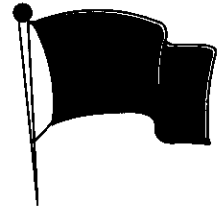




*Estado Libre Asociado de Puerto Rico
Municipio de Las Marías
Oficina del Alcalde*



*Hon. Edwin Soto Santiago
Alcalde*

"El Pueblo de la China Dulce"

July 14, 2010

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U.S. ENV. PROT. AGENCY
2010 JUL 16 PM 2:41
CEPD-DIRECTOR OFFICE

Mr. Carl-Axel P. Soderberg
Director
US EPA Caribbean Environmental Protection Division
Centro Europa Bldg., Suite 417
1492 Ponce de León Ave.
San Juan, PR 00907

By Certified Mail/Return Receipt

**RE: Notice of Intent (Amendment 1)
Municipality of Las Marías
PR NPDES Municipal Storm Water Sewer System Permit**

Dear Mr. Soderberg:

The Municipality of Las Marías (hereinafter referred to as MLM) is an owner/operator of a Municipal Separate Storm Water Sewer System (MS4). On May 10, 2010 MLM submit an NOI to apply for coverage under the NPDES General Permit PRR040000 received in EPA Offices on May 17, 2010.

On June, 2010 EPA informs MLM, via telephone that the NOI needs additional information to comply with the application process. This Amended NOI includes the information requested to apply for the permit coverage.

We hereby submit our formal application for coverage under the NPDES General Permit PRR040000 issued on November 6, 2006 by the US Environmental Protection Agency. Our application follows the format specified by the USEPA in the applicable guidelines.

Servicio, Dedicación y Honradez

- 1- The Municipality of Las Marias, represented by its mayor Hon. Edwin Soto Santiago, operates a municipal separate storm water sewer system located within the boundaries of the municipality.

Las Marias is located in the west-central part of the Island. A part of the municipality has been designated by the USEPA as an urbanized area based upon the 2000 Census.

2- Operator's General Information

Name: Municipality of Las Marias
Representative: Hon. Edwin Soto Santiago, Mayor
Mailing Address: Box 366, Las Marias, PR 00670
Telephone: (787) 827-2280
FAX: (787) 827-2021
Contact: Mr. Victor Miranda (Federal Programs Director)

Bordering municipalities: Las Marias is located north of Maricao; to the southeast of Añasco; south of San Sebastián; to the east of Mayaguez; and west of Lares

3- Operator's SIC – 9111

- 4- Las Marias is a Public Government Entity. The contact information appears on Item 2 above.

- 5- Las Marias does not generate, treat, store, or dispose any hazardous wastes and has no permit under RCRA. The municipality does not own or operate a wastes treatment unit or drinking water plant, nor has any other NPDES permits.

The Municipality of Las Marias has the following permits from Puerto Rico Environmental Quality Board:

- a- Estación de Traslado (ET-43-0010)
 - b- Underground Injection System Operation Permit for Centro Pre-Escolar Bo. Farinas (UIC-08-43-002-RM)
 - c- Underground Injection System Construction Permit for Centro Bellas Artes (no permit number assign yet)
- 6- Area maps are included as Attachment A of the NOI. Identification of the discharge points, waste treatment, storage or disposal facilities, injection wells, and any other structures or facilities that may affect storm water quality will be integrated to the maps as MCM-3 (Illicit Discharge Detection and Elimination) was implemented.

- 7- System Description – See Explanatory Memoir, Attachment B

Servicio, Dedicación y Honradez

8- Las Marías has an area of 44.1 square miles (114.15 km²) of which 44 mi² are of land, and 0.1 mi² (0.15 km²) are of water. The area cover by this MS4 permit was approximately 3.04 square miles (7.87 km²)

The total population (in accordance with the 2000 census) is 10,140, which represents a density of 234.4 persons/mi².

9- Description of the BMP– See Explanatory Memoir, Attachment B

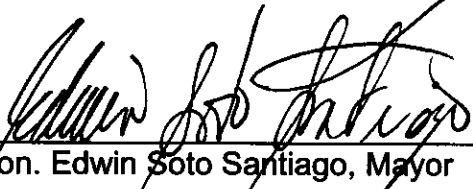
10-Description of Measurable Goals– See Explanatory Memoir, Attachment B

11-Responsible persons – See Explanatory Memoir, Attachment B

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designated to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who managed 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.



Hon. Edwin Soto Santiago, Mayor

2/14/10

Date

Attachments:

A – Maps

B – Explanatory Memoir

Servicio, Dedicación y Honradez

ATTACHMENTS TO:

**Notice of Intent
PR NPDES Municipal Storm Water Sewer System Permit**

Municipality of Las Marías

ATTACHMENT A

Maps

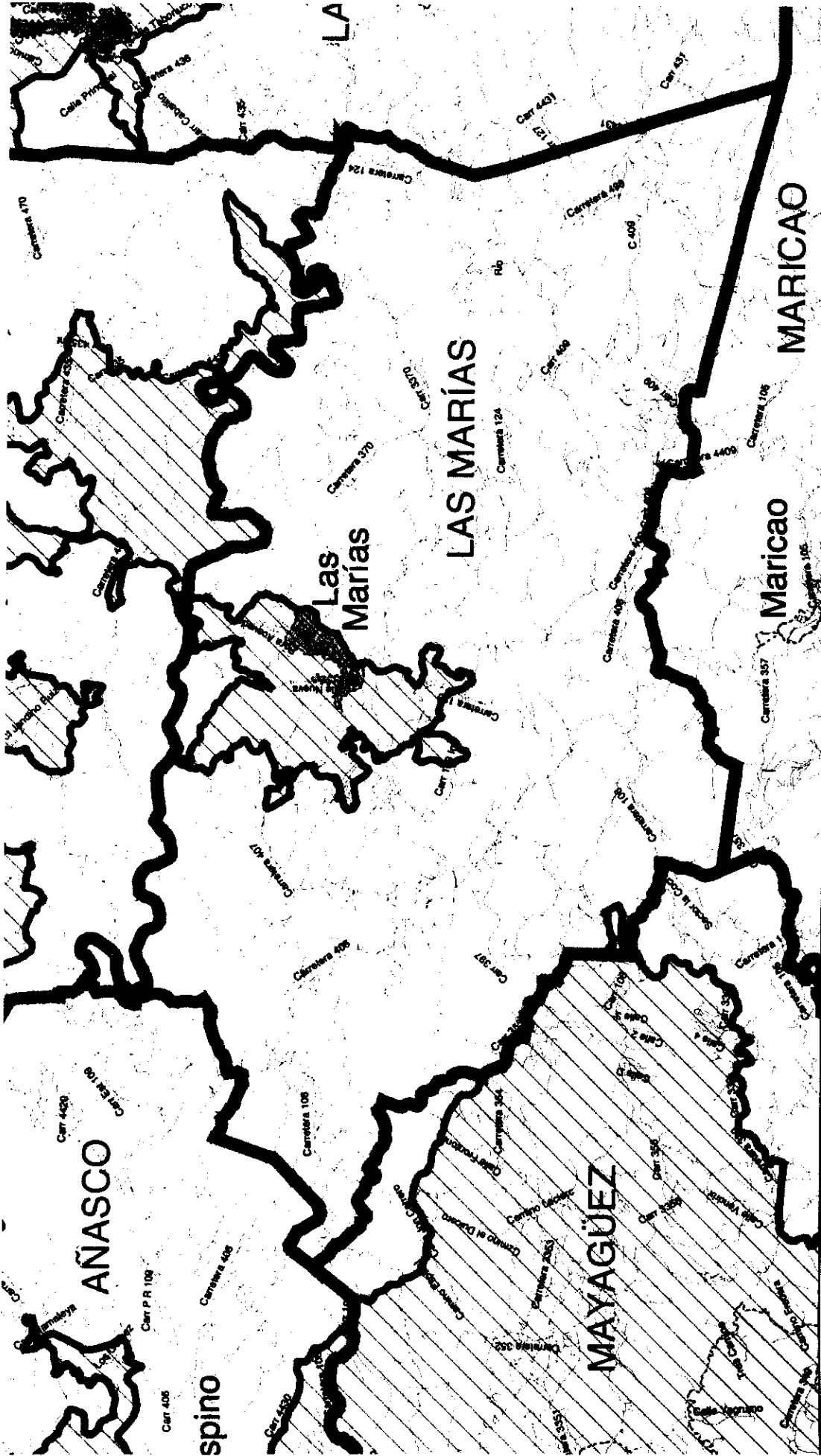


Figure 1
Map of Areas Subject to NPDES MS4

Not to Scale

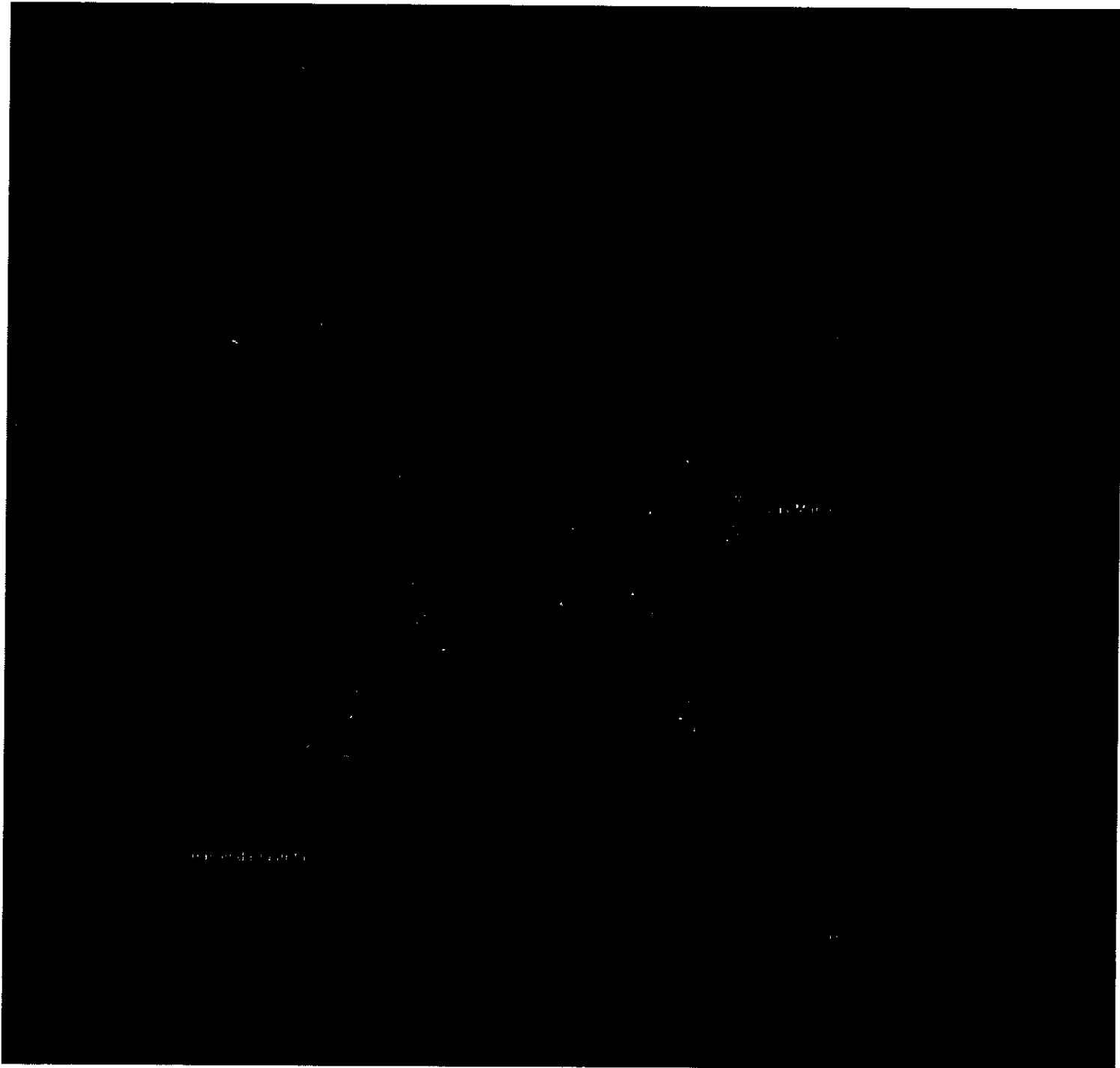


Figure 2
Map of Areas Subject to NPDES MS4 over Aerial Photograph

Not to Scale

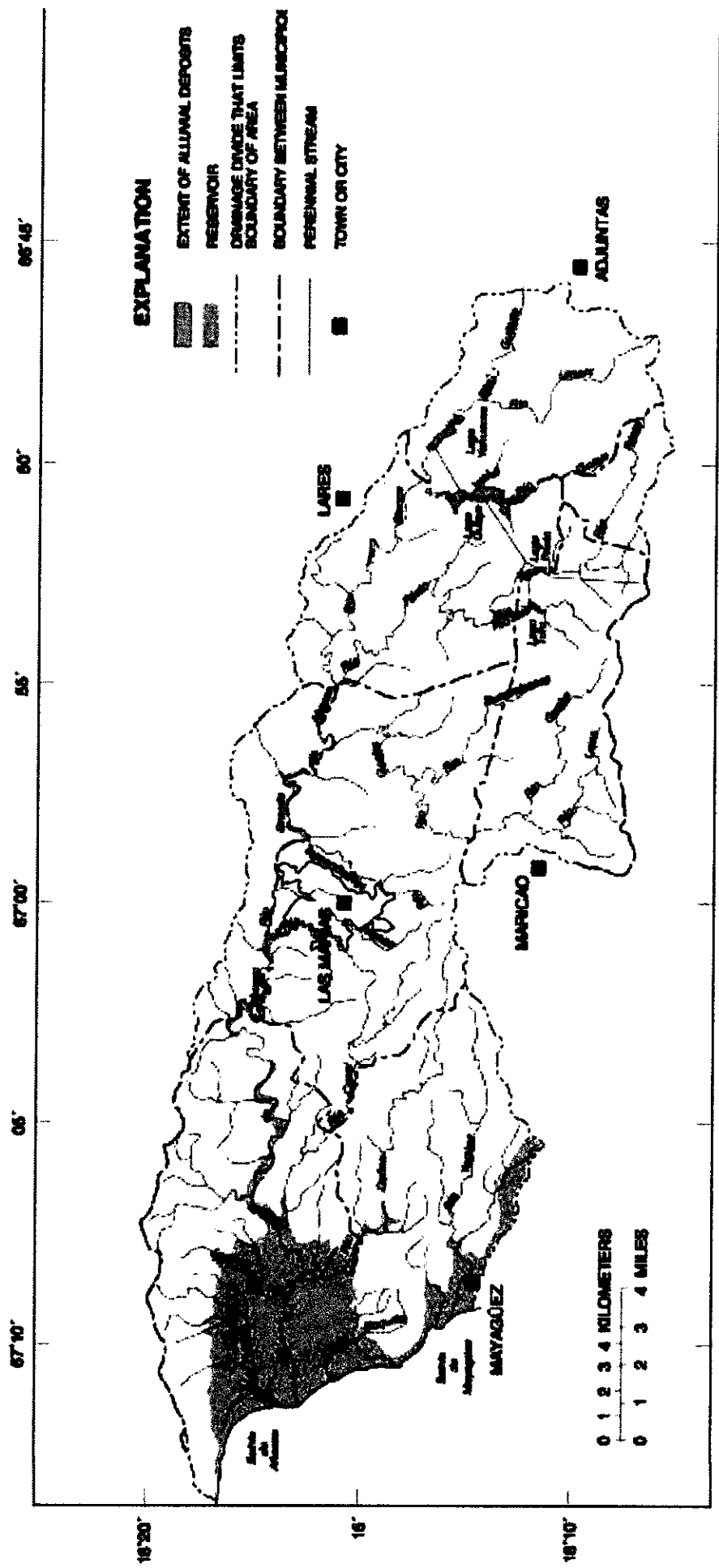


Figure 3
Map of Areas Subject to NPDES MS4 over Hydrology

Not to Scale

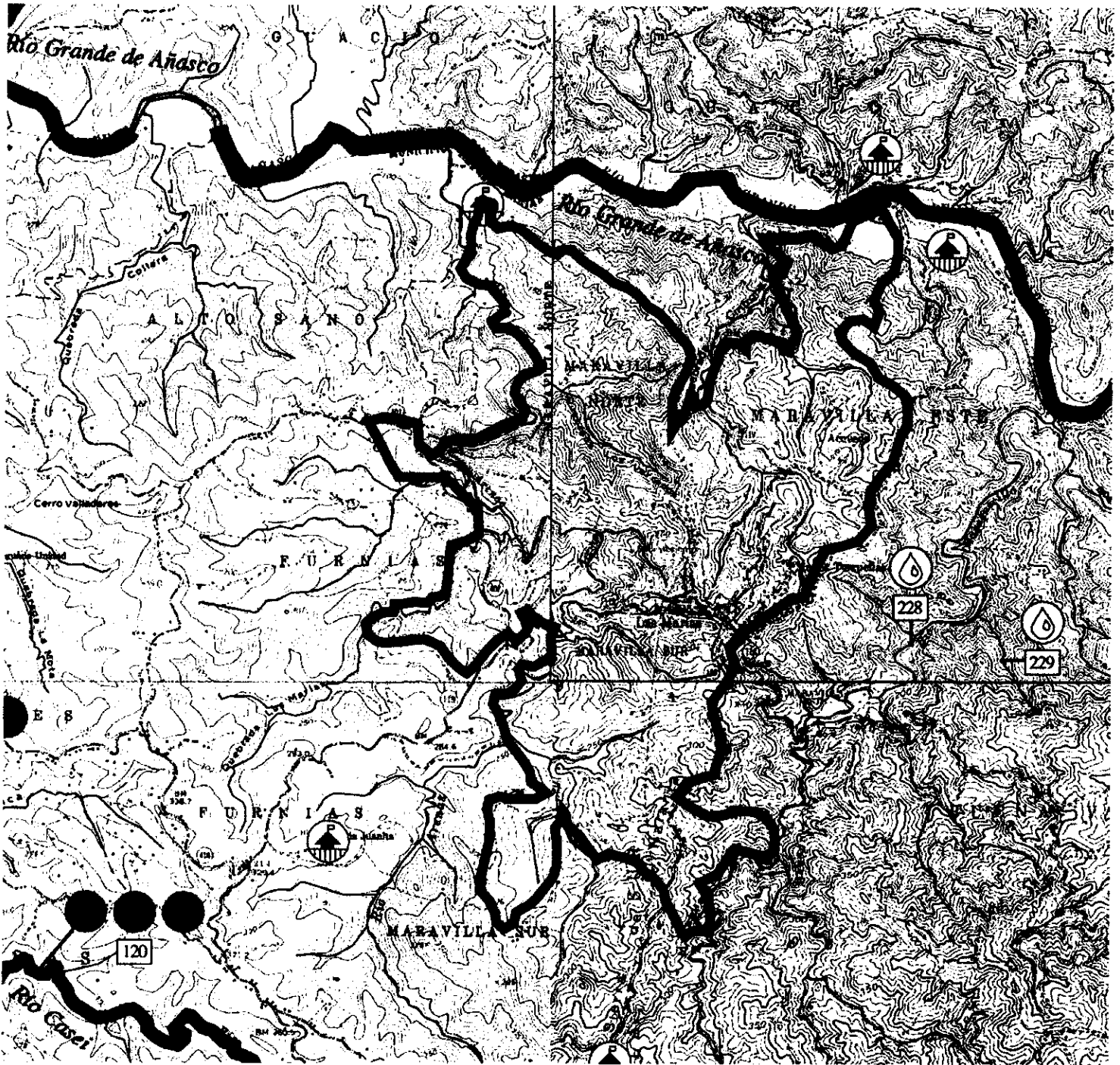


Figure 4
Map of Areas Subject to NPDES MS4 over ESI Map

Not to Scale

ATTACHMENT B

Explanatory Memoir

EXPLANATORY MEMOIR
Municipal Storm Water Sewer System
Municipality of Las Marías

A- Introduction

Based on the 2000 census data and on the criteria of the Phase II storm water regulations, EPA has determined that the Municipality of Las Marías operates a small municipal separate storm sewer system requiring NPDES permit Coverage. As part of the application for such permit the Municipality needs to submit to EPA a Notice of Intent (NOI) for the NPDS Discharge from Small Municipal Separate Storm Sewer System (MS4) General Permit (PRR040000).

This memoir is prepared to complement the information of the abovementioned NOI. Specifically items 7, 9, 10 and 11.

B- Storm Water Sewer System Description

The Municipality of Las Marías Storm Water Sewer System (MS4) in the urban areas in general consist of a series of catch basins, typically located within the right-of-way of municipal and state roads, interconnected by underground concrete or PVC pipes which finally discharge to surface water bodies tributaries to Rio Grande de Añasco. In the rural areas the Municipal MS4 typically consists of a series of interconnected open channel culverts, which run parallel to municipal and state roads, and usually discharge to a surface water body. Interconnected to the Municipal MS4 are the storm water sewer systems owned and operated by the Puerto Rico Department of Public Works and Transportation and the Puerto Rico Highway and Transportation Authority.

As the Municipality of Las Marías implements the proposed Storm Management Plan a more accurate description (capacity, operation, etc.) of the Municipal MS4 can be provided. The Municipal Public Works Department is responsible for the operation and Maintenance of the MS4 facilities in the Municipality. The principal responsibility of the Department is to perform a preventive maintenance program to provide quality service for the citizens. The Department offers services such as open channel cleaning, catch basin clean up and open trash dumping sites elimination. Street sweeping, roadside vegetation maintenance, and other related services are also rendered.

C- Best Management Practices Description and Measurable Goal

1. **Public Education and Outreach Measures**
Because stormwater runoff is generated from dispersed land surfaces, pavements, yards, driveways, and roofs, efforts to control stormwater pollution must consider individual, household, and public behaviors and

activities that can generate pollution from these surfaces. It takes individual behavior change and proper practices to control such pollution. Therefore it is important to make the public sufficiently aware and concerned about the significance of their behavior in regards to stormwater pollution through information and education.

Proposed BMP's

a. Development of an Outreach Strategy

Public education and outreach involves using effective mechanisms and programs, guided by a detailed outreach strategy, to engage the public's interest in preventing stormwater pollution. A key factor to consider when developing a strategy is that the public has varying levels of background knowledge of both stormwater management and their role in reducing stormwater pollution. Hence you should take a multi-pronged approach to outreach efforts by

- generating basic awareness of stormwater pollution
- educating at a more sophisticated level using more substantive content, and
- building on existing recognition of the issue to prompt behavior changes that reduce pollution (or the opportunities for pollution).

The strategy should also specifically address the integration of public outreach with the implementation of other stormwater program management measures (like illicit discharge detection and elimination, construction site runoff control, and post construction-runoff control).

b. Classroom Education on Stormwater

Classroom education plays an integral role in any stormwater pollution outreach program. Providing stormwater education through schools conveys the message not only to students but also to their parents. Many municipal stormwater programs partner with educators and experts to develop storm water-related programs for the classroom. The municipality's role is to support a school district's stormwater education efforts, not to dictate what programs and materials the school should use. Municipalities should work with school officials to identify their needs.

c. Using the Media

The media can greatly enhance a stormwater pollution prevention campaign. Through the media, a campaign can educate a targeted or mass audience about the problems of and solutions to stormwater pollution. A campaign can use the media to build

support for remediation and retrofit projects. It can raise awareness of and spark interest in stormwater management.

d. Educational Displays, Pamphlets and Booklets

Printed materials are commonly used to inform the public about stormwater pollution. Some municipalities have a public relations department or a staff member that handles these types of outreach materials. Others contract with public relations firms and graphic designers to develop materials. Regardless of who actually produces the materials, municipalities should be creative when deciding which media to use and what types of messages are appropriate for those media.

e. Residential Car Washing

This management measure involves educating the general public, businesses, and municipal fleets (public works, school buses, fire, police, and parks) on the water quality impacts of the outdoor washing of automobiles and how to avoid allowing polluted runoff to enter the storm drain system.

f. Water Conservation Practices for Homeowners

The Municipality can help homeowners conserve water through community education efforts. The municipality will establish a Check For Leaks program that teaches homeowners how to spot leaking faucets, toilets, hoses, and pipes.

Implementation Schedule

Year 1: Develop educational pamphlets, booklets, and flyers; develop a storm water Web site; develop and produce the PSA announcements; and hold the annual public meeting on the SWMP.

Year 2: Expand the partnership with the schools; continue educational programs at local schools; and hold the annual public meeting.

Year 3: Continue educational programs at local schools; and hold the annual public meeting.

Year 4: Continue educational programs at local schools; Newsletters; and hold the annual public meeting.

Year 5: Continue educational programs at local schools; Newsletters and hold the annual public meeting

2. Public Involvement/Participation

A single regulatory agency or municipal office working alone cannot be as effective in reducing stormwater pollution as if it has the participation, partnership, and combined efforts of other groups in the community all working towards the same goal. The point of public involvement is to

build on community capital—the wealth of interested citizens and groups—to help spread the message on preventing stormwater pollution, to undertake group activities that highlight storm drain pollution, and contribute volunteer community actions to restore and protect local water resources. Public involvement includes facilitating opportunities for direct action, educational, and volunteer programs such as riparian planting days, volunteer monitoring programs, stormdrain marking, or stream-clean up programs.

Proposed BMP's

a. Storm Drain Marking

Storm drain marking involves labeling storm drain inlets with plaques, tiles, painted or pre-cast messages warning citizens not to dump pollutants into the drain. The messages are generally a simple phrase or graphic to remind those passing by that the storm drains connect to local waterbodies and that dumping will pollute those waters.

b. Stream Cleanup and Monitoring

Hosting a stream cleanup. This practice is an effective way to promote stormwater awareness. Many people are unaware that most storm drains discharge untreated runoff directly into local waterbodies. A stream cleanup allows concerned citizens to become directly involved in water pollution prevention. Participants volunteer to walk (or paddle) the length of the stream or river, collecting trash and recording information about the quantity and types of garbage that has been removed. Stream cleanups also educate members of the community about the importance of stream water quality through media coverage and publicity efforts.

c. Stakeholder Meetings

Public involvement and public participation naturally require the inclusion of stakeholders. Stakeholders are individuals or groups in the community that are most affected by a municipality's stormwater program. They have a vested interest in the waterbody and stormwater activities. Stakeholders might include citizens, local school groups, community leaders, local and state government representatives, and business owners in the watershed. Stakeholder meetings can be in the form of a local stormwater management panel, a public meeting, or any type of interactive, information-sharing event.

Implementation Schedule

- Year 1: Implement a baseline community attitude survey; Start a storm drain stenciling campaign; Develop the annual cleanup program; and support volunteer monitoring programs; and hold the annual public meeting.
- Year 2: Consider final recommendations of the public input; implement the storm water hotline; continue the annual cleanup program; continue storm drain stenciling; support volunteer monitoring; and hold the annual public meeting.
- Year 3: Continue the annual spring city cleanup program; continue storm drain stenciling; support volunteer monitoring; and hold the annual public meeting.
- Year 4: Continue the annual cleanup program; continue storm drain stenciling; Support volunteer monitoring; and hold the annual public meeting.
- Year 5: Perform the follow-up community survey; continue the city cleanup program; support volunteer monitoring program; continue with storm drain stenciling; and hold the annual public meeting.

3. Illicit Discharge Detection and Elimination

Illicit discharges are generally any discharge into a storm drain system that is not composed entirely of stormwater. The exceptions include water from fire fighting activities and discharges from facilities already under an NPDES permit. Illicit discharges are a problem because, unlike wastewater which flows to a wastewater treatment plant, stormwater generally flows to waterways without any additional treatment. Illicit discharges often include pathogens, nutrients, surfactants, and various toxic pollutants.

Phase II MS4s are required to develop a program to detect and eliminate these illicit discharges. This primarily includes developing:

- a storm sewer system map,
- an ordinance prohibiting illicit discharges,
- a plan to detect and address these illicit discharges, and
- an education program on the hazards associated with illicit discharges.

Proposed BMP's

a. Illicit Discharge Detection and Elimination Program

Stormwater regulations define an "illicit discharge" as "any discharge to a municipal separate storm sewer that is not composed entirely of stormwater" (except discharges resulting from fire fighting activities and a few other categories). Common

sources of non-stormwater, dry weather discharges in urban areas include apartments and homes, car washes, restaurants, airports, landfills, and gas stations, to name but a few.

The development of an effective municipal illicit discharge detection and elimination (IDDE) program requires the establishment of adequate legal authority to prohibit illicit discharges; to assess and prioritize potential areas, pollutants, or behaviors of concern; to coordinate existing resources; to establish a mechanism to track activities; and to establish measurable goals. Sources of illicit discharges in urban areas are numerous and seemingly ever-present. All urban municipalities can benefit from establishing a comprehensive program to address these nonstormwater discharges, including reporting hotlines and response procedures.

The following four steps will be used for the development of the IDDE program:

- *Audit Existing Resources and Programs:* It is important to identify the most appropriate and capable agencies and staff to administer and implement an IDDE program early in the process. A comprehensive selfaudit is recommended to determine the effectiveness and efficiency of existing programs. A self-audit should address and research existing sewer infrastructure (storm and sanitary), legal authority, mapping and geographic information system (GIS) resources, as well as field and laboratory staff and equipment.
- *Establish Responsibility, Authority, and Tracking:* To implement an effective IDDE program, three primary questions must be answered early in the process 1) Who will be responsible for administration? ; 2) On what legal authority? ; 3)How will detected discharges and follow up elimination activities be tracked?

Based on the self-audit, determine the most capable agency or department to administer the program. Local ordinances may need to be amended or developed to implement and enforce an IDDE program.

- *Complete a Desktop Assessment of Illicit Discharge Potential:* Many municipalities have finite resources for detecting and eliminating illicit discharges. To develop the most cost-effective and efficient IDDE program, it is important to prioritize areas within a community for investigation.

- *Develop Program Goals and Implementation Strategies:* After completing the audit and desktop assessment, it is critical that a program manager develop achievable, measurable IDDE goals. The stormwater manager should now have a basic understanding of community water quality issues, how and in what areas IDDE may be impacting receiving waters, and the resources available to eliminate the discharges. This information should be used to set measurable goals and strategies to achieve those goals.

b. Reducing the Occurrence of SSOs

Sanitary sewer overflows (SSOs) are releases of raw sewage from a separate sanitary sewer system before it has reached a treatment facility. Raw sewage contains bacteria and nutrients that endanger both human health and the environment. SSOs occur when the flow into the system exceeds the design capacity of the conveyance system, resulting in discharges into basements, streets, and streams. Sewage overflowing from a manhole is a common SSO, and it frequently results in untreated sewage flowing into a stream. While SSOs can occur in any system due to flooding or temporary blockages, chronic overflows indicate a deteriorating system or a system where supply has exceeded capacity.

c. Developing a Used Oil Recycling Program

Used motor oil contains heavy metals, contaminants and dirt discarded by the engine during use. Fortunately, used motor oil is dirty rather than worn out, so it can be recycled. However, motor oil is toxic to humans, wildlife and plants. As such, it should be disposed of at a local recycling or disposal facility. Before disposal, used motor oil should be stored in a plastic or metal container with a secure lid, rather than dumped in a landfill or down the drain.

The oil recycling programs should provide the public with the proper informational resources. Programs should encourage the public to contact local service stations, municipal governments, the county government office, or the local environmental or health departments if they are unsure where to safely dispose of their oil. The municipality also need to address oil filter recycling in their recycling programs. Programs should encourage the public to check with local collection facilities to determine whether oil filters are recycled locally. If oil filters are not recycled locally, empty filters should be wrapped in newspaper and disposed of with regular household waste.

d. **Illegal Dumping Control**

Illegal dumping is the disposal of waste in an unpermitted area, such as a back area of a yard, along stream bank, or at some other off-road area. Pouring liquid wastes or disposing of trash down storm drains can also qualify as illegal dumping. It is often called "open dumping," "fly dumping," and "midnight dumping" because materials are often dumped in open areas from vehicles along roadsides late at night. Primarily nonhazardous materials, illegally dumped wastes are dumped to avoid paying disposal fees or expending the time and effort required for proper disposal.

Public education is the most important method of implementing such programs. To ensure their effectiveness, the programs allow for citizen reporting of illegal dumpers, who can then be fined, sentenced to jail, or are required to perform community service.

e. **Preventing Septic System Failure**

Septic systems treat household wastes in areas without access to public sewers or where a sewer system is not feasible. The goal of this measure is to prevent new septic systems from failing and to detect and correct existing systems that have been failing.

f. **Community Hotlines**

Regulators and authorities often encourage the public to help stop water polluters. Community hotlines provide a means for concerned citizens and agencies to contact the appropriate authority when they see people creating water quality problems. A hotline can be a toll-free telephone number or an electronic form linked directly to a utility or government agency, such as the water quality control board. A typical call might report a leaking automobile, concrete wash-out dumped on the street, paint in a creek, or organic debris (including pet waste) in a drainage system or waterway. Generally, an investigation team promptly responds to a hotline call and, in most cases, visits the problem site. If a responsible party can be identified, the team informs the party of the problem, offers alternatives for future disposal, and instructs the party to resolve the problem. If the issue is not resolved by the responsible party (or if the party cannot be identified), the proper authority takes action to remediate the situation and prevent future violations.

Implementation Schedule

Year 1: Start the storm water map survey; and begin the educational training program.

- Year 2: Continue the storm water map; begin writing enforcement ordinances; continue the educational training program; and begin surveys for illicit discharge.
- Year 3: Continue the storm sewer map and complete the enforcement ordinance writing; continue the educational program; and continue surveys for illicit discharges.
- Year 4: Complete the storm water map survey. Continue the educational program and surveys for illicit discharges.
- Year 5: Continue the educational program and surveys for illicit discharges.

4. Construction Site Stormwater Runoff Control

Uncontrolled stormwater runoff from construction sites can significantly impact rivers, lakes and estuaries. Sediment in waterbodies from construction sites can reduce the amount of sunlight reaching aquatic plants, clog fish gills, smother aquatic habitat and spawning areas, and impede navigation. Phase II MS4s are required to develop a program to reduce pollutants in stormwater runoff to the MS4 for construction sites disturbing one or more acres. This primarily includes developing:

- An ordinance,
- Requirements to implement erosion and sediment control BMPs,
- Requirements to control other waste at the construction site,
- Procedures for reviewing construction site plans,
- Procedures to receive and consider information submitted by the public, and
- Procedures for inspections and enforcement of stormwater requirements at construction sites.

Proposed BMP's

a. Local Ordinances for Construction Site Runoff Control

Erosion and sedimentation from construction sites can lead to reduced water quality and other environmental problems. Phase I and Phase II municipalities must implement a stormwater management program that includes a component for controlling erosion and sediment on construction sites disturbing at least one acre. Municipalities must establish the appropriate legal authority to accomplish this. Many municipalities use their grading ordinance or their stormwater code as the legal mechanism for triggering erosion and sediment control requirements. The ordinance should specify which sites are required to implement controls (i.e., MS4 regulations require all sites greater than one acre, but many municipalities use a smaller area or volume threshold, such as 50 cubic yards of earth moved). It should require that erosion and sediment control BMPs be implemented and maintained, and

include penalties for noncompliance. Ordinances can set grading limits, design requirements, erosion control practices, sediment control practices, waterway crossing specifications, or other stormwater management BMPs. The PREQB has enacted regulations covering erosion control from construction sites. The ordinance should be in accordance with applicable regulations.

b. **Municipal Construction Inspection Program**

Construction sites lacking adequate stormwater controls can contribute significant amounts of sediment to streams and lakes. To reduce the water quality impacts of active construction sites, NPDES regulations require that many construction projects install and maintain appropriate erosion and sediment control, stormwater management, and housekeeping BMPs.

The stormwater construction inspection program should include:

- *Ordinance/Legal Authority* - Phase II regulations require "an ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions to ensure compliance
- *Construction Site Inventory* - A tracking system must be developed to inventory projects and identify sites for inspection. The inventory ideally should also track the results of inspections and prioritize construction sites based on factors such as proximity to a waterbody, size, slope, and history of past violations.
- *Construction Requirements and BMPs* - Municipalities must provide construction operators with guidance on the appropriate selection and design of stormwater BMPs.
- *Plan Review Procedures* - Submitted plans must be reviewed to ensure they address local requirements and protect water quality.
- *Construction Site Inspections* - The municipality should identify an inspection frequency for sites (e.g., weekly, monthly, twice per season, etc.). The inspection frequency can vary based on the site's priority.
- *Enforcement Procedures* - An inspection program should have clear enforcement procedures, including a written progressive enforcement policy.
- *Training and Education* - Municipal stormwater staff conducting inspections should receive training on regulatory requirements, BMPs, inspections, and enforcement.

Implementation Schedule

Year 1: Develop ordinance or other regulatory mechanisms; begin developing procedures for information submitted by the public.

Year 2: Implement the ordinance; develop procedures for construction site inspections; begin enforcement of the ordinance; consider public information submitted.

Year 3: Complete the enforcement ordinance writing; continue construction site inspections; consider public information submitted.

Year 4: Continue to increase ordinance enforcement; continue construction site inspections; consider public information submitted.

Year 5: Fulfill maximum compliance with the ordinance; continue construction site inspections; consider public information submitted.

5. Post-Construction Stormwater Management in New Development and Redevelopment

For the past two decades the rate of land development across the country has been more than two times greater than the rate of population growth. If unchecked, the increased impervious surface associated with this development will increase stormwater volume and degrade water quality, which can harm lakes, rivers, streams, and coastal areas.

The best way to mitigate stormwater impacts from new developments is to use practices to treat, store, and infiltrate runoff onsite before it can affect water bodies downstream. Innovative site designs that reduce imperviousness and smaller-scale low impact development practices dispersed throughout a site are excellent ways to achieve the goals of reducing flows and improving water quality. Phase II MS4s are required to address post-construction stormwater runoff from new development and redevelopments that disturb one or more acres.

Proposed BMP's

a. Ordinances for Post-construction Runoff

A vital step in controlling the harmful effects of development on urban water-quality is managing post-construction stormwater runoff. Land development creates roads, sidewalks, parking lots, rooftops and other impervious surfaces that can have detrimental effects on aquatic systems. Impervious cover has been linked with stream warming and the loss of aquatic biodiversity in urban areas. Stormwater runoff from impervious areas can contain sediment, nutrients, road salts, heavy metals, bacteria, petroleum hydrocarbons, and other pollutants detrimental to water quality. An ordinance promotes the public welfare by guiding, regulating, and

controlling the design, construction, use, and maintenance of any development or other activity that disturbs or breaks the topsoil or results in the movement of earth on land. The goal of a stormwater management ordinance for post-construction runoff is to limit surface runoff volumes and reduce water runoff pollutant loadings.

b. Siting and Design Considerations

The purpose of the post-construction ordinance is to establish stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public residing in watersheds within a jurisdiction.

c. BMP Inspection and Maintenance

The effectiveness of post-construction stormwater control best management practices (BMPs) depends upon regular inspections of the control measures. Generally, BMP inspection and maintenance falls into two categories: expected routine maintenance and non-routine (repair) maintenance. Routine maintenance is performed regularly to maintain both the aesthetics of the BMPs and their good working order. Routine inspection and maintenance helps prevent potential nuisances (odors, mosquitoes, weeds, etc.), reduces the need for repair maintenance, and reduces the chance of polluting stormwater runoff by finding and fixing problems before the next rain.

Implementation Schedule

Year 1: Begin development of the strategies for structural and nonstructural BMPs.

Year 2: Implement the strategies for the BMPs; implement the ordinances and construction standards for the BMP development.

Year 3: Reduce the percent of new impervious surfaces associated with new development projects.

Year 4: Continue enforcement of ordinances and implementation of the BMPs; ensure the adequacy of the long-term operation and maintenance of the BMPs.

Year 5: Improved clarity and reduced sedimentation of local water bodies.

6. Pollution Prevention/Good Housekeeping for Municipal Operations

Municipalities conduct numerous activities that can pose a threat to water quality if practices and procedures are not in place to prevent pollutants from entering the MS4. These activities include minor road repairs and other infrastructure work, automobile fleet maintenance, landscaping and park maintenance, and building maintenance.

Municipalities also conduct activities that remove pollutants from the MS4 when performed properly, such as parking lot and street sweeping and storm drain system cleaning. Finally, municipal facilities can be sources of stormwater pollutants if BMPs are not in place to contain spills, manage trash, and handle nonstormwater discharges. Phase II MS4s are required to train staff on ways to protect stormwater, particularly when maintaining MS4 infrastructure and performing daily municipal activities, such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance. This primarily includes:

- Developing inspection and maintenance procedures and schedules for stormwater BMPs,
- Implementing BMPs to treat pollutants from transportation infrastructure, maintenance areas, storage yards, sand and salt storage areas, and waste transfer stations,
- Establishing procedures for properly disposing of pollutants removed from the MS4, and
- Identifying ways to incorporate water quality controls into new and existing flood management projects.

Proposed BMP's

a. Municipal Employee Training and Education

Municipal employee training programs should be designed to teach staff about potential sources of stormwater contamination and ways to minimize the water quality impact of municipal activities, such as park and open space maintenance, fleet and building maintenance, construction and land disturbances, and storm drain system maintenance. Training programs should include a general stormwater awareness message, pollution prevention/good housekeeping measures, spill response and prevention, and information about the operation and maintenance of structural best management practices (BMPs). Training programs also should include information on stormwater pollution prevention plans (SWPPPs) for municipal facilities and BMPs recommended for use in the field to prevent contaminated discharges. Finally, municipal field staff should be trained to recognize, track, and report illicit discharges.

b. Municipal Landscaping

Lawn and garden activities can contaminate stormwater with pesticide, soil, and fertilizer runoff. Proper landscape management, however, can effectively reduce water use and contaminant runoff, and enhance a property's aesthetics. Environmentally friendly landscape management protects the environment through careful planning and design, routine soil analysis, appropriate plant

selection, use of practical turf areas and mulches, efficient water use, and appropriate maintenance.

c. **Municipal Vehicle Fueling**

Fueling fleets of municipal vehicles can generate spills and leaks of fuel (gasoline and diesel fuel) and heavy metals – disproportionately toxic compounds that if washed into the storm drain system by stormwater runoff can seriously impair the water quality of nearby waterbodies. To prevent such discharges, municipal officials can employ a variety of BMPs. They frequently have municipal vehicles refueled at offsite facilities, and then only in designated areas. They store fuel in enclosed, covered tanks. They implement spill controls and train employees and subcontractors in proper fueling procedures.

d. **Municipal Vehicle and Equipment Maintenance**

Common activities at municipal maintenance shops include parts cleaning, vehicle fluid replacement, and equipment replacement and repair. Automotive maintenance facilities are considered to be stormwater "hot spots." Hotspots are areas that generate significant loads of hydrocarbons, trace metals, and other pollutants that can affect the quality of stormwater.

Municipal facilities that properly store automotive fluids and thoroughly clean up spills can help reduce the effects of automotive maintenance practices on stormwater runoff and, consequently, local water supplies. The most effective way to minimize wastes generated by automotive maintenance activities is to prevent their production in the first place. Pollution prevention programs trying to reduce polluted liquid discharges from automotive maintenance facilities to storm drains should stress "dry shop" techniques.

e. **Municipal Vehicle and Equipment Washing**

Municipal vehicle washing can generate dry weather runoff contaminated with detergents, oils, grease, and heavy metals. Vehicle washing BMPs can eliminate contaminated wash water discharges to the sanitary sewer system. Such BMPs include installing wash racks that discharge wash water to the sanitary sewer, and contracting the services of commercial car washes, which are permitted to discharge wash water to the sanitary sewer system. Finally, employees and subcontractors should be trained in the municipality's vehicle washing procedures to avoid illicit discharges.

f. Parking Lot and Street Cleaning

Streets, roads, highways and parking lots accumulate significant amounts of pollutants that contribute to stormwater pollutant runoff to surface waters. Pollutants, including sediment, debris, trash, road salt, and trace metals can be minimized by street sweeping. Street sweeping can also improve the aesthetics of municipal roadways, control dust and decrease the accumulation of pollutants in catch basins. An effective municipal street sweeping program can meet regulatory requirements, assess street sweeping effectiveness, and minimize pollutants in roadways.

g. Storm Drain System Cleaning

Storm drain systems need to be cleaned regularly. Routine cleaning reduces the amount of pollutants, trash, and debris both in the storm drain system and in receiving waters. Clogged drains and storm drain inlets can cause the drains to overflow, leading to increased erosion. Cleaning increases dissolved oxygen, reduces levels of bacteria, and supports in-stream habitat. Areas with relatively flat grades or low flows should be given special attention because they rarely achieve high enough flows to flush themselves.

h. Hazardous Materials Storage

Failure to properly store hazardous materials dramatically increases the probability that they will end up in local waterways. Many people have hazardous materials stored throughout their homes, especially in garages and storage sheds. Practices such as covering hazardous materials or storing them properly can have dramatic impacts. Hazardous material storage is relevant to both urban and rural settings and all geographic regions.

The best management practice must ensure sufficient aisle space to provide access for inspections and to improve the ease of material transport; storing materials away from high-traffic areas to reduce the likelihood of accidents that might cause spills or damage to drums, bags, or containers; stacking containers in accordance with the manufacturers' directions to avoid damaging the container or the product itself; storing containers on pallets or equivalent structures; delegating the responsibility for management of hazardous materials to personnel trained and experienced in hazardous substance management. Also covering hazardous materials and areas where such materials are handled reduces potential contact with stormwater and wind.

i. Materials Management

Responsible management of common chemicals, such as fertilizers, solvents, paints, cleaners, and automotive products, can

significantly reduce polluted runoff. Such products must be handled properly in all stages of development, use, and disposal. Materials management entails the selection of the individual product, the correct use and storage of the product, and the responsible disposal of associated waste(s).

Practices for managing materials are improving maintenance of industrial machinery, establishing material storage and inventory controls, improving routine cleaning and inspection of facilities where materials are stored or processed, maintaining organized workplaces, and educating employees about the benefits of the above practices. Maintenance associated with materials management should be designed to minimize the amounts of materials used and the wastes generated by industrial processes. Procedures for operation and maintenance can be easily integrated into an industry's management plan. Simple processes, such as routine cleaning of work spaces, proper collection and disposal of wastes, maintenance of machinery, regular inspections of equipment and facilities, and training employees to respond to spills or leaks, have significant effects on reducing the potential to pollute stormwater runoff.

j. **Municipal Facilities Management**

Municipalities own and operate numerous facilities, including maintenance yards, parks, office buildings, schools, and other city owned properties. The objective of managing stormwater at municipal facilities is to prevent pollutants released during city activities from entering storm drain systems or receiving waters.

To effectively prevent or reduce stormwater pollution, the municipality should inventory its facilities and associated activities to assess potential impacts on stormwater quality and revise activities or implement new measures as needed. These activities and control measures should be described in a stormwater pollution prevention plan (SWPPP) or a similar document that describes management actions that will be taken to reduce pollution from the site or activity. Training on stormwater best management practices (BMPs) and principles should be provided to all municipal facilities maintenance staff, and they should have clear guidance on how to use appropriate stormwater practices during typical maintenance operations and facility management activities.

k. **Spill Response and Prevention**

Spill response and prevention plans should clearly state how to stop the source of the spill, how to contain and clean up the spill, how to dispose of contaminated materials, and how to train personnel to prevent and control future spills.

Identify potential spill or source areas, such as loading and unloading, storage and processing areas, places that generate dust or particulate matter, and areas designated for waste disposal. Also, spill potential should be evaluated for stationary facilities, including manufacturing areas, warehouses, service stations, parking lots, and access roads. Material handling procedures and storage requirements should be defined and actions should be taken to reduce spill potential and impacts on stormwater quality.

Implementation Schedule

- Year 1: Start training of key employees; Plan & procedures in place for storm drain and catch basin maintenance. Plan will include strategy for identifying additional catch basins for cleanup and maintenance. Plan & procedures in place for parking lots & street sweeping.
- Year 2: Complete training of key employees and Plan & procedures in place for storm drain and catch basin maintenance. Plan & procedures in place for parking lots & street sweeping.
- Year 3: Automobile & septic system public outreach programs completed. Municipal procedures in place for hazardous material management and Municipal procedures in place for spill prevention control.
- Year 4: Municipal procedures in place for used oil recycling.
- Year 5: Automobile & septic system public outreach programs Implemented

D- Responsible Persons

The implementation of the Municipality of Las Marias Storm Water Management Plan will be on charge of an multi-departmental team. The team members are:

- Mr. Edwin Soto Santiago – Mayor (Municipality Representative)
- Mr. Victor Miranda Ramos – Federal Programs Director (Team Coordinator)
- Mr. Mario Jorge Quintana – Mayor’s Special Helper
- Mr. Gabriel Vientos Rosas – Municipality Public Works Department’s Director
- Mr. Luis Rodriguez Aponte – Municipality Police Department Director
- Mr. Omar Santiago Velez – Municipality Emergency Management Office Director