public Involvement/Public Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Stormwater Runoff Control
5. Post– Construction Stormwater Management in New Development and Redevelopment

6. Pollution Prevention/Good Housekeeping for Municipal Operations

Once the permit has been issued by the FDEP, it is valid for 5 years. After the 5 year period, a new permit will be issued. As a requirement of the permit, the City will be required to submit an annual report on the progress of the elements that have been set in place. These elements can be implemented over the five year period to allow for funding and proper time allotment to begin the new programs or effectuate new policies. Audits conducted by the FDEP assess the compliance with the permit .

Permit Overview

To meet the requirements of the NPDES Phase II permit, the municipality must implement a minimum number of elements. These elements are components of the six minimum control measures that are required. These elements are broken down into individual criteria for which the City has some variety on what program or ordinance they choose to develop. The following minimum elements are described below.

Element 1: Public Education and Outreach Minimum Control Measure. This element sets forth a requirement to develop a public education outreach program. This measure can be met by distributing educational material at community gatherings or by conducting activities that involve the public as they relate to reducing the amount of pollution in stormwater runoff and minimizing the impacts of urban stormwater on water quality in the surrounding waterbodies.

Element 2: Public Participation/Involvement Minimum Control Measure. This element requires the implementation of public programs that promote involvement and are in compliance with State and local public notice requirements. While similar to Element 1, this one focuses on having the public participate actively in events or meetings that are related to stormwater management rather than simply providing education to them about stormwater management.

Element 3: Illicit Discharge Detection and Elimination Minimum Control Measure. Element 3 is a four part element. Part (a) requires the development of a storm sewer system map that outlines all the outfalls and the names and locations of all surface waters to which the outfalls connect. Part (b) brings forth an ordinance, code, or other legal measure that explicitly prohibits the discharge of any non-stormwater material into the storm sewer system. This measure further requires enforcement actions to be outlined. Part (c) requires the development of a plan to detect and eliminate any illicit discharge into the storm sewer system. Lastly, part (d) is designed to education the public, department staff, and business owners of the dangers associated with illicit discharge.

Element 4: Construction Site Stormwater Runoff Control Minimum Control Measures. This element is comprised of six different requirements. All of these parts herein are geared towards minimizing the impact to water quality as a result of future development.. Part (a) is geared to

the specific State or local law that requires erosion and sediment control at construction sites. Furthermore, the regulatory mechanism must also specify sanctions that will promote compliance. Construction sites that are required to meet this specification are sites that disturb more than one acres of land or if that construction is part of a larger common plan or development that is one acre or more. Part (b) is closely related to part (a) by explaining what measures are taken that specifically relate to the ordinance or rule specified in part (a). Part (c) of this element assesses the waste control measures that must be employed by site operators. Waste control measures could involve litter control, disposal of construction materials, concrete truck washout, or the prevention of chemicals or other threatening substance that will impact water quality. Part (d) presents the requirement of site plan reviews to consider the impact to water quality. Part (e) links the legal enforcement and measures taken at the construction site with public input. This is generally related to a hotline or way for the public to comment on situations at the job site. This can also be related to the public input of ordinances or rules the public feels should be added or eliminated from policy. Part (f) requires site inspections to take place as a means to enforce all the control measures.

Element 5: Post-Construction Stormwater Management in New Development and Redevelopment Minimum Control Measure. This element is optional if the municipality is using a qualified alternative measure. If the alternative measure is not utilized, this element is comprised of three parts. Part (a) requires the use of a regulatory mechanism to respond to post-construction runoff. Similar to Element 4, the construction sites of concern are those that disturb more than one acre of land or if the construction is part of a larger plan for development and discharge into the MS4. Part (b) of this element is to create and install Best Management Practices for the development. Part (c) requires long-term operation and maintenance of the Best Management Practices listed as part (b) of this element.

Element 6: Municipal Operation Pollution Prevention and Good Housekeeping Minimum Control Measure. This two part element consists of a variety of measures that can be taken to promote increased stormwater quality. Part (a) mandates the development and implementation of an operation and maintenance program that contributes to the reduction of pollution to storm sewer system from a MS4 operator perspective. Part (b) utilizes training material from a variety of sources to provide employee training to more effectively assess, handle, and prevent stormwater pollution from MS4 operator activities.

City of Marco Island Background

Marco Island is located on the Gulf of Mexico in Southwest Florida (Please see Exhibit 1). It is the largest of the Ten Thousand Islands. The City, located within Collier County, consists of 17.2 square miles of land surrounded by canals and bays that connect to the Gulf Originally inhabited by the Calusa Indians, the area has a history of natural Florida with mangrove swamps and flourishing sea life. In 1870, Marco Island was founded by William Thomas Collier. During this time, clamming was a large industry in the area. The Collier family began the first development of the island. Later, in the 1920s, Barron Gift Collier,

Marco Island, Florida

Exhibit 1: Aerial of Marco Island, Florida

purchased over one million acres of Southwest Florida for further development. The development of the land did not take hold until the 1960s where the island had a population of 550 people. The current population of the Marco Island is nearly 16,500 (2010 Census).

The island has four miles of beaches, currently fully developed with resorts. At the present state, approximately 4,700 of the 6,500 lots have been developed on the island. This leaves about 1,800 lots vacant that are available for future development. With the current build-out at a little over 72%, the majority of the stormwater management design has already been implemented for some time. With more development likely, this presents the City with an opportune time to administer the latest BMP practices in accordance with the new Phase II NPDES permit.

Receiving Waters

Marco Island is surrounded on all sides by water. To the north of Marco Island are Marco River, Factory Bay, and Big Marco Pass. To the east of Marco Island is Barfield Bay with the Gulf of Mexico to the west. The south end of the island is home to Roberts Bay and Caxmbas Pass. The inner island has several ponds and miles of canals. On a larger scale, Marco Island is part of the Rookery Bay watershed. As of 2009, the Florida Department of Environmental Protection listed 85% of the Rookery Bay watershed as being impaired. The waterbodies to the northeast of Marco Island have impairments for dissolved oxygen, nutrients, and fecal coliform. In response to these concerns, Marco Island has transferred from septic systems to a centralized sewer system. This action has helped to improve the surficial water quality, particularly in the canal system. Furthermore, the City of Marco Island currently does water quality testing within the canal systems to monitor the improvements.

City of Marco Island Public Works Department

The City of Marco Island is comprised of several governmental entities with the Public Works Department presently the key administrator of all stormwater related activities. Aside from setting budgetary allotments and implementing ordinances, the Public Works Department handles the stormwater inspections, right-of-way inspections, permitting, traffic/roadway maintenance, bridge work and maintenance, streetlight repair, stormwater maintenance, waterway signage and maintenance, illicit discharge inspections, and also administrative functions to the aforementioned. This work, currently conducted by a staff of 6, is already making positive strides to increase the water quality both within the canals system and the neighboring waterbodies.

Public Works Department Maintenance Program

In 2012, the City of Marco Island established their latest edition of their Drainage System Maintenance Program. This program is funded through a 5-year Capital Improvement Program and annual appropriations. The program is comprised of 6 categories including:

- City Wide Drainage Improvements
- Replace/Repair Existing Outfalls
- Reconstructing Existing Throat Inlets
- Right-of-Way Swale Drainage
- NPDES Water Quality Measures
- Grate Skimmer Inlets

City wide drainage improvements account for additional storm sewer and outfalls that will assist in the management of stormwater and reduce any flooding. The replace/repair exiting outfall component serves to replace or repair metal storm sewer pipes that fail due to corrosion and/or structural overloading. In many cases, the pipes are relined to avoid difficult replacements where areas are too tight to bring in large equipment. The reconstruction of existing throat inlets are completed on an annual basis. This process allows for water quality improvements by limiting pollutants and debris from entering the stormwater system. The right-of-way swale drainage component includes the annual regarding of drainage swales. Drainage swales are a key component and often a limiting factor in the ability of the Public Works Department to keep the stormwater off the streets. The NPDES Water Quality Measures focuses on maintaining effective collection and discharge of urban runoff. The final category, grate skimmer inlets, is a method employed by the City of Marco Island to increase the stormwater quality exiting into adjacent bodies of water. As of the 2012 maintenance document, approximately 1000 stormwater inlets that would require retrofitting inlets with these grate inlet skimmers. These skimmers also go hand and hand with the vacuum truck for stormwater inlet cleaning.

The original stormwater management plan was established by the Deltona Corporation between the 1970's through 1980's. After the Deltona Corporation, Collier County took over from the 1980's through 1997. The City of Marco Island, specifically the Public Works Department, took over the responsibility of the stormwater management system effective October 1998. The original system was designed to pass a 10yr, 1hr storm event with an intensity of duration of 3.3inches of rainfall/hr.

The system is broken down into 4 different stormwater management facilities; right-of-way and public drainage easements, Planned Unit Development (PUD), small private, and institutional facilities. The city right-of-way and public drainage easements is the largest and consists of repair, operation, maintenance, and replacement. PUD includes areas that are larger

than 10 acres in size. Currently, two PUDs exist in the City of Marco Island. Hideaway Beach and Cape Marco are both planned unit developments that are responsible for operation and maintenance repair on their property. Small private facilities are less than 10 acres and include light industrial, commercial, residential, and institutional facilities. Small private facilities are also responsible for operations and maintenance/repair on-site. Institutional facilities consist libraries, churches, parks, and governmental facilities. Individual property owners are responsible for on-site stormwater facilities on their property.

Further included in the 2012 maintenance document is a list of the public benefits associated with the program. Maintenance allows for stormwater to effectively be removed from streets to minimize any risk flooding or ponding. The Public Works Department also strives to re-grade the swales to ensure that the flows are able to move as seamlessly to the outfalls as possible. Another benefit of the maintenance program is to properly contain stormwater as an important component to retaining property values. In addition, commercial property owners benefit from the appropriate control of stormwater that might otherwise inhibit customers from visiting their businesses. Proper stormwater maintenance allows for an increase in water quality; not only for the discharge in local waterbodies, but also for the preservation of nearby environmentally sensitive lands. The stormwater management system is also a critical piece of the City's infrastructure. As the city continues to grow, a larger and more reliable stormwater management system is crucial. Proper maintenance of the existing systems also increases the useful life of the infrastructure. The maintenance of the stormwater system is also linked to pavement failures that can be safety hazards and result in the closure of roadways. The stormwater system also meets the requirements of the water management district for water quantity and water quality. The final benefit is that the Public Works Department and the City of Marco Island strive to find funding for stormwater projects through grant opportunities. Grants provide funding for critical projects without further stressing the City's budget. Proper maintenance protocols help to increase the likelihood of receiving grants for the stormwater program.

The Public Works Department also assessed the areas of the stormwater management program that are in need of improvement. One problem is the existence of stormwater on critical streets that are causing safety concerns. The proposed solution is to establish a positive storm sewer system. Another problem is the economic loss related to flooding properties. The solution to this is the same as listed above with the addition of more swales and possibly modifying the topography. Old, deteriorated outfall pipes can be resolved with the replacement of the pipes. Raised concrete throats are currently being replaced or cut down with a priority of keeping the arterial and collector roads to keep them free of water. The main problem determined by the Department, is the blockage of swales and improper swale layouts. The solution, and primary concern, as established in maintenance program and also from interviews, is the re-grading of the swale system. Proper equipment is required to grade the swales in addition to further issues with lawn maintenance, rock swales systems, and vacant lots causing a dead end of the swale rather than reaching the outfalls.

City of Marco Island NPDES Elements

The NPDES Phase II permit sets forth a series of requirements that must be meet in order to establish that methods are being employed to increase stormwater quality and decrease the amount the pollutants that can enter the neighboring waterbodies. As such, the City of Marco Island has already implemented some programs and regulations that already meet requirements, as well as created a plan for future advancement of this permit.

Element 1a
BMP 01: City Web Page

This BMP includes the use of a city web page to convey information to the residents of Marco Island. Prior to the start of the permit, the City has already established a web page that provides information on

- Illegal discharges into the stormwater system;
- Statement prohibiting the alteration or obstruction of the stormwater management system;
- The purpose and proper maintenance of swales;
- And a statement prohibiting littering

Because this web page is already in existence, the addition of this plan into the NPDES Phase II permit can be instantaneous. This web page would be made available for the public for the entire five year term of the permit. Web pages offer a great tool to reach out to a large number of people, are cost effective, and provide awareness in a sustainable manner. The measurable goal that correlates to this includes documenting the number of web page visits that occur each year. This will provide feedback as to the success of this element in an easy to report manner.

What's New?

The existing web page has some key information available, however the web page will be edited starting in year 2 of the permit. This will allow the City to focus on adding in other elements and allow for some transition time. The new web page will cover more topics and will be easier to locate for the general public. To further increase the amount of information available, links will be provided to an abundance of sites that will offer the viewer more information and from reliable sources. Additionally, the new web page would have the ability to download informational brochures. The new web page would include topics on:

- NPDES Phase II permit information
- How stormwater management systems operate
- How residents can help with the stormwater management system/ proper maintenance practices

- Illicit discharge examples and effects
- Water quality information
- Best Management Practices
- Collier County/ City of Marco Island recycling drop-off center information
- Benefits of grassed swales
- Links to other sources of information
- Contact information for the City
- Frequently asked questions section

What's Required?

The Public Works Department would be directly handling the content for the web page. Adding more information initially will be more time consuming than steps required in future years. The Information Technology Department would be an ideal candidate to implement the new web page since they are currently responsible for the City's website. As an additional option, an outside agency could be hired to accomplish this web page at a higher cost to the City.

Element 1a
BMP 02: Participation at Local Events

This BMP includes the City's participation at local events. Currently, different departments and committees within the City are already heavily active within the community. Marco Island is a close-knit community that holds many events that draw a significant crowd. The element is set to begin within year two of the NPDES permit issuance.

What's New?

The key to a successful NPDES program is educating the people involved with the program. To do this, the City must reach out to the general public, local business owners, and its own employees. The web page mentioned in BMP 01 will reach the more "technology savvy" community members but will not suffice to reach out to those who do not turn to their internet as an information source. Attendance at public functions offers the opportunity to reach out to a variety of people. This option also allows face to face interactions from knowledgeable staff members and gives the public a chance to ask questions. Not only would this create a more personal relationship with the public, but it also provides a way to reach out to citizens from Key Marco and Hideaway Beach that currently are not connected to Public Works Department Stormwater program, thus promoting a sharing of ideas. The measurable goal associated with this is achieved by documenting the number of events the City has attended and documenting the amount of brochures that have been handed out.

Brochure topics could include:

- How stormwater management systems work
- Water quality issues
- Benefits of grassed swales
- Illicit discharge examples and effects on the environment
- NPDES Phase II permit information
- The public's role in stormwater management
- How construction can impact local water quality
- Collier County/ City of Marco Island recycling drop-off center information
- Dangers of disposing of pool water into the storm sewer system
- Promote the public attending City Council meetings

What's Required?

The key to the success of this element is having knowledgeable staff members to attend the events. The City has the ability to pick and choose what events they want to participate in as well as the amount of events that they participate in. Currently, the City hosts a weekly farmers market and annual events like the Marco Island Seafood Festival. Many other options exist such as the arts and craft fairs and other festivals. The Island also participates in seasonal celebrations that may provide opportunities to reach out to the public. As the program progresses, volunteers could be mixed into the program to offset the number of staff members that are required to operate an information booth at public events. To do so, a staff member would need to operate as a training member to get volunteers up to speed on the topics. Costs could also be mitigated by using college interns for such programs. The costs for publishing brochures ranges based on the size, color scheme, and company; however, it is likely they could be produced for $0.25-$0.90 per brochure. In-house printing could be a more cost effective alternative if more staff members were provided to the department. The largest cost to this element is the staff's salary to attend the events and to prepare the brochures and information. By utilizing volunteers, the City could save approximately $4,000 per year.

Element 1a
BMP 03: New Homeowner Packets

Homeowner packets would serve as a way to reach out to new residents in Marco Island. This program has not yet been implemented and would begin in year 2. This is delayed in order to allow the City of Marco Island to begin implementation on a staggered schedule, thus providing time to provide staff and funding for the NPDES Phase II permit. The new homeowners packet would include brochures and handouts with the same information that is available both on the website and also on brochures that are distributed at public outreach events. The packet could also contain important phone numbers for contact information (i.e. City departments, utility contacts, emergency personnel, phone company, or power company), a calendar of events to promote the City's events, and other important

information such as garbage days, the City's/County's recycling program, and a summary of important ordinances. This would also be an great way to promote the City's boards and committees. As an added incentive, the City could also have coupons or business promotions for new home owners to help offset the cost of distributing these packets. The measurable goal for this would be to document the number of packets distributed each year.

What's Required?

The Public Works Department would be responsible for providing the detailed information as in BMP 01 and BMP 02. Currently, the department does not have a sufficient staff to take on this project. The City could determine if they wanted to print out the packets themselves or if they wanted to use an outside company to prepare them. At minimum the department would need someone in an administrative capacity to compile the information for print. If the City decided to sell advertising to the local businesses, a marketing and/or the administrative staff member could handle this process. The City would then need to determine the best way to reach out to new homeowners whether that be through real estate offices, title agencies, or the utility department to locate new home owners. The largest cost associated with this element is the postage to mailing the packets. This could be minimized if the organization (real estate agent or title company) agreed to distribute these items.

Element 1a
BMP 04: Utility Inserts

The final BMP related to Public Education and Outreach includes adding a periodic utility insert. This is another program that the City currently does not have. Utility inserts would be simply a single page flyer promoting one or two ideas to the public. For example, the first flyer would discuss the new NPDES Phase II permit. A utility insert would be designed to provide visual information is a short, concise manner. This is designed to reach the public that may not necessarily be new homeowners or feel compelled to peruse the City's website. This also provides some overlap for those not in attendance at the public outreach events or maybe did not take the time to stop at the City's information booth. Furthermore, the more frequently the public sees that topic, they may realize its importance. The measurable goal is to document the number of utility inserts that have been distributed.

What's Required?

This is also a cost effective method to reach out to many people. The cost to print one page of information is minimal. The Public Works Department would be responsible for organizing the content, however, the department would need to work with the utility department to have the inserts distributed. The cost to mail would be the same as mailing a utility bill; the only added effort would be adding another sheet of paper to the envelope. The cost estimated for this element in Appendix D is drastically higher than what the element

would cost under ideal conditions. The largest portion of the cost in the estimate is the postage required for all 18,000+ residents on Marco Island on a quarterly basis. Ideally, this would be combined with the utility bill to reduce or avoid this added significant cost.

Element 2a
BMP 01: Public Involvement through Meetings and Workshops

The first BMP requires the public's involvement in meetings/workshops. This is one of the elements that is already being completed by the City. The City currently posts City Council meetings on the website's calendar and also has a link that provides the meeting minutes of previous meetings. The idea behind this element is to promote the public opinion as it relates to the new NPDES Phase II permit and stormwater management issues. Public meetings and workshops give the public the opportunity to ask questions and also express concerns that they might have. In many cases, the success of a project is often linked to the public support. Explaining why projects are needed from either the City's or the public's perspective, often helps the project progress more smoothly. Furthermore, public involvement helps alleviate tension during the construction process. Funding for projects is also a sensitive topic for all parties involved. Often citizens are opposed to tax increases simply because they do not feel like the project is important or do not fully understand the benefits. Open discussions can be used to explain what the project is about and why it is needed. This also gives the public a voice in discussing problems they are having. For example, if flooding is a concern in a certain area, these first hand descriptions may show the Council that the problem is worse than they had previously expected and might be the difference in that project getting funding or not. The measurable goal for this BMP would be to document notifications informing the public of meetings and workshops and also documenting the number of citizens at these meetings and workshops. These two measurable goals will show if there is an increase in public attendance.

What's Required?

Because this BMP is already in progress, little needs to be done to add this to the NPDES Phase II permit. This BMP also goes hand and hand with the BMPs in the Public Education and Outreach section. The City could choose to mention upcoming City Council meetings and stormwater related workshops in any of the public outreach opportunities previously discussed. This BMP does not require the addition of more staff or significant funding, yet helps meet the stipulations of the NPDES permit. Similar to previous elements, the largest cost is for postage.

Element 2a
BMP 02: Beach and Stormwater Outfall Clean-up Program

The City already has two organizations that routinely host beach clean-ups in Marco

Island. The Beach Advisory Committee and the Friends of Tigertail Beach are two groups of volunteers that routinely participate in beach clean-ups that are responsible for removing large amounts of trash from the City's beaches.

What's New?

The City of Marco Island's Public Works department would team up with either one or both of the organizations that are already cleaning up beaches. The City is currently at a disadvantage because of staffing limitations and cannot currently meet the demand to inspect the stormwater outfalls more than one time annually. The majority of the outfalls fall below the water level, thus are problematic to inspect. However, inspections can take place during beach clean-ups that would allow volunteers to alert the City of problems before they become large, costly problems. With minor training, volunteers can easily become critical members of the City's Stormwater program. This connection between the groups helps to increase the water quality and beach quality that is so important to both parties. This also helps the city by potentially having the ability to address problems before they progress to a point that severe damage to the environment takes place or before the project's repair costs increase drastically.

Below is a list of visual inspections that can be completed for outfalls that are below the water surface that may indicate signs of a problem.

Signs of a potential problem at outfalls:

- Strange/foul odor from the water at the outfall
- Strange color to the water exiting the outfall
- Damage to any visible piping
- Oil ring floating on the surface of the water

What's Required?

The first step to implementing this method would involve making contact with one or both of the existing groups and determining if the other party is interested in teaming up. Once that has been established, the next step is to provide some training for the volunteers. To do this, the City would need a staff member that not only has the time to train volunteers and participate in at least the first few events, but also the time to create some training material. The training program would be designed to be simple. Ideally, preparation would include pictures with details of what is considered to be indicative of a problem and some examples of illicit discharge.

Element 2a
BMP 03: Labeling of Storm Sewer Drains

Labeling storm sewer drains is a key initiative to prevent accidental and malicious dumping into the storm sewer. To the people that understand how storm sewers work, the concept is simple and the idea of dumping dangerous chemicals into the sewer seems illogical. In reality, the general public does not necessarily understand the stormwater process. Some may think that the water gets treated similar to the way wastewater is treated before release. Others may not understand that what they are dumping is bad for the environment. The most commonly observed illegal dumping into the storm sewer system is the disposal of pool water. To home owners, the concept of disposing of their pool water is not a big deal and is perceived as certainly not as dangerous as dumping a chemical like antifreeze into the water. Reaching out to home owners explaining the dangers with pool water entering surface water is the best way to resolve the situation. Labeling the storm sewer drain in conjunction with the previously discussed educational programs will drastically reduce the percentage of home owners and business owners that discharge into the MS4. The labeling of the drains with "No Dumping, Drains to Ocean," clarifies that the act is prohibited and that no further treatment will be provided the water before it is discharged to the ocean.

What's Required?

The cost of purchasing a stencil for the storm drains cost on average $25-$30 in addition to purchasing some spray paint. This project, when guided properly, can be conducted through the use of volunteers or interns within the City. As an option, the City staff could also conduct this labeling, though that would likely take away from the current responsibilities of an overtaxed staff given the small staff that exists presently. The measurable goal associated with this task would be to document the number of storm drains that have been labeled.

Element 3a
BMP 01: Storm Sewer Map

The NPDES Phase II permit requires that the municipality must have an updated storm sewer system map. Currently, the City has already completed this task. The map must identify all stormwater conveyance systems, outfalls, and the names and locations of all bodies of water that will be discharge to. The City currently is using CityWorks as an asset management system. Furthermore, the City hired RWA Inc. to conduct the City of Marco Island Master Drainage Plan back in May 2000. The City of Marco Island's Public Works Department also prepared the Drainage System Maintenance Program back in 2012 to outline the maintenance program.

What's New?

The number of outfalls listed and the locations of them was last completed in 2000.

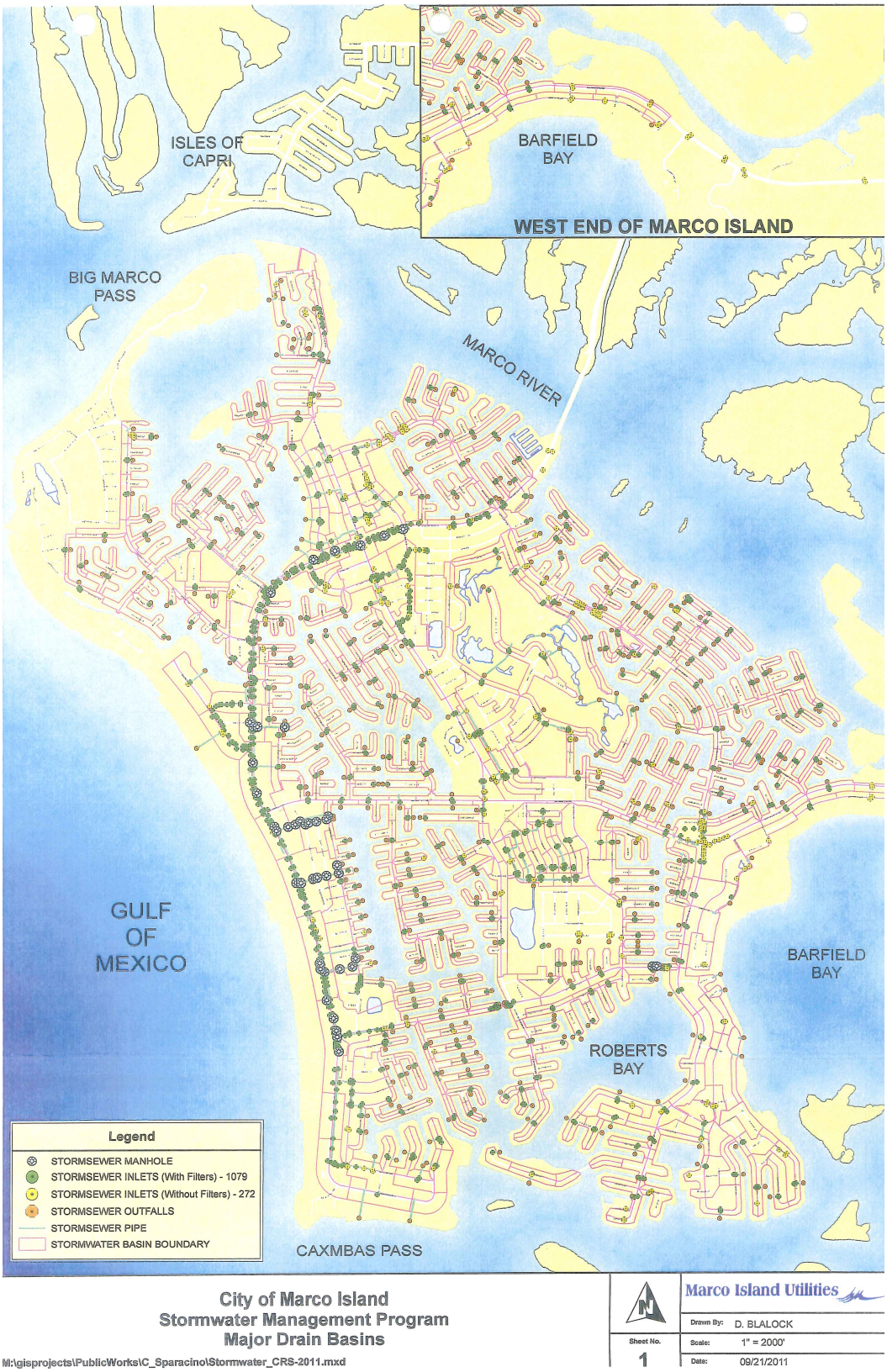

Exhibit 2: Existing Stormwater System Map for the City of Marco Island

From that point, the GIS department is then ultimately responsible for updating the GIS system.

What's Required?

The current GIS system meets the requirements of the NPDES Phase II permit as long as the system is continuously updated. The City may consider increasing the staff number to ensure that proper construction and maintenance records are being kept.

Element 3b
BMP 01: Illicit Discharge Ordinance

As a requirement for the NPDES Phase II permit, the City must have an ordinance or regulatory mechanism that prohibits non-stormwater discharges into the MS4. Currently the City of Marco Island has a regulation in Article II Section 18-36 that reads:

"*No person shall dump any litter in any manner or any amount or pollute any public property, private property, public right-of-way, public street, highway, or body of water. This prohibition shall not be construed as to prohibit the placement of trash or yard wastes for removal by the waste management authority as per subsection (8) of this section."*

Section 18-40 of the same Article specifies the enforcement procedures for dumping:

(a) "*Officers of the city code compliance department are herby empowered to issue written corrective notices and/or notices to appear in misdemeanor court to any person violating the provisions of this article. Officers are further empowered to process these cases from hearing before the city code enforcement board.*

(b) Written corrective notices issued to violators of this article shall state the date observed, the nature of the offense committed, the corrective measures to be taken and the date on or before which such corrections shall be made. If the agent issuing the written corrective notice has reason to believe a violation presents serious threat to the public health, safety or welfare of the public or that the violation is of such a nature as to require immediate correction, the violator may be required by the notice to effectuate immediate corrective measures upon receipt of the notice. The time period allowed for taking corrective measures shall not exceed 20 days. All such notices issued shall be maintained by the issuing authority for public inspection during normal office hours. Notices mailed to the violator's address indicated on the records of the county property appraiser's most current tax roll of such lot or parcel for ad valorem taxation purposes by registered or certified mail, return receipt requested, shall be deemed personal service upon the person for the purpose of this article.

(c) Any person who has been served with such notice in accordance with the provisions of this article, and who neglects or refuses or fails to fully comply with the corrective notices so

ordered and/or to comply within the timeframe so ordered herein, shall be in violation this article."

Furthermore, the City also has Section 30-971 that reads:

"No pollutants will be discharged from the area that will degrade the air, water, or soil below the levels existing at the time of application."

What's New?

The City's existing ordinances as listed above do have the implication that illicit discharge is into the storm sewer system is prohibited. Because this is already in place, it is set to begin in the first year of the permit. The recommendation is to amend the ordinance to specifically mention the prohibition of dumping into the storm sewer system. Additionally, the code in Section 30-971 says "below the levels existing at the time of application" could be problematic given the current impairments of the water. While no TMDL enforcements are existing at this point, the concept of dumping illegally into already impaired waters can be misconstrued that since the water quality is already low, it does not matter what is put in it since it started out poor quality.

What's Required?

As it stands, the existing codes do meet the requirements. If the City chooses to address the wording, the City would have to correspond with City Hall and the City Council to get the code either reworded or altered to some degree. This task is manageable and would not decrease the stormwater budget other than the time required to request the amendment.

Element 3c
BMP 01: Illicit Discharge Inspections

Another requirement for the NPDES Phase II permit is to conduct illicit discharge inspections in the MS4. The City staff is always on the look out for illicit discharge and does look for such problems while conducting their annual stormwater maintenance program.

What's New?

The goal of the Public Works Department was to conduct specific stormwater management system inspections every 6 months; however, due to a limited staff and nearly 2000 inlets alone, the inspections are only completed on an annual basis. Furthermore, the permit sets requirements to have a standard operating procedure for conducting illicit discharge inspections.

What's Required?

The first step in adding this process to the permit would be to develop a standard operating procedure for conducting illicit discharge inspections. Any modifications or updates to this would need to be reported on an annual basis. The Public Works Department currently has a Right-of-Way inspection checklist, which is a simple way to ensure that nothing is missed. If the Public Works Department were to complete something similar to this with a set protocol on how to handle such situations, this would be deemed acceptable for the permit. Given the staffing in the Public Works Department, this could be completed during the first year as long as it did not occur during the very busy rainy season. Further measurable goals would be to document the number of illicit discharge inspections completed and also document the number of illicit discharges identified. Although the permit does not require a certain number of inspections to take place, increasing the staff size would enable the department to meet their specified goal of semi-annual inspections.

Element 3d
BMP 01: Illicit Discharge Public Education Program

The final requirement of the Illicit Discharge Detection and Elimination Minimal Control Measure is to educate employees, businesses, and the general public on the dangers of illicit discharge. The City currently has some information the Public Works website that discusses that "*dumping, spilling, or discharging any non-stormwater materials to any surface area of the stormwater system is prohibited without written approval from the city. Note: this includes emptying of swimming pools in the drainage system."*

What's New?

This program directly connects with the public education programs in the previous sections. The new addition would involve distributing brochures and adding new information to the City's web page. The measurable goal for this includes documenting the number of brochures distributed and also the number of public events that have been conducted to raise awareness. These public outreach programs will educate a large amount of people and also do so without taxing the staff more as this requirement is the same as the Public Outreach events. The City does need to educate their staff members on illicit discharge to ensure that every staff member fully understands the definition and can identify them. The training program for staff members can be conducted in-house or the City may hire an outside company for training as needed.

What's Required?

The educational brochures that will be distributed at public outreach events will cost about $0.25-$0.90 per brochure depending on the design, size, company, and the quantity

ordered. This cost will be incurred as part of the previous section; however, funding for this will need to be planned for. In-house training sessions can have little to no costs. Several training videos and information sources are available online. A staff lunch would also be a good training technique in which the City purchased a simple lunch for the staff and therefore no interruption to the days business will be caused.

Element 4a
BMP 01: Erosion and Sediment Control Ordinance

Often the largest barrier in protecting the life span of municipal stormwater infrastructure is improper maintenance with large amounts of sediment obstructing the stormwater system. Furthermore, large amounts of sediment can be introduced into the MS4 as a result to poorly protected constructions sites. The City of Marco Island currently has Ordinance 02-23, which states:

"All protective barriers shall be installed and maintained for the period of time beginning with the commencement of any phase of land clearing or building operations and ending with the completion of that phase of the construction work on the site, unless otherwise approved to be removed by the community development director's field representative. All protective barriers shall be installed pursuant to the Tree protection manual for Builders and Developers, Division of Forestry, State of Florida or other methods approved by the community development director."

Penalties for noncompliance per the ordinance includes: *"Any person violating any provisions of this code or the conditions of a permit issued here under, and specifically covered in this ordinance, shall constitute a misdemeanor and each protected living, woody plant constituting protective vegetation, removed in violation of this code shall constitute a separate and distinct fine not to exceed $500.00 per violation or by imprisonment in the county jail not to exceed 60 days, or in lieu of the penalties provided by general law for violation of ordinance, the city council may bring injunctive action to enjoin the removal of vegetation in violation of this code."* Further discussion within this ordinance includes a review by the City of Marco Island Code Enforcement Board.

What's Required?

As written, the above ordinance does cover the need to have protective barriers installed at construction sites. However, this ordinance may be reworded to more specifically fit the needs of the NPDES Phase II permit. As a limitation, the City's has few regulatory mechanisms to control construction sites. It is recommended that the Public Works Department in conjunction with the Building Department and City Council; consider implementing a stronger policy regarding construction site protection. Such a goal would strengthen their commitment to the NPDES Phase II permit and also reduce the amount of

sediment that will contribute to obstructing the stormwater management system. In accordance with policy, any changes to the ordinance or code would be required to notify the public. The measurable goal for this would require documenting any changes or additions to the ordinance.

Element 4b
BMP 01: Erosion and Sediment Control

This element is similar to the previous element in the sense that this it is the protocol to develop and implement those requirements set forth in Ordinance 02-23. The City is already conducting right-of-way inspections for all work for which a right-of-way permit is issued. Beyond the right-of-way, the Building Department performs inspections at construction sites. The measurable goal for this BMP is to document the number of construction sites that have obtained permits.

What is Required?

The Public Works Department is currently conducting inspections of construction sites to ensure that proper BMPs are being followed. As this stands, no further action would be needed. An increase in staff in the department would allow for more frequent inspections to take place and provide a stronger follow up to ensure compliance.

Element 4c
BMP 01: Construction Site Waste Control Ordinance

This element requires an ordinance or similar regulatory control to set requirements to control the waste created at construction sites. The City of Marco Island's only rule for construction sites is

"Inert waste materials may be buried on-site provided that such disposal is in conformation with federal, state, and local laws and regulations. Inert waste materials as used herein are specifically limited to brick, block, concrete, rock, stone, earth and sand that is free from contamination and of other types of waste, and that is capable of serving as fill material without environmental harm to, or pollution of, ground waters or surface waters. All other wastes, including garbage, hazardous waste, rubbish, refuse, paper products, containers, cloth, wood and wood products, sweepings, liquids other than water, sludge, tree limbs and trunks, undergrowth, and material produced by clearing and grubbing, and other horticultural wastes, shall not be buried on-site but shall be otherwise lawfully disposed of."

Other than the above ordinance, not other construction site stipulations were located through a search of the City's codes and ordinances. The first measurable goal for this element would be to first create a stronger ordinance with requirements to control waste that affect water quality.

What's New?

First and foremost, the City would need to develop a new construction related ordinance. This ordinance would address topics such as proper litter disposal, concrete truck washout regulations, and the disposal of chemicals. The measurable goals would be to create the ordinance, implement the ordinance, and then document any changes to this ordinance. The timeframe for this is to work on developing the ordinance during the first year, then implement it in year two to allow for time to get the ordinance approved by the City Council.

What's Required?

This BMP is cost effective, however, would entail the Public Works Department working closely with the Building Department to not only introduce this ordinance but also follow up with inspections. Because construction inspections are already occurring, this would not necessarily require any additional staffing. The public would need to be notified of the new/amended ordinance following the existing public notification procedures.

Element 4d
BMP 01: Site Plan Review

The NPDES Phase II permit requires that a site plan review to be conducted on all plans submitted for permitting. The purpose of is process is to enable the City to consider and assess the possible impacts to water quality. Currently, the City of Marco Island is already conducting site plan reviews for all development and re-development projects. City Ordinance 01-37 establishes a new site plan development and site improvement plan standards and regulations that supersede those developed by Collier County. Per this Ordinance:

"Water management master plan or stormwater provisions and designs on the property, considering adverse impacts on adjacent and nearby properties and the consequences of such water management master plan or stormwater discharges on overall city drainage capacities within and external to private and public drainage easements and alley and road right-of-way. Water management areas shall be required to be maintained in perpetuity by the property owner or assigned legal entity(ies) according to the approved plans. Water management areas not maintained shall be corrected according to approved plans within 30 days.

What's Required?

The City of Marco Island is already in compliance with this requirement. The site plan review process is deemed sufficient so long as the City considers the water quality in this. Due to State and Federal regulations, water quality is typically encompassed in the stormwater design to meet the requirements of those permits.

Element 4e
BMP 01: Public Complaints, Comments, and Feedback

The City of Marco Island currently hosts a city directory on their website that gives the appropriate phone numbers and email addresses for City staff. After interviews with staff members, the most complaints and comment received by the Public Works Department occurs during the rainy season between June through September. During this time period, an average of 5-20 phone calls will be received by the Public Works Department in a single day. To address these complaints, the Public Works Department will continue to investigate the complaints. The existing contact information is sufficient to meet the requirements of the NPDES Phase II permit.

What's Required?

No changes are being made to this program as it currently meets the permit requirements. On an annual basis, the number of complaints received, number of investigations related to the complaints, and any changes to the feedback methods will be reported. The purpose for documenting the changes to the feedback methods is to not only determine the preferred contact method of the public, but also to see if the information that is being promoted and distributed is helpful at educating and reducing the number of concerns/complaints. Ideally, properly educating the public so they can understand the process and understand more of the stormwater management then there will be fewer complains and misunderstandings.

Element 4f
BMP 01: Construction Site Inspections

Construction site inspections are a required element of the of the NPDES Phase II permit. The City of Marco Island is currently conducting construction site inspections for all new development and re-development. During these inspections, the site is observed for the requirements of Ordinance 01-37 to ensure that the proper barriers are being used to limit any sediment from entering into the storm sewer system. Furthermore, the inspector is also checking to make sure all Best Management Practices are being followed throughout the construction period. The measurable goals associated with this includes documenting the number of construction site inspections completed, documenting the number of violations that

have occurred, and also documenting the number of follow-up visits that have taken place if a violation was noticed. Because this is already a practice for the Public Works Department, the schedule for implementation will be immediate.

What's Required?

As previously mentioned, construction site inspections are already taken place. This is linked to the previous elements in this section and would thereby be slightly altered once the future construction ordinances are added for waste control.

Element 5: This section is not required for the City of Marco Island. The rules set forth by the FDEP allow for a qualified alternative program to replace this section. As recognized by the FDEP as a qualified alternative program, MS4s operated in the South Florida Water Management District may use Rule 40E-4, F.A.C., Surface Water Management to qualify.

Element 6a
BMP 01: Street Sweeping

Street sweeping is an excellent way to reduce the amount of pollutants that enter into the MS4. The City of Marco Island is currently utilizing a street sweeping program. The current program involves sweeping the bike lane and major intersections on a once a month basis. Busy streets are also swept periodically, but the focus is on bike lanes due to the danger associated with bicycles running over rocks. The bike lanes are swept by the Public Works Department and the larger projects are completed by an outside agency.

What's New?

The street sweeping is designed to both keep the roadway clear and safe, but also to minimize the amount of debris that can enter into the MS4. The key to street sweeping is to remove the sediment, trash, and debris from the roadway and dispose of in a proper location. Street sweeping debris could be disposed of at a landfill or can be used as fill material as long as the location is not near surface water. Aside from the aesthetic and road/pedestrian safety, the debris on the roadway is filled with heavy metals and pollutants. Essentially every time a driver applies their brakes in their automobile, metals from the break pads are released onto the roadway. By simply pushing the sediment into the adjacent swales, the metals then enter the MS4 and enter into the ocean. Swales do provide some removal, but not enough to eliminate all of the metals. Investing in a new street sweeping machine would cost $60,000-$160,000 for a new machine. The removal efficiency depends on the type of street sweeping machine that is utilized (See Table 1). The current street sweeping practices of the City of Marco Island are

making a difference, but the difference can be greatly improved. The more sediment that is removed before entering into the MS4, the less maintenance that will be required, the system can have a longer useful life, and also the water quality will be improved. If the City decides to increase their street sweeping practices, they could subcontract out the work or choose to purchase another machine (if needed, depending on the quality of the existing machine). The measurable goals would include documenting how many miles have been swept and the amount of trash and debris that has been collected.

Table 1: Street sweeping pollutant removal efficiencies

Pollutant	Mechanical Street Sweeper Efficiency (%)	Vacuum-assisted Sweeper Efficiency (%)
Total Solids	55	93
Total Phosphorus	40	74
Total Nitrogen	42	77
COD	31	63
BOD	43	77
Lead	35	76
Zinc	47	85

Source: NVDPC 1992

Element 6a
BMP 02: Storm Sewer System Vacuuming

The Public Works Department currently utilizes their vac truck to vacuum out the stormwater inlets and pipes on an annual basis. This process removes sediment and debris from the inlet structures. This process is completed prior to the beginning of the rainy season to ensure that all pipes are ready to handle the immense rainfall. The measurable goals would to be do document the number of inlets/basins that have been vacuumed and also document the amount of debris that has been removed from each inlet.

What's Required?

The vac truck is currently owned by the City of Marco Island and can therefore be used more than once per year. With flooding a current problem in Marco Island during the summer months, an increased staff would allow for more use of the vac truck and thereby assist with the flooding problems.

Element 6a
BMP 03: Storm Sewer System Maintenance

The storm sewer system is being maintained on an annual basis that provides general maintenance to the system. Due to the small staff size and funding limitations, the Public Works Department cannot tackle pipe replacement and repairs that are not an emergency or are not already part of their Capital Improvement Program (CIP). Each CIP covers five years, so if a project occurs that would improve drainage of correct an existing problem, it is often difficult to find funding or manpower for completion. Furthermore, many of the projects are subcontracted out and will therefore incur a larger cost to complete them. The measurable goals associated with this would be to document and report the number of MS4 components that have been cleaned and the amount of debris removed during routine maintenance.

What's Needed?

The staff is working tirelessly to keep up with the projects that are delegated to the Public Works Department. An increase in staff and an increase in funding would greatly increase the amount of projects that the department could resolve. With greater funding, the department could purchase a swale grading machine or an excavator that would be a key piece of equipment. The most common drainage issue within Marco Island is due to the need to grade swales to allow the stormwater to be conveyed to the outfall. In short, the more equipment and staff the department has, the fewer projects that will need to be subcontracted out at a higher cost to the City. To further improve the efficacy of the stormwater maintenance protocols would be to identify a user-friendly asset management program. The City has changed their program a few times trying to find one that has good results for reasonable cost. In addition to a long-term, user-friendly program, the department could utilize new staff members to be able to properly and promptly enter in updated maintenance records.

Element 6a
BMP 04: Recycling Program

The recycling program is currently underway in the City of Marco Island. The City provides curbside pickup of recyclables as well as the a nearby drop-off center operated by Collier County. The drop-off facility will take tires, oil, antifreeze, and other dangerous chemicals for no charge. This positive program gives residents an easy and free way to dispose of their waste in proper manner. By using this program, it decreases the amount of illegal discharges that could occur if these services did not exist. No changes are currently recommended for this program as it becomes part of the NPDES Phase II permit. With assistance from some of the other elements within the NPDES Phase II permit, hopefully the recycling center will show increase in usage. This public outreach will notify those residents that may not be aware of the program.

Element 6a
BMP 05: Grate Inlet Skimmer Boxes

The City of Marco Island has also made strides in improving the quality of the stormwater by using Grate Inlet Skimmer Boxes from Suntree Technologies in a large percentage of their inlet structures. These inlets are cleaned on an annual basis and remove sediment from the stormwater. The inlets also contain carbon to as an adsorption technique to remove hydrocarbons from the water. The grate is reusable, thus offers a sustainable method to improve the water quality. The inlet filters have varying size screen to remove debris and particulates, but also features a bypass opening to allow stormwater to pass through at a fast rate to reduce any chance of flooding. The measurable goal is to document the number of inlets that have filters in them and also the amount of debris removed by the filter.

What's Required?

The program is working extremely well so far for the Public Works Department. The goal of the department is to place a filter in every inlet. A few filters are purchased when some funding is available. With a larger stormwater budget, the Public Works Department could install these filters in every inlet on the island. According to recent interviews with the Public Works Department staff, approximately 1500-1800 inlets are maintained on an annual basis. The City is still lacking a few hundred Grate Inlet Skimmers in order to cover all of the inlets.

Element 6a
BMP 06: City of Marco Island Facility Inspections

In addition to ensuring that residents and businesses are complying with NPDES permit requirements, the City must also verify that their structures are in compliance. This element would require completing at least annual inspections on the City's facilities. Currently, the City does not have an enclosed facility to store much of their equipment. Should funding be provided for this, the new buildings would be easier to inspect and maintain more so than an open storage facility.

What's Required?

The first step would be to create inspection forms similar to those used for the SOP for stormwater inspections. The staff would also need to be properly trained for inspections if they are not already trained in this area. This training could be completed in a short amount of time and as needed for new employees.

Element 6b
BMP 01: Employee Spill Prevention/Hazardous Materials Training

Training the staff of the City of Marco Island is a key way to optimize the results. The NPDES Phase II permit requires the use of training material to educate employees to try to reduce stormwater pollution. By implementing an Employee Spill Prevention or Hazardous Material training sessions, the City can properly educate their staff on relevant topics. As with the other training methods previously mentioned, this training can be completed in-house or the city can opt to hire an outside training agency. The measurable goals would be to document the number of training sessions and also the number of employees in attendance. This is set to take effect during the second year with a light training program. The Public Works Department can then determine how many more training sessions would be beneficial for them.

Element 6b
BMP 02: Fleet Maintenance

Similar to the previous element, preventing the spilling of dangerous chemicals is critical to protecting the water quality. The City owns large equipment such as City vehicles, vacuum truck, street sweeper, tractors, etc. These fleet items require general maintenance. Educating the staff members on proper maintenance techniques and proper disposal of the fluids is critical. The EPA and FDEP, among other websites, have an abundance of training material available. The measurable goals for this include documenting the maintenance schedule for the fleet and also documenting the any changes to the fleet maintenance program.

What's Required?

The fleet is currently being serviced and maintained on a routine basis. The oil is disposed of through a local mechanic shop. Another key piece of maintenance that is being missed is the proper storage of the equipment. Currently, the Public Works Department does not have a shelter for their boat, machines, etc. Maintenance efforts are conducted in an open areas where chemicals are more likely to be spilled and enter into the MS4. In addition, the extra wear and tear on the equipment from sun and rain is drastically reducing the useful life of expensive equipment. Proper shelter is recommended for such equipment.

Element 6b
BMP 03: Erosion and Sediment Control Inspection Training

The small size of the Public Works Department requires the staff to work closely with one another and to be a versatile group. Knowledge is power and the more training the staff receives, the better and faster they can perform.

What's Required?

Two of the five staff members currently have stormwater inspection certifications. There are a variety of different certifications that can be achieved; all with slightly varying topics and fees. Many classes are currently offered in Southwest Florida and only last one or two days. With research, a free version of the class was located. Other classes, such as from the Florida Stormwater Associations, were approximately $200 per person. The measurable goal would be to identify how many staff members were certified during a given year. For this particular element, the City does not necessarily need to do this every year. For instance, the Public Works Department could train all staff members in year 1 and then not have any new members to train during the following years. They could also opt to train them periodically over time, or even delay this process until year 5. It is also not a requirement to train all of the Public Works Department staff members as part of the NPDES Phase II permit.

Ease of Implementation

Appendices A and B summarize the implementation schedule for the NPDES Phase II permit. The majority of the NPDES components are assigned to be carried out within the first year. Although this might seem challenging, particularly for a department that is lightly staffed, the Public Works Department is already doing most of these elements. That in of itself is impressive for such a small department. Within year 1, the only items that are not in use include utility inserts and a waste control ordinance. The illicit discharge inspections are taking place; however, the Department needs for formally produce a standard operating procedure for them. Another formalization that will be implemented is to document the fleet maintenance schedule. This will not only strengthen the maintenance schedule, but also show an interdepartmental commitment to preventing pollution within the department and the city. Once that task is completed, it will be considered complete for the duration of the five year permit period. Information on illicit discharge is available on the City's website, the next step is to make that information readily available for those that do not use the internet as a common source of information. Overall, with a little assistance and support from the City Council, the Public Works Department should not have any issues implementing the NPDES Phase II permit.

Other City of Marco Island Programs

The City of Marco Island had many programs already underway that improve both drainage and water quality. Programs that the City has already identified and implemented include:

- Pet Waste Stations: According to the Center for Watershed Protection, the best management plan item that is the most cost effective per pound of both total nitrogen and total phosphorus removed is the use of pet waste stations. The City is already using these around their dog parks and regular city parks. This simple step can drastically reduce the amount of harmful nutrients that enter into waterbodies and is very cost effective.
- Centralized Sewer System: The city has identified the hazards of having septic tanks so close to waterbodies. The City has virtually eliminated septic tanks and implemented a citywide central sewer system. As an unlikely benefit, residents are using the mounds in their front yards that previously housed their septic tanks and installing circle driveways. Because these new driveways are being installed, they are now using the minimum 12in culverts under the driveway, which promotes drainage. Often, a challenge exists getting water in swales past driveways without culverts, thus inadvertently have a positive impact on the City's drainage.
- Project Greenscape: The Environmental Service Department works with Rookery Bay to educate and license landscapers and inform them about the dangers of using fertilizers. This program teaches landscapers the proper use of fertilizer so the amount of nutrients entering into the Gulf, canals, and bays is minimized.
- Beach Clean-up: The City currently has two separate groups that regularly have volunteer days for beach clean-ups. This one of the NPDES Phase II elements as the Public Works Department will join this effort and add the benefit of outfall inspections.
- Water Quality Testing: The Environmental Services Department is currently conducting water quality testing post their installation of the public sewer system. This program was designed to monitor the water quality in the canal system to observe improvements as a result of abandoning septic systems.
- GIS Mapping: The City currently uses GIS to map their stormwater conveyance system. This systems shows all the outfalls and inlets within the MS4.
- Web Page: The City posts information on the environment on the City's webpage. This explains illicit discharge and swale benefits among other topics.
- Street Sweeping: The City utilizes street sweeping to reduce the amount of debris and trash that would ultimately end up in the stormwater management system.
- Stormwater Inspectors: The City has two of the five Public Works Department staff members certified as Stormwater Inspectors. The promotion of education for the staff ensures that City has the strongest staff possible.
- BMP use at Construction Sites: The City requires by ordinance the use of sediment control measures such as silt fences.
- Vacuum Truck: Used to remove debris from the MS4.
- Recycling Program: The City teamed up with Collier County to provide both curbside pickup and a drop-off center. This helps promote recycling and reduces the risk of illicit discharge.
- Grate Skimmer Boxes: Currently installed on many of the MS4 inlets that removes hydrocarbons, debris, and sediment.

Current Capital Improvement Program

Projects listed on the City of Marco Islands website related to drainage include the North Collier Blvd Phase 4 Drainage, Miscellaneous Drainage Outfalls Citywide, Swallow Avenue Drainage Phase 2, the Master Drainage Project Phase 2, and the Amazon Alley Drainage and Parking Project. These projects are planned to occur between FY 2012 through FY 2016. Pipe replacement at the Clifton Waterway Bridge and the work on the Smokehouse Bridge are also recent projects undertaken by the Public Works Department

According to the City of Marco Island's five-year CIP for FY 2015-2019, the Public Woks Department is scheduled to receive $153,300 for their fleet for the FY 2015. Further items relevant to the Public Works Department include funding for bridge repair, drainage improvement projects, roadway improvements, and walkway and pathway improvements. For FY 2015 the breakdown is as follows:

- Bridge Repair or Replacement: $850,000
- Drainage Improvement Projects: $375,000
- Roadway Improvements: $565,000
- Walkways and Pathways: $2,032,266

The total budget for FY 2015 for these classifications was $2,565,845. This breakdown leaves only 20% of the budget for drainage improvements that may influence the NPDES Phase II permit. For the grand total for FY 2015 through FY 2019, the overall funding for drainage problems decreases to approximately 15% of the overall City budget. If funding is not provided through the CIP, then General Funds will need to be used to fund the NPDES Phase II Permit Projects.

Comparison to Other Florida Cities

For comparison purposes, five other cites/towns were analyzed for the size and budget of the Public Works Department and compared to the City of Marco Island (See Table 2). Random cites/towns in Florida were chosen that had populations similar or less than that of the City of Marco Island. The largest population of the group listed in Table 2 is the City of Bartow. The largest budget awarded to the Public Works Department is Cocoa Beach with a budget of $5,611,691. This budget is more than twice the size of the City of Marco Island with a population of 5,290 less than the City of Marco Island. On the contrary, the largest population of the group occurred in the City of Bartow, which coincidentally has the lowest budget. This may be due to a variety of factors such as not requiring a higher budget, financial hardship, or any variety of political or economic factors. Furthermore, the elevation of Bartow is much higher and is land locked as opposed to the other waterfront cities. The average number of Public Works staff number within the five cities/towns polled is approximately 19-20 employees, which is a difference of three times the number of employees with the City of Marco Island.

Table 2: Population, budget, and Public Works staff information for Florida Cities

Location	Population	Public Works Budget ($)	Public Works Staff	Budget: Population Ratio	Population: PW Staff Ratio
Cocoa Beach	11,231	5,611,691.00	26	499.66	431.96
City of Bartow	16,959	1,455,264.00	Unknown	85.81	Unknown
City of Destin	11,119	2,052,835.00	11	184.62	1010.82
Town of Longboat Key	7,082	1,674,434.00	20	236.44	354.10
Village of North Palm Beach	12,348	4,303,066.00	35	348.48	352.80
City of Marco Island	16,521	2,565,845.00	6	155.31	2753.50

The budget available for the Public Works Department as a ratio to the population showed that Cocoa Beach has the largest with almost $500 per person available for the Public Works Department. Bartow was lowest with only $86 per person available for the population to budget ratio. The City of Marco Island ranked the second lowest for available funds per person. With respect to staff number, the Village of North Palm Beach has the most Public Works Department staff members total and also per population ratio. The Town of Longboat Key averages 354 people per one Public Works staff member. The Village of North Palm Beach is a close second with 353 people per Public Works staff member. The City of Marco Island has a ratio of 2,754 people per one Public Works staff member. This is an increase of 2.7 times the next highest staff: population ratio. The data shown in Table 2 is based upon the most recent information for both budget (FY 2014-2015) and the most recent population. The five chosen cities/towns were random based upon similar or less populations. It is important to understand that no further information was gathered on these cities/towns (i.e. Public Works responsibilities, funding opportunities, overall city/town budget, etc.). The purpose of this information is merely to assess any possible challenges the City of Marco Island may face with the acceptance of the NDPES Phase II permit. After review of all available and relevant information, along with staff interviews, the largest concern for proper implementation of the NPDES Phase II elements is the available funding and staff. The cost of installing and maintaining stormwater programs is a costly part of a city's or county's budget. In addition to the cost of installing stormwater management projects, but also the costs for future upkeep and permitting.

Cost to Implement NPDES Phase II Permit Program

The NPDES Phase II permit program is designed to meet the needs of the designated city/county to provide an increase in water quality from stormwater runoff. The steps taken to design the program included analyzing the present conditions and highlighting the programs that already being utilized. Appendix D shows the approximated costs per element for one year for the NPDES program. The estimate assumes that none of the elements are currently in practice, which is not the situation. For example, the street sweeping element (6a 01) is currently being practiced. The City does some street sweeping in-house and then hires an outside company for larger streets. The estimate of $72,504.00 is the estimated cost of the contracted sweeper, City staff pay for using the in-house sweeper, maintenance on the machine, and also extra time for record keeping as part of the NPDES Phase II permit. In this instance, the City may choose to sweep more or less often than in this budget depending on what the current need is. The salary for the staff to operate the internal street sweeping machine is already figured into the budget (providing no additional staff is brought in). Because street sweeping is already taking place and therefore part of the budget, it was logical to incorporate the street sweeping into the NPDES program. Another high cost element is item number 6a 05– Grate Inlet Skimmer Boxes. This is another program that is being utilized already by the City. The City uses any additional money from the stormwater budget to purchase new Grate Inlet Skimmer Boxes for the remaining storm drains that are not filtered. The huge asset of the filters make the financial commitment well worth it and the City has purchased a large quantity of filters to date. In addition to the purchase of the filters, the carbon boom must be replaced at a minimum of once per year. According to information from SunTree, the cost per carbon boom is $25 each, with the City of Marco Island having about 1800 storm inlets per interviews with City staff. The EPA estimates that the average yearly cost of the NPDES Phase II Permit is approximately $9 per household. The estimate provided in Appendix D considers salaries and more material and tools that will be required as part of the estimate. The lowest cost per element is 6a 04– Recycling program. The reason the cost is so low for this element is because the program is operated through Collier County. If operating, building costs, and maintenance costs were incurred through the City of Marco Island then this would be far more expensive. If the current salary costs and the costs of currently utilized programs were not included, the NOI for the City of Marco Island would fall within the range specified by the EPA.

The costs of managing stormwater is a large part of a city's/county's annual budget with a range of $15 to $125 per capita (Visitacion et al. 2009). Because the costs are so high, it is important for municipalities to wisely choice stormwater management practices and ensure that they are working properly. By properly maintaining the stormwater infrastructure, the municipality can save money and protect the environment.

Funding

The Public Works Department and the City of Marco Island always strive to achieve funding that will not impact the public or the annual budget of the City. Funding sources

include the General Fund, Collier County Transportation Grant, SFWMD/BCB Drainage Grant, FDOT grant, Asset Replacement Fund, and CIP Funding. The General Fund is the fund that the City has as part of their annual budget. The Collier County Transportation Grant helps to fund drainage programs, street improvement projects, and bike paths within Collier County. This grant typically covers $400,000 -$1,000,000 annually within Marco Island. The Big Cypress Basin (BCB) is a local board that is part of the South Florida Water Management District and is often used for funding in Marco Island and provides between $200,000-$500,000 annually to drainage and water quality projects. The Asset Replacement Fund provides cash funding for equipment and capital improvement and is appropriated to the 5-year Capital Improvement Projects. The CIP Rollover is made up of funds that were not used in Capital Improvement Projects within the City. Another source of funding is available from the South Florida Water Management District through the Cooperative Funding Program. This program provides funding for local stormwater projects (among others). Funding through this program is geared towards stormwater treatment, restoration projects, water storage and infrastructure, and flood control with water quality benefits. Fortunately, the City of Marco Island is not stranger to grant programs and can hopefully utilize these programs to assist with costs generated through the new NPDES Phase II permit.

Aside from the currently used funding programs that the City of Marco Island is utilizing, a few other options may be available for funding assistance. A possible funding option for the City of Marco Island may be available through the FDEP TMDL Water Quality Restoration Grant. Funding is available to local governments and water management districts. This program requires the application to be submitted any time throughout the year with application reviews taking place in March, July, and November annually. Requirements include:

- project must reduce stormwater pollutant loadings in waterbodies on the verified list of impaired waters
- Be at least at the 60% design phase
- Permitted or permit scheduled for approval by either FDEP or water management district
- Include storm event monitoring to determine the load reduction
- Have completed construction within 3 years
- Applicant must provide 50% of total project costs in matching funds that include at least 25% provided by the local government
- Funding must be used for construction of best management practices, monitoring of reduction loads, or public education.

Eligibility is based on a ranking system including:

- Status of impaired water body
    - Project located in an adopted basin management action plan
    - Project reduces loading to an impaired water body with an adopted TMDL
    - Project reduces loadings to a water body on the adopted verified list of impaired waters
    - Project reduces loadings to a water body on the planning list of impaired waters
    - Project reduces loadings to a water body on the TMDL 1999 consent decree

- Stormwater Load Reduction of the Pollutant of Concern
  - Loads are reduced by 80 to 100%
  - Loads are reduced by 60-79%
  - Loads are reduced by 40-59%
  - Loads are reduced by 20-39%
  - Loads are reduced by 0-19%

C) Percentage of Local Matching Funds
D) Project Cost Effectiveness

More information may be found on the FDEP website http://www.dep.state.fl.us/water/watersheds/tmdl_grant.htm or refer to 62-305 F.A.C. for rules, requirements, and application links.

The South Florida Water Management District also has a similar grant program called the Cooperative Funding Program. This program is geared towards helping government agencies, municipalities, utilities, and private organizations with funding for projects that are for stormwater, alternative water supply options, and water conservation projects. Project eligibility includes

- Applicant can be public or private
- Project must comply with applicable laws and regulations
- Applicant must be able to fund the project independent of District funding

The project will be ranked on:

- District Strategic Plan priorities and Regional Water Supply Plan Strategies;
- Environmental, resource, and/or community benefit;
- Cost effectiveness;
- Project Readiness;
- Innovation;
- Separate phase to a previously funded project;
- Past performance; and
- If the project is based in a Rural Economic Development Initiative or Rural Area of Critical Economic Concern community

More information can be found at http://www.sfwmd.gov/portal/page/portal/xweb%20about%20us/cooperative%20funding%20program.

The Environmental Protection Agency has allotted funds through Section 319(h) of the Federal Clean Water Act. The application is through the Florida Department of Environmental Protection's Nonpoint Source Management Section. Projects that are eligible for funding include:

- Demonstration of Best Management Practices;
- Nonpoint pollution reduction in priority watersheds;
- Groundwater protection from nonpoint sources; and

- Public Education programs on nonpoint source management

For more information, please visit http://www.dep.state.fl.us/water/nonpoint/319h.htm

Recommendations

Recommendations are being made to ease the City of Marco Island's adoption of the NPDES program. The first recommendation would be to reconsider the budget awarded to the Public Woks department. While the budget is "middle of the road" when compared to the cities/towns in Table 2, the City will ultimately require more funding to execute the NPDES Phase II permit. The elements recommended to meet the requirements of the permit were carefully planned to highlight the programs already in use and then add in elements that will be cost effective and highly effective while also meeting the permit requirements. Despite the planning that went in to the elements, cost will be a burden on the City. Throughout this document, ideas were recommended to reduce the cost to employing the NPDES Phase II program. Another recommendation that is related to the City's budget is need for more staff. When compared to other Public Works Departments, the number of staff members is far less than any others discovered. The NPDES Phase II permit will further add more work to the department and the addition of more staff member will help take the added pressure off the existing team members. Even with the existing number of staff members, the Public Works Department is welcoming the NPDES program. An increased budge and increased staff will also help with the City's CIP. The budget is often depleted because many tasks must be subcontracted out, which means they are costing the City more money than if the Public Works Department had completed the project in-house. If more projects were completed in-house, more projects can be completed to benefit the City. This is typical spiral effect that further enhance the City. Better stormwater management equals better water quality, which equals compliance with the NPDES Permit. This spiral effect also can be looked at as better stormwater management equals higher property values and more tourism, which equals an increase in revenue for the City.

The City of Marco Island has a unique benefit that many municipalities do not have. They have a City comprised of people that genuinely care about the area. Many other urban areas have a significant problem with illicit discharge. Marco Island, on the contrary, rarely has a problem with illicit discharge. As a general rule, the compliance to codes and ordinances is high. The largest concern with illicit discharge is the emptying of swimming pool water into the MS4. The most beneficial way to reach and educate the public is through a variety of public outreach methods. It is anticipated that simply reaching out using a variety of methods will educate the public. A concern with the stormwater management is the ponding of stormwater in swales. This is two part problem: first the pooling of water is perceived as "flooding" and second, the lack of grading equipment limits the maintenance of the swales that so crucial in transporting the water to their outfalls. By coordinating both information about the effects of swimming pool water on the local waterbodies with providing information of the purpose of swales there is an anticipated decrease in illegal dumping and also a decrease in complaints due

to standing water in the swale system. This also spirals down because the decrease in illicit discharge and complaints will enable the small staff to focus their efforts in other areas. The second problem related to the swales is lack of grading that is completed. Grading is the single most important maintenance method identified by the Public Works staff. If the Public Works Department had the proper equipment to grade the swales, the flooding and ponding would be reduced and for a lower cost than subcontracting this task out. By educating the public, providing more staff, and providing more equipment; the department will better be able to maintain the City's stormwater infrastructure. This spirals down to increasing the useful life of the infrastructure, providing a safer system, increasing the water quality, and being able move beyond being reactive to a position of proactive.

Additional Stormwater Information

In addition to meeting the requirements of the NPDES Phase II permit, the City of Marco Island must also continue to meet the requirements of other issued stormwater permits, such as Environmental Resource Permits, issued by the South Florida Water Management District and the Florida Department of Environmental Protection. Once a permit has been obtained for a project, the City must further continue to meet the requirements of the permit as specified in the permit. These requirements may include testing, inspections, or reporting over a specified timeframe. Appendix D shows a list of Environmental Resource Permits issued to the City of Marco Island over the past 10 years. The list does not cover the ERP's obtained from the Florida Department of Environmental Protection.

Summary

The City of Marco Island has already employed many techniques to provide effective stormwater management and high water quality. Beyond this, the Department also has handled their other responsibilities with great success and quality. The purpose of this document was to address that changes that are coming the City of Marco Island with the addition of the NPDES Phase II permit. The document further discussed the elements associated with the permit and recommendations on how to implement them with the least financial and physical stress on the City. The new NPDES permit will enhance the public education and outreach, decrease the impacts of construction on water quality, decrease any illicit discharge, and promote good housekeeping methods within the Public Works Department and the City of Marco Island.

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Appendix A:
NPDES Phase II NOI

For FDEP Internal Use Only
Permit ID: FLR ___ ___ ___ ___

NOTICE OF INTENT TO USE GENERIC PERMIT FOR DISCHARGE OF STORMWATER FROM PHASE II MUNICIPAL SEPARATE STORM SEWER SYSTEMS

(RULE 62-621.300(7)(b), F.A.C.)

INSTRUCTIONS:

- This NOI must be completed and submitted to the Department to authorize use of the Generic Permit for Discharge of Stormwater from Phase II Municipal Separate Storm Sewer Systems ("MS4 GP"), provided in Rule 62-621.300(7)(a), F.A.C.
- The type of municipal separate storm sewer system that qualifies for coverage under the MS4 GP and the applicable Phase II MS4 stormwater management program requirements are specified in the permit. You should familiarize yourself with the MS4 GP before completing this NOI.
- Submit this fully completed NOI, permit fee, and required attachments by mail to the address in the box at right. **DO NOT SUBMIT any materials not in the checklist in Section V. of this NOI.**
- **Please print or type information in the appropriate areas below and complete each section.**

Submit NOI, permit fee, and required attachments to:
NPDES Stormwater Notices Center
M.S. #2510
Florida Department of
Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

SECTION I. PHASE II MS4 OPERATOR INFORMATION			
A.	Name of the Phase II MS4 Operator: City of Marco Island		
B.	Name of the Phase II MS4 Responsible Authority: Timothy Pinter, P.E.		
	Title: Public Works Director		
	Mailing Address:50 Bald Eagle Drive		
	City: Marco Island	Zip Code: 34145	County: Collier
	Telephone Number: (239) 389-5018		
C.	Name of the Designated Phase II MS4 Stormwater Management Program Contact: Timothy Pinter, P.E.		
	Title: Public Works Director		
	Department: Public Works		
	Mailing Address: 50 Bald Eagle Drive		
	City: Marco Island	Zip Code: 34145	County: Collier
	Telephone Number: (239) 389-5018		
	E-mail Address: tpinter@cityofmarcoisland.com		
D.	Location of the Phase II MS4 (if different than the mailing address in Section I.C. above): **N/A**		
	Street Address:		
	City:	Zip Code:	County:
E.	Approximate center of the Phase II MS4: Latitude: 25 ° 56 ' 17 " Longitude: 81 ° 42 ' 55 "		
F.	Phase II MS4 ownership status (check one): ☒ Public ☐ State ☐ Federal		
G.	Total resident population of the Phase II MS4: 18,357		
H.	Name of the urbanized area(s) the Phase II MS4 is located within (if applicable): Marco Island		
I.	Name of the Water Management District the Phase II MS4 is located within (check all that apply): ☐ Northwest Florida Water Management District ☐ Southwest Florida Water Management District ☐ Suwanee River Water Management District ☐ St. John's River Water Management District ☒ South Florida Water Management District		

SECTION II. SHARING RESPONSIBILITY

You may rely on another entity to satisfy some or all of your permit obligations if the conditions in Part IX of the MS4 GP are met. Another entity may implement one or more of the measures and/or a component of a measure on your behalf. You may rely on another entity to satisfy all permit obligations (including annual reporting) but only if the entity is permitted under Chapter 62-624, F.A.C. Note the following:

- You will remain responsible for compliance with your permit obligations if the other entity(ies) fails to implement the control measure(s) or a component thereof on your behalf. You must establish a written agreement with the other entity(ies) before submitting this NOI.
- Relying on another entity, or entities, either partially or fully does not preclude you from the obligation to fully complete this NOI, including the information required in Section IV.

A.

1. Has another entity, regulated under Chapter 62-624, F.A.C., agreed to implement all of your permit obligations on your behalf? ☐ Yes ☒ No

If yes, complete Section II.A.2. If no, skip to Section II.B.

2.

Name of Entity: N/A

Contact Name: N/A

Title: N/A

Department: N/A

Mailing Address: N/A

City: N/A	Zip Code: N/A	County: N/A

Telephone Number: N/A

E-mail Address: N/A

B.

1. Has another entity agreed to implement one or more of the minimum control measures (or a component thereof) on your behalf? ☐ Yes ☒ No

If yes, complete Sections II.B.2. and II.B.3. (See the note below for any additional entities)

2. Control measure(s) or component of a control measure to be implemented by the other entity:
N/A

3.

Name of Entity: N/A

Contact Name: N/A

Title: N/A

Department: N/A

Mailing Address: N/A

City: N/A	Zip Code: N/A	County: N/A

Telephone Number: N/A

E-mail Address: N/A

Note: For each additional entity sharing stormwater management program responsibilities with you, provide on a separate sheet the information requested in Sections II.B.2. and II.B.3. Title the sheet "Section II.B: Additional Entities Information" and attach it to this NOI.

SECTION III. RECEIVING WATERS

Identify the named receiving waterbodies to which your Phase II MS4 discharges. Include all such waterbodies known to you at the time of this application:

Collier Bay	Smokehouse Bay	
Marco River/ Factory Bay	Smokehouse Creek	
Gulf of Mexico		
Caxmbas Pass		
Roberts Bay		
Barfield Bay		

SECTION IV. MINIMUM CONTROL MEASURES

A. Complete the Phase II MS4 Stormwater Management Program (SWMP) Elements Form in Appendix A for each minimum control measure described in Part VI. of the MS4 GP, except the Post-construction Stormwater Management in New Development and Redevelopment minimum control measure if you have chosen the qualifying alternative program option for this measure under Part X. of the permit. If you choose, however, to implement BMPs for the Post-construction measure, please complete a SWMP Elements Form for the measure.

Include in the SWMP Elements Form all best management practices (BMPs) currently in place or planned for each element of each minimum control measure. There is no limit to the number of BMPs you may include. Make copies of the form as necessary to accommodate all of your BMPs. The completed forms, in their entirety, will be considered by the Department to be the outline of your proposed stormwater management program. Attach all completed forms to this NOI.

B. Provide the total number of pages of SWMP Elements Forms that are attached to this NOI for each minimum control measure:

Minimum Control Measure	# of Pages
Public Education and Outreach as to Stormwater Impacts	1
Public Involvement/Public Participation	1
Illicit Discharge Detection and Elimination	1
Construction Site Stormwater Runoff Control	2
Post-construction Stormwater Management in New Development and Redevelopment	0
Pollution Prevention/Good Housekeeping for Municipal Operations	2

SECTION V. MATERIALS TO BE SUBMITTED WITH THIS NOI

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

Attached	N/A	
☒		The permit application fee, as prescribed by Rule 62-4.050(4)(d)(6), F.A.C. Make all check and money orders payable to the Florida Department of Environmental Protection.
☒		A fully completed Phase II MS4 Stormwater Management Program Elements Form (see Appendix A) for each minimum control measure except the Post-construction Stormwater Management in New Development and Redevelopment minimum control measure if you have chosen the qualifying alternative program option for this measure under Part X. of the MS4 GP.
☐	☒	Additional entities information, as required under the note in Section II.B. of this NOI.

DO NOT SUBMIT ANY OTHER MATERIALS
(such as your complete Stormwater Management Plan, ordinances, storm sewer map, public outreach, etc.)

SECTION VI. CERTIFICATION STATEMENT AND SIGNATURE

The Responsible Authority listed in Section I.B. of this NOI must sign the following certification statement:[1]

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 Phase II MS4 Responsible Authority (type or print): Timothy Pinter, P.E.

Title: Public Works Director

Signature: Timothy Pinter Date: 02 / 17 / 2015

[1] Signatory requirements are contained in Rule 62-620.305, F.A.C.

INSTRUCTIONS FOR APPENDIX A
PHASE II MS4 STORMWATER MANAGEMENT PROGRAM (SWMP) ELEMENTS FORM

General Instructions

- Complete this form for each minimum control measure described in Part VI. of the Generic Permit for Discharge of Stormwater from Phase II Municipal Separate Storm Sewer Systems ("MS4 GP") provided in Rule 62-621.300(7)(a), F.A.C., except the Post-construction Stormwater Management in New Development and Redevelopment minimum control measure if you have chosen the qualifying alternative program option for this measure under Part X. of the permit. If you choose, however, to implement BMPs for the Post-construction measure, please complete a SWMP Elements Form for the measure.

- Include all best management practices (BMPs) currently in place or planned for each element of each minimum control measure. There is no limit to the total number of BMPs you may include.

- Make copies of the form as necessary to accommodate all of your BMPs.

- The completed forms, in their entirety, will be considered by the Department to be the outline of your proposed stormwater management program. Attach the forms to the NOI and submit to the Department at the address provided on the NOI.

- **Please print or type information in the appropriate areas of this form.**

Section A.I: MINIMUM CONTROL MEASURE

- Indicate which minimum control measure the BMPs in Section A.II. address. Check only one measure. Use a separate form for each measure.

Section A.II: BEST MANAGEMENT PRACTICES

- Include BMPs only for the measure you have identified in Section A.I. The Department encourages the use of the Florida Land Development Manual: A Guide to Sound Land and Water Management (FDER, 1988) and the U.S. Environmental Protection Agency's National Menu of Best Management Practices for Storm Water Phase II in developing Phase II stormwater management programs. Both are available from the Department.

- Element ID: Table 1 below includes all the minimum control measure elements required under Part IV. of the MS4 GP. Using Table 1, identify which element of the minimum control measure each BMP addresses. For example, a BMP addressing the procedures for site plan review under the Construction Site Stormwater Runoff Control Minimum Control Measure would be labeled as "4d." You must include at least one BMP for each element.

- BMP Number: For each minimum control measure, number the BMPs starting with 01 and continue the numbering in sequential order on any additional forms for the measure. The numbering of the BMPs is for reference purposes only and does not provide additional weight to, nor prioritize, one BMP over another.

- Measurable Goals: List the measurable goal(s) for each BMP. You must include at least one measurable goal for each BMP and may include as many as necessary for the BMP – you are not limited to the four lines provided on the form.

- Schedule for Implementation/Completion: For each measurable goal, include the year each action will be implemented and, as applicable, the interim milestones, completion date, or planned frequency of the action.

- Responsible Entity/Department: Include the name of the entity (if other than the Phase II MS4 Operator) or of the internal department (if it is the Phase II MS4 Operator) responsible for implementing or coordinating each BMP.

Page Numbering

- Once this form has been completed for each minimum control measure, place the forms in an order corresponding to the order of the measures in Table 1 (below) and number the forms accordingly at the bottom of each.

Table 1: Minimum Control Measure Required Elements

Element ID	Description of Minimum Control Measure Required Elements
	1. Public Education and Outreach Minimum Control Measure:
1a	**a)** Implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of stormwater discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater runoff.
	2. Public Participation/Involvement Minimum Control Measure:
2a	**a)** Comply with State and local public notice requirements when implementing a public involvement/public participation program.
	3. Illicit Discharge Detection and Elimination Minimum Control Measure:
3a	**a)** Develop, if not already completed, a storm sewer system map, showing the location of all known outfalls and the names and location of all surface waters of the State that receive discharges from those outfalls.
3b	**b)** To the extent allowable under State or local law, effectively prohibit through ordinance, or other regulatory mechanism, of non-stormwater (i.e., "illicit") discharges into the storm sewer system and implement appropriate enforcement procedures and actions.
3c	**c)** Develop and implement a plan to detect and eliminate non-stormwater discharges, including illegal dumping, to the MS4.
3d	**d)** Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.
	4. Construction Site Stormwater Runoff Control Minimum Control Measure:
4a	**a)** Develop and implement, to the extent allowable under State or local law, an ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions to ensure compliance, to reduce pollutants in any stormwater runoff to the Phase II MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. Reduction of pollutants associated with stormwater discharges from construction activity disturbing less than one acre must also be included if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more.
4b	**b)** Develop and implement requirements for construction site operators to implement appropriate erosion and sediment control best management practices.
4c	**c)** Develop and implement requirements for construction site operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality.
4d	**d)** Develop and implement procedures for site plan review that incorporate consideration of potential water quality impacts.
4e	**e)** Develop and implement procedures for receipt and consideration of information submitted by the public.
4f	**f)** Develop and implement procedures for site inspection and enforcement of control measures.
	5. Post-construction Stormwater Management in New Development and Redevelopment Minimum Control Measure: NOT REQUIRED IF USING QUALIFIED ALTERNATIVE PROGRAM
5a	**a)** Use an ordinance or other regulatory mechanism, to the extent allowable under State or local law, to address from post-construction runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, that discharge into the Phase II MS4. The program must require that controls be in place that would prevent or minimize water quality impacts from new development or redevelopment.
5b	**b)** Develop and implement strategies that include a combination of structural and/or non-structural best management practices (BMPs) appropriate for the community.
5c	**c)** Require adequate long-term operation and maintenance of BMPs.
	6. Municipal Operation Pollution Prevention and Good Housekeeping Minimum Control Measure:
6a	**a)** Develop and implement an operation and maintenance program that has the ultimate goal of preventing or reducing pollutant runoff from MS4 operator activities, such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance.
6b	**b)** Using training materials that are available from EPA, the Department, or other organizations, include employee training to prevent and reduce stormwater pollution from MS4 operator activities.

APPENDIX A
PHASE II MS4 STORMWATER MANAGEMENT PROGRAM (SWMP) ELEMENTS FORM

SECTION A.I. MINIMUM CONTROL MEASURE (check only one)

☒ 1. Public Education and Outreach	☐ 3. Illicit Discharge Detection/Elimination	☐ 5. Post-construction Stormwater Management (optional)
☐ 2. Public Involvement/Participation	☐ 4. Construction Site Stormwater Runoff Control	☐ 6. Pollution Prevention/Good Housekeeping

SECTION A.II. BEST MANAGEMENT PRACTICES (BMPs) For The Minimum Control Measure Identified In Section A.I. Of This Form

Element ID	BMP Number	A Description of BMP	B Measurable Goal(s)	C Schedule for Implementation/Completion	D Responsible Entity/Department
— 1a	01	**City Stormwater Information Website** City utilized web page with stormwater management information, pollution prevention, and educational material. The material will be geared towards a variety of age groups and provide information explaining the NPDES MS4 program.	**1.** Document the number of web page visits **2.** Document and report the number of web page updates with more material, provide helpful links, and printable documents	**1.** Years 1-5 **2.** Years 2-5	Public Works Department
— 1a	02	**City Participation at Local Events** Reach out to residents at local annual events. During these events, brochures will be distributed with education material on pollution prevention and the NDPES MS4 Phase II program.	**1.** Document the number of events attended **2.** Document the number of brochures handed out	**1.** Years 3-5 **2.** Years 3-5	Public Works Department
— 1a	03	**New Homeowner Packets** Informational packets delivered to new residents in Marco Island. Material will discuss the NDPES program, pollution prevention, contact numbers for stormwater questions or comments, and information on the City's recycling program.	**1.** Document the number of packets that were distributed for the year	**1.** Years 2-5	Public Works Department
— 1a	04	**Utility Inserts** Information sheets to be added to utility bills that cover public education on stormwater issues, fact sheets, and updates on City codes. This material will serve as valuable tool to reach out to the public regarding stormwater topics.	**1.** Document the number of inserts that were distributed	**1.** Years 1-5	Public Works Department

Page # 1 of 7 total pages of SWMP Elements Forms attached to the NOI

APPENDIX A

PHASE II MS4 STORMWATER MANAGEMENT PROGRAM (SWMP) ELEMENTS FORM

SECTION A.I. MINIMUM CONTROL MEASURE (check only one)

☐ 1. Public Education and Outreach	☐ 3. Illicit Discharge Detection/Elimination	☐ 5. Post-construction Stormwater Management (optional)
☒ 2. Public Involvement/Participation	☐ 4. Construction Site Stormwater Runoff Control	☐ 6. Pollution Prevention/Good Housekeeping

SECTION A.II. BEST MANAGEMENT PRACTICES (BMPs) For The Minimum Control Measure Identified In Section A.I. Of This Form

Element ID	BMP Number	A Description of BMP	B Measurable Goal(s)	C Schedule for Implementation/Completion	D Responsible Entity/Department
— 2a	01	**Public Involvement in Meetings** Involve the public in more Council meetings/workshops to gain public input specifically to the NDPES MS4 program, allow the public to take part in decisions related to ordinances, and address concerns of the community.	**1.** Document the number of notifications informing the public on upcoming meetings **2.** Document the number of attendees at the meetings.	**1.** Years 1-5 **2.** Years 1-5	Public Works Department
— 2a	02	**Beach Clean-Up/ Outfall Monitoring Program** The City of Marco Island will partner with Friends of Tigertail Beach and/or the Beach Advisory Committee to coordinate beach clean-ups with volunteers. Not only will this prevent trash from entering the water, but the new partnership will also allow for outfall monitoring to assist with the current stormwater inspections	**1.** Document the number of volunteers that participated. **2.** Document the number of beach clean-ups that have taken place. **3.** Document the amount of trash collected from the beach clean-up **4.** Document the number of outfall problems that have been identified through this program	**1.** Years 2-5 **2.** Years 2-5 **3.** Years 2-5 **4.** Years 3-5	Public Works Department
— 2a	03	**Labeling of Storm Sewer Drains** The City will coordinate with volunteers to label storm sewer drains with a "No Dumping Drains to Ocean" sign on drains.	**1.** Document the number of storm sewer drains labeled. **2.** Document and report the number of attendees.	**1.** Years 3-5 **2.** Years 3-5	Public Works Department
—					

Page # 2 of 7 total pages of SWMP Elements Forms attached to the NOI

APPENDIX A
PHASE II MS4 STORMWATER MANAGEMENT PROGRAM (SWMP) ELEMENTS FORM

SECTION A.I. MINIMUM CONTROL MEASURE (check only one)

☐ 1. Public Education and Outreach	☒ 3. Illicit Discharge Detection/Elimination	☐ 5. Post-construction Stormwater Management (optional)
☐ 2. Public Involvement/Participation	☐ 4. Construction Site Stormwater Runoff Control	☐ 6. Pollution Prevention/Good Housekeeping

SECTION A.II. BEST MANAGEMENT PRACTICES (BMPs) For The Minimum Control Measure Identified In Section A.I. Of This Form

Element ID	BMP Number	A Description of BMP	B Measurable Goal(s)	C Schedule for Implementation/Completion	D Responsible Entity/Department
— 3a	01	**Storm Sewer Map** The City has a storm sewer system map as part of their Geographic Information System and Asset Management System updated through 2012. This data depicts all stormwater conveyance systems, outfalls, and bodies of water. The systems will be updated on an annual basis as needed.	**1.** Document the number of outfalls existing **2.** Document any changes to the map	**1.** Years 1-5 **2.** Years 1-5	Public Works Department Information Technology
— 3b	01	**Illicit Discharge Ordinance** The existing requirement in Article II, Section 18-36 prohibits the discharge of any material in any body of water that can result in a threat to public health, safety, or welfare of the public. This rule will be modified to strengthen the enforcement.	1. Document any changes to the City Code **2.** Document the number of citations issued	1. Year 1 2. Years 1-5	Public Works Department
— 3c	01	**Illicit Discharge Inspections** The City will continue to inspect all stormwater systems prior to rainy season. The City will implement a SOP for illicit discharge inspections and continue to accept complaints and comments through their hotline to address discharge complaints.	**1.** Develop a SOP for illicit discharge inspections and update as needed **2.** Document the number of inspections completed **3.** Document the number of complaints investigated 4. Document the number of illicit discharges identified	1. Years 1-5 **2.** Years 1-5 **3.** Years 1-5 4. Years 1-5	Public Works Department
— 3d	01	**Illicit Discharge Public Education Program** The program will supply educational material to the public about illegal discharges including examples and the environmental effects through brochures and the City web page. The program will reach out to the public, businesses, and employees.	1. Document the number of brochures distributed **2.** Document the number of events to raise awareness pertaining to illicit discharges	1. Years 1-5 2. Years 3-5	Public Works Department

Page # 3 of 7 total pages of SWMP Elements Forms attached to the NOI
APPENDIX A
PHASE II MS4 STORMWATER MANAGEMENT PROGRAM (SWMP) ELEMENTS FORM

SECTION A.I. MINIMUM CONTROL MEASURE (check only one)

☐ 1. Public Education and Outreach	☐ 3. Illicit Discharge Detection/Elimination	☐ 5. Post-construction Stormwater Management (optional)
☐ 2. Public Involvement/Participation	☒ 4. Construction Site Stormwater Runoff Control	☐ 6. Pollution Prevention/Good Housekeeping

SECTION A.II. BEST MANAGEMENT PRACTICES (BMPs) For The Minimum Control Measure Identified In Section A.I. Of This Form

Element ID	BMP Number	A Description of BMP	B Measurable Goal(s)	C Schedule for Implementation/Completion	D Responsible Entity/Department
— 4a	01	**Erosion and Sediment Control Ordinance** Ordinance 02-23 requires the use of erosion and sediment control at construction sites. This ordinance mandates protective barriers be installed and maintained throughout the entire construction process. Penalties and fees have been established to ensure compliance.	**1.** Document any changes or amendments to the ordinance	**1.** Years 1-5	Public Works Department
— 4b	01	**Erosion and Sediment Control** The City requires erosion and sediment controls for all construction sites per Ordinance 02-23. This requires the proper use and maintenance of protective barriers.	**1.** Document and report the number of active construction sites operating with erosion and sedimentation control requirements.	**1.** Years 1-5	Public Works Department
— 4c	01	**Construction Site Waste Control Ordinance** The City will establish an ordinance to mandate the proper disposal of waste from construction sites including: litter, concrete truck washout regulations, and the disposal of chemicals.	**1.** Create an ordinance with requirements to control waste that affect water quality **2.** Implement the ordinance **3.** Document any changes/amendments to the ordinance **4.** Report the number of active construction sites operating with waste control	**1.** Year 1 **2.** Year 2-5 **3.** Years 3-5 **4.** Years 3-5	Public Works Department
— 4d	01	**Site Plan Review** Ordinance 01-37 requires a site plan review that incorporates consideration of potential water quality impacts. This ordinance mandates BMPs be implemented and meet the requirements of the City, State, and Federal agencies.	**1.** Document the number of site plans that were reviewed for water quality impacts. **2.** Document and report the number of site plans approved	**1.** Years 1-5 **2.** Years 1-5	Public Works Department
— 4e	01	**Public Complaints, Comments, and Feedback** The City currently utilizes an existing hotline through the Public Works Department. This will be combined with the updated City web page to further reach the public and address construction concerns.	**1.** Document the number of complaints and comments received **2.** Document the number of investigations and responses to complaints **3.** Document any changes to the feedback methods	**1.** Years 1-5 **2.** Years 1-5 **3.** Years 1-5	Public Works Department

Page # 4 of 7 total pages of SWMP Elements Forms attached to the NOI

DEP Form 62-621.300(7)(b), May 1, 2003

APPENDIX A
PHASE II MS4 STORMWATER MANAGEMENT PROGRAM (SWMP) ELEMENTS FORM

SECTION A.I. MINIMUM CONTROL MEASURE (check only one)

☐ 1. Public Education and Outreach	☐ 3. Illicit Discharge Detection/Elimination	☐ 5. Post-construction Stormwater Management (optional)
☐ 2. Public Involvement/Participation	☒ 4. Construction Site Stormwater Runoff Control	☐ 6. Pollution Prevention/Good Housekeeping

SECTION A.II. BEST MANAGEMENT PRACTICES (BMPs) For The Minimum Control Measure Identified In Section A.I. Of This Form

Element ID	BMP Number	A Description of BMP	B Measurable Goal(s)	C Schedule for Implementation/Completion	D Responsible Entity/Department
— 4f	01	**Construction Site Inspections** Conduct inspections of construction sites to ensure erosion and sediment control regulations are being followed as per Ordinance 01-37. Inspections will also include proper stormwater management and the proper use of Best Management Practices.	**1.** Document the number of construction site inspected **2.** Document the number of violations that have occurred **3.** Document the number of follow-up visits that have taken place after violations have been found	**1.** Years 1-5 **2.** Year 1-5 **3.** Years 1-5	Public Works Department
—					
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—					

Page # 5 of 7 total pages of SWMP Elements Forms attached to the NOI

APPENDIX A
PHASE II MS4 STORMWATER MANAGEMENT PROGRAM (SWMP) ELEMENTS FORM

SECTION A.I. MINIMUM CONTROL MEASURE (check only one)

☐ 1. Public Education and Outreach	☐ 3. Illicit Discharge Detection/Elimination	☐ 5. Post-construction Stormwater Management (optional)
☐ 2. Public Involvement/Participation	☐ 4. Construction Site Stormwater Runoff Control	☒ 6. Pollution Prevention/Good Housekeeping

SECTION A.II. BEST MANAGEMENT PRACTICES (BMPs) For The Minimum Control Measure Identified In Section A.I. Of This Form

Element ID	BMP Number	A Description of BMP	B Measurable Goal(s)	C Schedule for Implementation/Completion	D Responsible Entity/Department
——		**Street Sweeping**	**1.** Document how many miles have been swept	**1.** Years 1-5	Public Works Department
6a	01	The City will continue their street sweeping program as method to minimize trash and pollutants from entering into the stormwater system. In the future, the City will implement a more stringent street sweeping program	**2.** Document how much trash and debris has been collected	**2.** Years 1-5	
——		**Storm Sewer System Vacuuming**	**1.** Document the number of the inlets/basins that have been vacuumed or repaired	**1.** Years 1-5	Public Works Department
6a	02	The City will continue to utilize its vac truck to clean debris from storm sewer inlets and basins. This method is used in conjunction with the storm sewer maintenance and inspections to ensure proper functioning	**2.** Document the amount of debris that has been removed from the inlets/basins	**2.** Years 1-5	
——		**Storm Sewer System Maintenance**	**1.** Document the number of components that have been cleaned	**1.** Years 1-5	Public Works Department
6a	03	The storm sewer system will continue to be properly cleaned and maintained to ensure that all broken pipes and components are fixed in a timely manner	**2.** Document the amount of debris removed from the storm sewer system	**2.** Years 1-5	
——		**Recycling Program**	**1.** Document how much waste is being dropped off	**1.** Years 1-5	Public Works Department Collier County
6a	04	The city currently has a curbside pickup program for recyclables as well as a local drop off facility that accepts paper, metal, waste oil, antifreeze, batteries, and other harmful wastes for no charge			
——		**Grate Inlet Skimmer Boxes**	**1.** Document the number of inlets that have filters in them	**1.** Years 1-5	Public Works Department
6a	05	The City currently uses Suntree Technologies, Inc. Grate Inlet Skimmer Boxes in some of the stormwater inlets. These skimmer boxes capture hydrocarbons, sediment, litter, and debris.	**2.** Document the amount of debris that is removed by the filters	**2.** Years 1-5	

Page # 6 of 7 total pages of SWMP Elements Forms attached to the NOI

APPENDIX A

PHASE II MS4 STORMWATER MANAGEMENT PROGRAM (SWMP) ELEMENTS FORM

SECTION A.I. MINIMUM CONTROL MEASURE (check only one)

☐ 1. Public Education and Outreach	☐ 3. Illicit Discharge Detection/Elimination	☐ 5. Post-construction Stormwater Management (optional)
☐ 2. Public Involvement/Participation	☐ 4. Construction Site Stormwater Runoff Control	☒ 6. Pollution Prevention/Good Housekeeping

SECTION A.II. BEST MANAGEMENT PRACTICES (BMPs) For The Minimum Control Measure Identified In Section A.I. Of This Form

Element ID	BMP Number	A Description of BMP	B Measurable Goal(s)	C Schedule for Implementation/Completion	D Responsible Entity/Department
6a	06	**City of Marco Island Facility Inspections** Inspections of City facilities will take place to ensure that materials hazardous to water are properly contained.	**1.** Document the number of inspections completed	**1.** Years 2-5	Public Works Department
6b	01	**Employee Spill Prevention/ Hazardous Materials Training** The City will conduct spill prevention training and hazardous material training to teach staff members methods to reduce the stormwater pollution through proper handling and disposal of dangerous materials.	**1.** Document the number of training sessions **2.** Document the number of employees trained	**1.** Years 2-5 **2.** Years 2-5	Public Works Department
6b	02	**Fleet Maintenance** This program will provide extra training for staff members on the proper maintenance protocols for City vehicles and equipment. This will focus on proper handling and disposal of chemicals, proper storage, proper care of maintenance yards, and proper maintenance to keep critical components in good working order for continued use as part of the stormwater maintenance program	**1.** Document and report maintenance schedules **2.** Document any changes to the fleet maintenance program **3.** Document and report the number of employees trained	**1.** Years 1-5 **2.** Years 1-5 **3.** Years 1-5	Public Works Department
6b	03	**Erosion and Sediment Control Inspection Training** Staff members will be trained and become certified as Erosion and Sediment Control Inspectors.	**1.** Document the number staff members that have received a certification	**1.** Years 2-5	Public Works Department

Page # 7 of 7 total pages of SWMP Elements Forms attached to the NOI

DEP Form 62-621.300(7)(b), May 1, 2003

Appendix B:
Proposed NPDES Element Implementation Schedule

Task	Measurable Goal	Year 1 (2015)	Year 2 (2016)	Year 3 (2017)	Year 4 (2018)	Year 5 (2019)
City Stormwater Information Website	Number of Website Visits					
	Update Site and Provide More Content					
City Participation at Local Events	Number of Events Attended					
	Number of Brochures Handed Out					
New Homeowner Packets	Number of Packets Distributed					
Utility Inserts	Number of Inserts Distributed					
Public Involvement in Meetings	Number of Notifications Given					
	Number of Public Attendees					
Beach Clean-up/Outfall Monitoring Program	Number of Volunteers Participating					
	Number of Beach Clean-ups					
	Amount of Trash Collected					
	Number Outfalls Identified with Problems					
Labeling of Storm Sewer Drains	Number of Drains Labeled					
	Document the Number of Attendees					
Storm Sewer Map	Number of Outfalls					
	Changes to the Map					
Illicit Discharge Ordinance	Changes to the City Code					
	Number of Citations Issued					
Illicit Discharge Inspections	Develop SOP for Inspections					
	Number of Inspections Completed					
	Number of Complaints Investigated					
	Number of Illicit Discharges Identified					
Illicit Discharge Public Education Program	Document the Number of Brochures Distributed					
	Number of Events to Raise Awareness					
Erosion and Sediment Control Ordinance	Changes or Amendments to Ordinance					
Erosion and Sediment Control	Number of Construction Sites Operating with Requirements					
Construction Site Waste Control Ordinance	Create an Ordinance for Waste Control					
	Implement the Ordinance					
	Changes or Amendments to Ordinance					
	Number of Active Sites Operating with Waste Control					
Site Plan Review	Number of Site Plans Reviewed					
	Number of Site Plans Approved					
Public Complaints, Comments, and Feedback	Number of Complaints Received					
	Number of Investigations and Responses					
	Changes to Feedback Methods					
Construction Site Inspections	Number of Construction Sites Inspections					
	Number of Violations that have Occurred					
	Number of Follow-up Visits					
Street Sweeping	Number of Miles Swept					
	Amount of Trash and Debris Collected					
Storm Sewer System Vacuuming	Number of Inlets/Basins Vacuumed					
	Amount of Debris Removed					

*Boxes indicate the start year and color indicates if the program is already in existence or to be developed

Program to be Developed

Program Already in Progress

Task	Measurable Goal	Year 1 2015	Year 2 2016	Year 3 2017	Year 4 2018	Year 5 2019
Storm Sewer System Maintenance	Number of Components cleaned					
	Amount of Debris Removed					
Recycling Program	Amount of Waste Being Dropped Off at Center					
Grate Inlet Skimmer Boxes	Number of Inlets that Have Filters in Them					
	Amount of Debris that is Removed by Filters					
City of Marco Island Facility Inspections	Number of Inspections Completed					
Employee Spill Prevention/Hazardous Material Training	Number of Training Sessions					
	Number of Employees Trained					
Fleet Maintenance	Report Maintenance Schedules					
	Changes to the Fleet Maintenance Program					
	Document the Number of Employees Trained					
Erosion and Sediment Control inspection Training	Number of Staff Members Certified					

*Boxes indicate the start year and color indicates if the program is already in existence or to be developed

Program to be Developed

Program Already in Progress

Appendix C:
Task List of the NPDES Elements by Year

Tasks implemented in Year 1 of the NPDES Phase II Permit

Task	Measurable Goal
Year 1	
City Stormwater Information Website	Number of Website Visits
Utility inserts	Number of Inserts Distributed
Public Involvement in Meetings	Number of Notifications Given
	Number of Public Attendees
Storm Sewer Map	Number of Outfalls
	Changes to Maps
Illicit Discharge Ordinance	Changes to City Codes
	Number of Citations Issued
Illicit Discharge Inspections	Develop SOP for Illicit Discharge Inspections
	Number of Inspections Completed
	Number of Complaints Investigated
	Number of Illicit Discharges Identified
Illicit Discharge Public Education	Numbers of Brochures Distributed
Erosion and Sediment Control Ordinance	Changes of Amendments to Ordinance
Erosion and Sediment Control	Number of Active Construction Site with Control Measures
Construction Site Waste Control Ordinance	Create an Ordinance for Waste Control
Site Plan Review	Number of Site Plans Reviewed
	Number of Site Plans Approved
Public Complaints, Comments, and Feedback	Number of Complaints Received
	Number of Investigations and Responses
	Changes to feedback Methods
Construction Site Inspections	Number of Construction Sites Inspected
	Number of Violations That Have Occurred
	Number of Follow-Up Visits
Street Sweeping	Number of Miles Swept
	Amount of Trash and Debris Collected
Storm Sewer System Vacuuming	Number of Inlets/Basins Vacuumed
	Amount of Debris Removed
Storm Sewer System Maintenance	Number of Components Cleaned
	Amount of Debris Removed
Recycling Program	Amount of Waste Dropped Off at Center
Grate Inlet Skimmer Boxes	Number of Inlets that have Filters in Them
	Amount of Debris that is Removed by Filters
Fleet Maintenance	Report Fleet Maintenance Schedule
	Report Changes to the Maintenance Program
	Report the number of Employees Trained

Tasks to be Implemented in Year 2-3 for the NPDES Phase II Permit

Year 2

City Stormwater Information Website	Update Website With More Information
New Homeowner Packets	Number of Packets Distributed
Beach Clean-up/ Outfall Monitoring	Number of Volunteers
	Number of Events
	Amount of Trash Collected
Construction Site Waste Control Ordinance	Implement the Ordinance
Erosion and Sediment Control Inspection Training	Number of Staff Members Certified
Employee Spill Prevention/Hazardous Material Training	Number of Training Sessions
	Number of Employees Trained
City of Marco Island Facility Inspection	Number of Inspections Completed

Year 3

City Participation at Local Events	Number of Events Attended
	Number of Brochures Handed Out
Beach Clean-up/ Outfall Monitoring	Document Number of Outfall Problems Identified
Labeling of Storm Drains	Number of Drains Labeled
	Number of Attendees to Each Event
Illicit Discharge Public Education	Number of Events to Raise Awareness
Construction Site Waste Control Ordinance	Amendments or Changes to the Ordinance
	Number of Sites Operating with Waste Control

Appendix D:
Implementation Cost Estimate for the NPDES Phase II NOI for MS4s

Element ID	Element Name	Total Cost of Implementation
1a 01	City Stormwater Information Website	$ 2,347.26
1a 02	City Participation at Local Events	$ 8,515.00
1a 03	New Homeowner Packets	$ 5,733.70
1a 04	Utility Inserts	$ 28,142.76
2a 01	Public Involvement in Meetings	$ 11,987.73
2a 02	Beach Clean-up/Outfall Monitoring Program	$ 3,426.00
2a 03	Labeling of Storm Sewer Drains	$ 4,697.80
3a 01	Storm Sewer Map	$ 4,033.32
3b 01	Illicit Discharge Ordinance	$ 2,666.88
3c 01	Illicit Discharge Inspections	$ 5,329.60
3d 01	Illicit Discharge Public Education Program	$ 2,900.92
4a 01	Erosion and Sediment Control Ordinance	$ 2,666.88
4b 01	Erosion and Sediment Control	$ 810.60
4c 01	Construction Site Waste Control Ordinance	$ 5,284.80
4d 01	Site Plan Review	$ 9,293.96
4e 01	Public Complaints, Comments, and Feedback	$ 140,042.16
4f 01	Construction Site Inspections	$ 70,880.64
6a 01	Street Sweeping	$ 72,504.16
6a 02	Storm Sewer System Vacuuming	$ 10,479.76
6a 03	Storm Sewer System Maintenance	$ 46,035.40
6a 04	Recycling Program	$ 661.20
6a 05	Grate Inlet Skimmer Boxes	$ 67,128.40
6a 06	City of Marco Island Facility Inspections	$ 1,322.40
6b 01	Employee Spill Prevention/Hazardous Materials Training	$ 1,534.14
6b 02	Fleet Maintenance	$ 5,912.62
6b 03	Erosion and Sediment Control Inspection Training	$ 1,753.82
	Total:	**$ 516,091.91**

Appendix E:
Additional Stormwater Related Permits for the City of Marco Island

Environmental Resource Permit obtained from the South Florida Water Management District

PERMIT NO	APPROVED DATE	PERMIT TYPE	PERMIT STATUS	EXPIRATION DATE	PROJECT ACRES	PROJECT NAME	WATERSOURCE/ RECEIVING BODY	LANDUSES
11-00080-W	10-Dec-12	Water Use (Letter Modification)	ACTIVE	8-Feb-16	1	Marco Island Utilities	Mid-Hawthorn Aquifer	Aquifer Storage And Recovery;Public Water Supply
11-03403-W	22-Oct-12	New Water Use (General Permit)	ACTIVE	22-Oct-17	1	Marco Island Drainage Improvements Phase 4	Water Table Aquifer	Dewatering
11-02662-W	23-Apr-12	Water Use Modification	ACTIVE	23-Apr-15	1	City Of Marco Island Septic Tank Replacement Program	Water Table Aquifer	Dewatering
11-02662-W	23-Apr-12	Water Use Modification	ACTIVE	23-Apr-15	1	City Of Marco Island Septic Tank Replacement Program	Water Table Aquifer	Dewatering
11-02662-W	23-Apr-12	Water Use Modification	ACTIVE	23-Apr-15	1	City Of Marco Island Septic Tank Replacement Program	Water Table Aquifer	Dewatering
11-03308-P	19-Apr-12	Environmental Resource (Compliance Letter Mod)	ACTIVE		65.91	Fruit Farm Creek Mangrove Restoration	Tidal Creeks	Environmental Restoration
11-02006-P	13-Mar-12	Environmental Resource (General Permit Modification)		13-Mar-17	13.62	North Collier Blvd Drainage Improvement	Tidal Waters Of Marco Island Via Adjacent Tidal Canals	Roadway
11-02006-P	13-Mar-12	Environmental Resource (General Permit Modification)		13-Mar-17	13.62	North Collier Blvd Drainage Improvement	Tidal Waters Of Marco Island Via Adjacent Tidal Canals	Roadway
11-02006-P	19-Jan-12	Environmental Resource (General Permit Modification)	ACTIVE	19-Jan-17	3.01	Smokehouse Bay Bridge Replacement	Castaway Waterway	Roadway
11-02006-P	19-Jan-12	Environmental Resource (General Permit Modification)	ACTIVE	19-Jan-17	3.01	Smokehouse Bay Bridge Replacement	Castaway Waterway	Roadway
11-03308-P	17-Jan-12	Environmental Resource (New Construction/Operation)	ACTIVE	17-Jan-17	65.91	Fruit Farm Creek Mangrove Restoration	Tidal Creeks	Environmental Restoration
11-03308-P	17-Jan-12	Environmental Resource (New Construction/Operation)	ACTIVE	17-Jan-17	65.91	Fruit Farm Creek Mangrove Restoration	Tidal Creeks	Environmental Restoration
11-02006-P	19-Aug-10	Environmental Resource (General Permit Modification)	ACTIVE	19-Aug-15	36	Marco Island Drainage Improvements Phase 3	Tidal Waters Of Marco Island Via The Adjacent Tidal Canal	Roadway
11-02006-P	19-Aug-10	Environmental Resource (General Permit Modification)	ACTIVE	19-Aug-15	36	Marco Island Drainage Improvements Phase 3	Tidal Waters Of Marco Island Via The Adjacent Tidal Canal	Roadway
11-03102-P	18-Dec-09	Environmental Resource (New General Permit)	ACTIVE		1	North Collier Blvd Fairlawn Court To Jolley Bridge	C-4 Canal Drainage Basin Via North Collier Blvd Drainage System	Other
11-02850-P	28-Mar-08	Environmental Resource (Exemption)	ACTIVE		1	Elkcam Circle Roadway Improvements	Existing Swm System	Roadway
11-02006-P	20-Feb-08	Environmental Resource (General Permit Modification)	ACTIVE	20-Feb-13	0.6	Winterberry Dr/ Peru St Drainage Improvements	Tidal Peru Waterway	Other
11-00202-S-05	12-Jun-07	Surface Water Management (Compliance Letter Mod)	ACTIVE		1	Marco Shores Connection To Collier County Water Main	Gulf Of Mexico	Other
11-02662-W	15-Mar-07	New Water Use	ACTIVE	15-Mar-12	1	Septic Tank Replacement Program	Water Table Aquifer	Dewatering
11-02006-P	23-Jun-06	Surface Water Management (Compliance Letter Mod)	ACTIVE		1	North Collier Blvd Improvements - San Marco Rd To Rose Court	Existing Swm System	Roadway
11-02006-P	19-Apr-06	Environmental Resource (General Permit Modification)	ACTIVE	19-Apr-11	25.2	North Collier Blvd San Marco Road To Rose Court	Gulf Of Mexico Via Marco Island Canal System	Roadway
11-02462-P	11-Oct-05	Environmental Resource (New General Permit)	ACTIVE	11-Oct-10	1.54	East Winterberry Bridge Replacement	Roberts Bay	Other
	31-Oct-05	Environmental Resource (No Notice General Permit)	ACTIVE		1	Se Elkcam Circle Pavement Widening Between Collier Blvd And	;	Roadway
11-02006-P	30-Aug-05	Environmental Resource (General Permit Modification)	ACTIVE	30-Aug-10	8.35	Marco Island Intersections Improvements	Marco Island Canal System Via Culverts And Inlets.	Roadway
11-02006-P	26-Apr-05	Environmental Resource (General Permit Modification)			3.21	Racquet Center / Mackle Park / Tracts C And D	Caxambas And Roberts Bay	Recreational
11-02006-P	14-Apr-05	Environmental Resource (General Permit Modification)	ACTIVE	14-Apr-10	19.5	South Collier Blvd - Winterberry Drive To San Marco Rd	Landmark Waterway	Highway
11-00080-W	8-Feb-06	Water Use Renewal	ACTIVE	8-Feb-16	10206	Marco Island Utilities Public Water Supply	Mid-Hawthorn Aquifer	Aquifer Storage And Recovery;Public Water Supply
11-01921-P	24-Aug-06	Environmental Resource (General Permit Transfer)	ACTIVE		93	Marco Lakes Interconnect & Discharge Pipe Line	Henderson Creek Canal	Other

Appendix F:
NPDES Annual Report Requirements

Marco Island NPDES Requirements for Permit ID: FLR04E151

Annual Reports

- Year 1 Annual Report: Covers 12 months between March 20, 2015 through March 19, 2016- **Due September 19, 2016**
- Year 2 Annual Report: Covers 12 months between March 20, 2016 through March 19, 2017- **Due September 19, 2017**
- Year 3 Annual Report: Covers 12 months between March 20, 2017 through March 19, 2018- **Due September 19, 2018**
- Year 4 Annual Report: Covers 12 months between March 20, 2018 through March 19, 2019- **Due September 19, 2019**

Evaluation and Assessment

- EVALUATION: Permittee must evaluate program compliance, appropriateness of identified BMPs, and progress towards achieving identified measurable goals.
- RECORD KEEPING:
    - Records must be kept for a minimum of 3 years from the date the permit coverage expires.
    - Records must be submitted to FDEP when asked for
    - Records and a description of their stormwater management program must be available to the public at reasonable times during regular business hours.
- REPORTING: (See above).
    - Annual Reports are due to within 6 months of the anniversary date of permit overage.
    - In subsequent permit terms, reports will be submitted in years 2 and 4 unless required by the Department to submit more frequently.

To be Included in Annual Reports:

1. The status of compliance with permit conditions, an assessment of appropriateness of BMP, and progress towards achieving identified measurable goals for each of the elements.
2. Summaries or results of information collected and analyzed.
3. Summary of stormwater activities the permittee plans to undertake during the next reporting cycle.
4. A change in any identified BMP, measurable goals, or schedules for implementation for any of the required elements of the six minimum control measures.
5. Notice that the permittee is relying on another governmental entity to satisfy any part of its permit obligations. (if applicable). (This will be used for Element #6 as the SFWMD ERP is used for this).
6. Permittee must specify if they are relying on another entity to any aspect of the NOI (i.e. sharing the recycling center, mention that sharing this Collier County).

REQUIREMENTS OF PERMITTEE

- The Permittee must submit a Notice of Intent specifying entities that the Permittee is relying on to meet permit requirements.
- The Permittee must specify in periodic reports if they are relying on other entities to meet permit requirements (i.e. Recycling Center with Collier County).
- The Permittee is responsible if the other assisting entity fails to implement the control measures specified.
- Should the alternative program (Element #5) be eliminated or no longer recognized by the Department, the Permittee will be required to implement a new program that meets the Department's requirements.
- Any stormwater systems created as part of this permit must be properly operated and maintained.

For more information, please refer to:
http://www.dep.state.fl.us/water/stormwater/npdes/docs/Phase_II_MS4_GP.pdf