Georgia Stormwater Management Manual

Volume 3

Pollution Prevention Guidebook

First Edition
April 2012

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GEORGIA STORMWATER MANAGEMENT MANUAL

Volume 3:
Pollution Prevention Guidebook

First Edition – April 2012

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Prepared by:

ATLANTA REGIONAL COMMISSION

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Preface

Stormwater management has entered a new phase in the state of Georgia. The requirements for NPDES municipal and industrial stormwater permits, TMDLs, watershed assessments and the desire to protect human life, property, aquatic habitats and the quality of life in our communities has brought home the pressing need to manage both stormwater quantity and quality from our developed and developing areas.

The goal of the Georgia Stormwater Management Manual documents is to develop and promote a consistent and effective approach and implementation of stormwater management in the state. This Volume (the Pollution Prevention Guidebook) will help Georgia move forward with a comprehensive approach to stormwater management that incorporates pollution prevention in the overall protection of water quality and our shared water resources.

Acknowledgements

This Manual is the culmination of a collaborative effort between the Atlanta Regional Commission (ARC), the Georgia Department of Natural Resources-Environmental Protection Division (Georgia EPD) and local governments in Georgia. This document reflects the hard work, time and contributions of many individuals.

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Thanks to the members of the Technical Review Team which met regularly to review the progress of the Manual and provide invaluable technical and policy feedback.

Finally, thank you to all those who took the time and effort to provide review comments and constructive suggestions on the draft versions of the Manual.

– Steve Haubner, *Atlanta Regional Commission / Project Manager and Editor*

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INTRODUCTION

Objective of the Manual

The objective of the Georgia Stormwater Management Manual is to provide guidance on addressing stormwater runoff. The goal is to provide an effective tool for local governments and the development community to reduce both stormwater quality and quantity impacts, and protect downstream areas and receiving waters.

This Manual does not cover construction site sediment and erosion control practices. Guidance on these practices can be found in the *Manual for Erosion and Sediment Control in Georgia*.

Organization of the Manual

The Georgia Stormwater Management Manual is organized as a three volume set, each volume being published as a separate document. You are currently reading Volume 3 of the Manual.

Volume One of the Manual, the *Stormwater Policy Guidebook*, is designed to provide guidance for local jurisdictions on the basic principles of effective urban stormwater management. Volume 1 covers the problem of urban stormwater runoff and the need for local communities to address urban stormwater quantity and quality, stormwater management minimum standards, and guidance on local stormwater programs. It also provides an overview of integrated stormwater management, site and watershed level stormwater management, floodplain management, and technology and tools for implementing stormwater management programs.

Volume Two of the Manual, the *Technical Handbook*, provides guidance on the techniques and measures that can be implemented to meet a set of stormwater management minimum standards for new development and redevelopment. Volume 2 is designed to provide the site designer or engineer, as well as the local plan reviewer or inspector, with all of the information required to effectively address and control both water quality and quantity on a development site. This includes guidance on better site design practices, hydrologic techniques, criteria for the selection and design of structural stormwater controls, drainage system design, and construction and maintenance information.

Volume Three, the *Pollution Prevention Guidebook*, is a compendium of stormwater pollution prevention and control measures for use by local jurisdictions, businesses and industry, and local citizens.

Users of This Volume

Volume 3 of the Manual contains stormwater good housekeeping practices, pollution prevention practices and protocols, and control measures for specific operations and activities for the prevention of nonpoint sources of pollution in Georgia. The target audience of this document includes:

- Local governments and other government agencies, who can utilize the document as part of their Georgia NPDES Municipal Stormwater (MS4) permit stormwater management program for public education and outreach, addressing illicit discharges and illegal connections, and municipal stormwater good housekeeping efforts;

- Industries, businesses, governmental agencies and institutions required to have coverage under Georgia's NPDES Industrial Stormwater general permit (Georgia IGP) who can use the pollution prevention and control measures in the document in preparation of a Stormwater Pollution Prevention Plan (SWPPP);
- Other businesses and commercial entities who may use the document to address stormwater pollution concerns and/or meet local government regulations or licensing requirements; and
- Homeowners and other citizens who can utilize the pollution prevention and control measures to address potential stormwater pollution from everyday activities such as lawn care and landscaping, auto maintenance, and exterior renovations.

Volume 3 has applications to surface water protection plans, watershed management and improvement plans, and local source water protection, and can serve as a resource for local nonpoint source pollution control efforts.

How to Use This Volume

The following is a guide to the various chapters of Volume 3 of the Manual.

- **Chapter 1 –** Provides an overview of the types and sources of stormwater pollutants and their impacts, an introduction to stormwater pollution prevention, and summary of the regulatory programs for stormwater and nonpoint source pollution prevention within Georgia.
- **Chapter 2 –** Presents general pollution prevention guidance for businesses, facilities and mobile operations; information for facilities that are covered by the Georgia IGP, including the steps for preparing a SWPPP; and assistance for local governments on developing stormwater pollution prevention and good housekeeping programs.
- **Chapter 3 –** Contains the pollution prevention and control measures for commercial, industrial, institutional and local government operations and activities.
- **Chapter 4 –** Contains pollution prevention and control measures intended for homeowners and residents.
- **Appendix A –** Worksheets to assist in the pollution prevention planning.
- **Appendix B –** Lists the industrial facilities and activities covered under the Georgia IGP.
- **Appendix C –** Lists the Georgia communities covered by the NPDES MS4 permit.

Regulatory Status of the Manual

This Manual has been developed to provide guidance on the latest and most relevant stormwater management strategies and practices for the state of Georgia. The Manual itself has no independent regulatory authority. The minimum requirements and technical guidance included in the Manual can only become required through:

(1) Ordinances and rules established by local communities; and

(2) Permits and other authorizations issued by local, state and federal agencies.

Adoption of either the Georgia Stormwater Management Manual – Volume 2 (or Coastal Supplement in coastal areas), or an equivalent stormwater design manual, is required for all municipalities in Georgia covered under the National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater permit.

How to Get Printed Copies of the Manual

Printed copies of the Manual can be ordered by calling 404-463-3102 or ordered online at the following web address:

http://www.atlantaregional.com

How to Find the Manual on the Internet

All three volumes of the Georgia Stormwater Management Manual are also available in Adobe Acrobat PDF document format for download at the following web address:

http://www.georgiastormwater.com

Contact Information

If you have any technical questions or comments on the Manual, please send an email to:

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CHAPTER

1

STORMWATER POLLUTION PREVENTION

Stormwater pollution prevention is aimed at reducing and/or preventing the contamination of stormwater runoff at its source, *before* it has an opportunity to pollute the runoff flow and enter the stormwater drainage system. Stormwater pollution prevention practices, also known as source controls, are an important way to prevent water quality problems from a variety of sources.

The purpose of this chapter is to provide an introduction to stormwater pollution prevention, an overview of the types and sources of stormwater pollutants and their impacts, as well as some of the regulatory programs for stormwater and nonpoint source pollution prevention within Georgia.

1.1 Overview

Every time it rains, water that isn't absorbed by the ground or vegetation runs off of the land. This is known as *stormwater runoff*. As it flows off of rooftops, parking lots, industrial areas and residential lawns, stormwater can pick up any contaminants or pollutants along the way as shown in Figure 1-1.

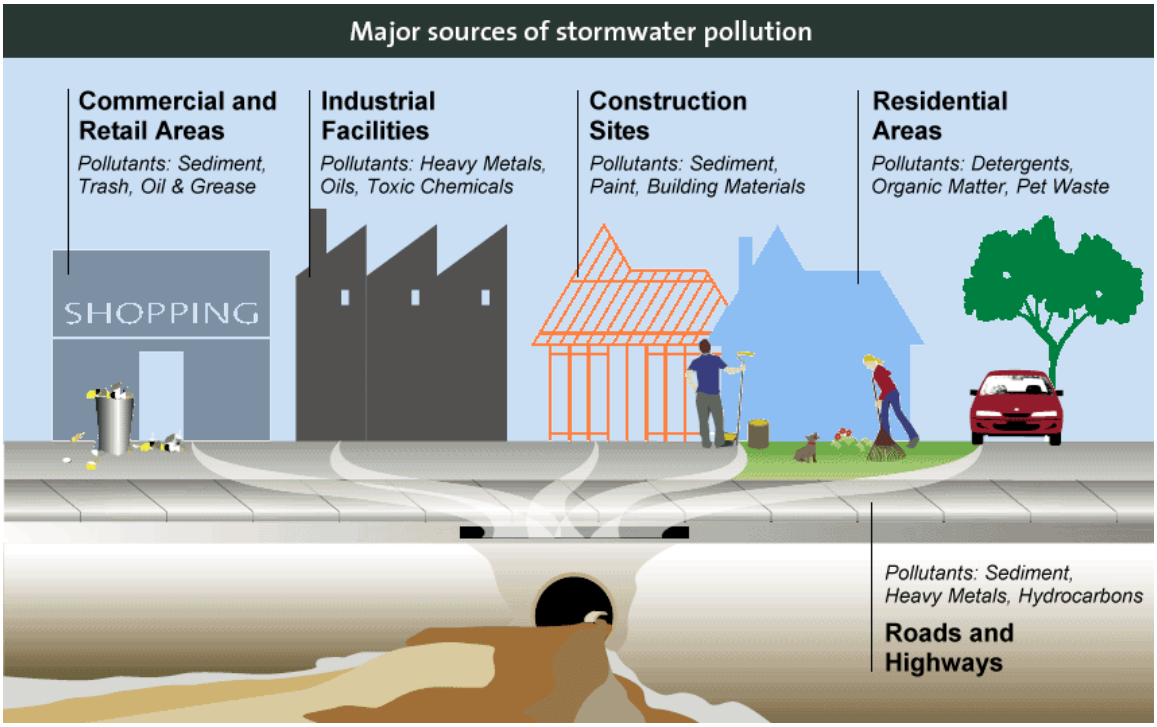

Figure 1-1 Major Sources of Stormwater Pollution
(modified from www.melbournewater.com.au)

Unlike sewage, which goes to treatment plants to remove contaminates, polluted stormwater runoff flows untreated into stormwater drains and drainage swales where it is carried to the nearest stream, river, lake, estuary or coastal water. This type of water pollution is known as *nonpoint source pollution* because the sources of contamination come from many dispersed locations that, while each may be very small, cumulatively have a significant impact.

The everyday actions and activities of businesses, institutions and government, and average citizens and homeowners have the potential to contribute to nonpoint source pollution and polluted stormwater runoff. These might include outdoor industrial activities, pressure washing, or lawn care and maintenance. In each of these examples, there are steps that can be taken to reduce the potential for water quality impacts.

The intent of stormwater pollution prevention is to reduce the presence of harmful pollutants as well as to prevent stormwater from coming in contact with those pollutants resulting from activities in a variety of commercial, industrial, institutional, municipal and residential settings. It is aimed at preventing the contamination of stormwater runoff at its source, before it has an opportunity to pollute runoff and enter the stormwater drainage system.

Stormwater pollution prevention covers a wide variety of management practices, protocols and procedures that, when used singly or in combination, focus on reducing the release of pollutants to stormwater and receiving waters.

1.2 Stormwater Pollutants, Sources and Impacts

Stormwater pollution is caused by a variety of pollutants that come in contact with either rainwater or the resulting stormwater runoff. The broad categories of pollutants in stormwater and their effects are described below.

1.2.1 Sediment

Sediment, often originating as topsoil, sand, and clay, is the most common pollutant in stormwater runoff. Sediment readily erodes from exposed soil and washes off paved surfaces when it rains. Sediment is carried away by stormwater as suspended and dissolved solids, causing a variety of problems in receiving waters:

- Excessive sediment concentrations can be detrimental to aquatic life by interfering with photosynthesis, respiration, growth and reproduction.
- High turbidity due to sediment increases the cost of treating drinking water, and reduces the value of surface waters for recreational and industrial use.
- Uncontrolled sediment can also fill ditches and small streams as well as clog storm drains and pipes, leading to flooding and property damage in addition to increased private and public maintenance costs.
- Sedimentation can reduce the capacity of reservoirs and lakes, reduce the depth of navigation channels, fill harbors and silt estuaries.

Figure 1.2 Sediment is the Most Common Stormwater Pollutant

- Many other pollutants including nutrients, bacteria, heavy metals and hydrocarbons tend to attach to soil particles. Therefore, sediment can transport a variety of other pollutants to receiving waters, causing a host of additional water quality problems.

The primary sources of sediment in stormwater runoff include construction sites without adequate erosion and sedimentation controls, exposed soils, sand and gravel storage, street and parking lot runoff and streambank erosion. However, other sources include a wide variety of activities such as pressure washing and sandblasting operations, street and highway maintenance, landscaping, and the washing of vehicles and heavy equipment.

1.2.2 Nutrients

Nutrients such as phosphorus and nitrogen compounds are necessary for plant growth. High levels in stormwater runoff, however, can result in a number of water quality problems in receiving waters, affecting their use for recreation, water supply and aquatic life:

- Increased nutrient levels promote excessive weed and algae growth in slow moving streams, lakes and estuaries. Algae blooms block sunlight from reaching underwater plants and deplete oxygen in the water column from plant decay.
- This can result in unpleasant odors, unsightly surface scum, and harm to aquatic organisms due to lowered dissolved oxygen levels.
- Some forms of algae are toxic to fish and other aquatic life, and can also cause harm to animals that drink affected water.
- Algae can also cause taste and odor problems in drinking water, as well as clog water intakes and infrastructure.
- Forms of nitrogen (ammonium), in combination with pH and temperature variations, can further consume dissolved oxygen and cause harm to fish and other aquatic organisms.
- Nitrates can contaminate groundwater supplies.

Sources of nutrients in stormwater runoff include fertilizers, detergents, failing septic systems, pet and animal wastes, automobile emissions, eroded soils, and organic matter such as leaves and lawn clippings.

1.2.3 Bacteria

Fecal coliform bacteria in water may indicate the presence of pathogenic (disease-causing) bacteria, viruses and other microorganisms. Pet and other animal wastes, food wastes, failing septic systems, and some fertilizers can all contribute harmful bacteria, viruses and microorganisms to stormwater runoff. Bacteria increases nutrient levels in stormwater, which can lead to toxic algal blooms.

Pathogen levels that exceed public health standards may limit the recreational uses of a water body and increase drinking water treatment costs. Microbial contamination can also lead to the closure of shellfish harvesting areas and swimming beaches.

Figure 1.3 Bacteria and Other Pathogens Can Limit Recreational Use of Water

1.2.4 Organic Matter

In addition to being a source of nutrients, the decomposition of organic matter in water uses up dissolved oxygen, which is essential to fish and other aquatic life. Therefore, stormwater runoff carrying organic matter can rapidly deplete dissolved oxygen levels in receiving waters. If dissolved oxygen levels in water become too low, fish and other aquatic animals can become stressed or die. Slow moving waters are particularly susceptible to oxygen depletion due to the lack of aeration of the water by turbulence. All forms of organic matter contribute to the problem including leaves, glass clippings, other plant debris, food wastes, pet and animal wastes, and sewage from failing septic systems.

1.2.5 Oils, Greases and Fuels

Oils, greases and fuels contain a wide array of hydrocarbon compounds that are harmful to water quality in receiving waters. Many of these compounds are known to be toxic to aquatic organisms at relatively low concentrations. Oil films can also make oxygen transfer difficult. In larger quantities, oils and fuels can impact drinking water supplies and affect recreational use of waters. Oil and grease can also clog drainage facilities, leading to increased maintenance costs and potential flooding problems.

There are many sources of oils, greases and fuels which can come into contact with stormwater runoff: leakage from vehicles onto paved and unpaved surfaces, industrial activities, fuel spills, substandard storage, improper disposal, and food preparation (both commercial and retail).

1.2.6 Heavy Metals

Many metals, including lead, zinc, cadmium, copper, nickel, mercury, arsenic, chromium and cyanide can be found in stormwater runoff in trace amounts. Many surfaces in the man-made environment (such as galvanized metal, painted surfaces, automobiles and treated wood) contain heavy metals, which are picked up by stormwater as they corrode, flake, decay or leach. Other sources of metals include corroding pipes and storage tanks, pesticides and industrial wastes. Heavy metals are a concern because they are toxic to aquatic organisms, concentrate in bottom sediments, can bioaccumulate in the food chain, and have the potential to contaminate drinking water supplies. Industrial and manufacturing areas and scrap yards are typical sources of high concentrations of metals in runoff.

1.2.7 Toxic Chemicals

Toxic chemicals, including organic compounds such as pesticides, PCBs, phenols, glycol ethers, esters, nitrosamines and other nitrogen compounds can be carried by stormwater into receiving waters and are particularly dangerous in the aquatic environment. These chemicals are extremely toxic to aquatic organisms. In addition, many organic compounds can bioaccumulate causing problems higher in the food chain for birds, other animals and humans. Toxic organic compounds can also impair drinking water supplies and accumulate long-term in the sediments of river, lakes and estuaries. Common sources of these chemicals include the excessive application of pesticides or application shortly before rainfall, wood preservatives, antifreeze, dry cleaning chemicals, solvents and cleansers, and a variety of other chemical products.

1.2.8 Abnormal pH

The pH value of water is an indication of its relative acidity. Though the pH scale is from 0 to 14, a value of 6 to 8 is the normal and desirable range for most bodies of water. A pH level outside this range, either higher (more basic) or lower (more acidic), will adversely affect both aquatic plant and animal life. There are several sources that can contribute to an abnormal pH in stormwater runoff, including industrial processes that discharge acidic or alkaline wastewater, cement and concrete production, and chemical cleaners used in homes and businesses.

1.2.9 Trash and Debris

Trash, floatables and other debris are picked up by stormwater runoff and washed into streams, rivers, lakes and estuaries. While the primary impact is often the aesthetic “eyesore” and resulting reduction in recreational value, trash and debris can also be detrimental to some fish and terrestrial animal species.

In drainage pipes, ditches and smaller streams, trash and debris has the potential to cause blockages resulting in localized flooding and erosion.

Figure 1.4 Trash and Debris are Major Stormwater Pollutants

1.3 Stormwater Pollution Prevention

Stormwater pollution prevention covers a wide variety of management practices, protocols and procedures that, when used singly or in combination, focus on reducing the presence of pollutants and preventing stormwater from coming in contact with pollutants.

Pollution prevention is aimed at preventing the contamination of stormwater runoff at its source, before it has an opportunity to pollute the runoff flow and enter the stormwater drainage system. Also known as "source controls," pollution prevention practices are the most cost-effective way to address water quality problems.

There are six major components of stormwater pollution prevention, which are discussed in further detail below:

- Pollution Prevention and Good Housekeeping Practices
- Materials Management
- Spill Prevention and Response
- Elimination of Illicit Discharges and Illegal Connections
- Maintenance of the Stormwater System
- Education and Training

1.3.1 Pollution Prevention and Good Housekeeping Practices

Pollution prevention and good housekeeping are aimed at preventing or minimizing pollutants by undertaking activities in a way that eliminates, or greatly reduces, the likelihood of contaminants getting into stormwater.

There are a number of ways that stormwater pollution can be reduced or eliminated including:

- **Altering an activity** – Modifying an activity or process to prevent or reduce the release of pollutants
- **Covering an activity** – Covering an activity or process on a temporary or permanent basis to avoid it from coming into contact with rainwater or stormwater runoff
- **Enclosing an activity** – Enclosing or bringing an activity or process indoors to avoid the potential for polluting stormwater
- **Preventing contact with stormwater runoff** – Locating materials and activities away from concentrated flows of stormwater *and/or* using berms, curbing and other methods to divert stormwater away from materials, activities and areas of potential contamination
- **Prohibiting actions** – Preventing or prohibiting actions or activities that directly cause pollutants to come into contact with stormwater or enter the stormwater drainage system
- **Routine cleaning and good housekeeping** – Regular scheduled cleaning to reduce pollutants and good housekeeping practices designed to maintain a clean work or home environment
- **Preventive maintenance** – Routine inspections and preventive maintenance of equipment, outdoor storage and activity areas, and structural pollution prevention practices
- **Properly disposing of wastes** – Following proper methods for the storage, handing and disposal of solid, liquid, food and hazardous wastes

Table 1-1 provide a number of examples of pollution prevention practices for the each of the prevention methods listed above.

Table 1-1 Examples of Pollution Prevention Practices

Pollution Prevention Method	Commercial-Industrial-Institutional-Municipal	Residential
Altering an activity	• Using high-pressure sprayers and as little water as possible when pressure washing • Discharging pool water to a sanitary sewer rather than the stormwater drain	• Sweeping or bagging grass clippings rather than blowing or washing off paved areas • Avoiding fertilizer and pesticides application when rain is expected
Covering an activity	• Covering loading/unloading areas • Protecting outdoor stockpiles with a secure waterproof cover	• Covering mulch piles
Enclosing an activity	• Moving industrial activities indoors • Storing hazardous materials and wastes in a locked shed	• Performing vehicle maintenance and repair activities in an enclosed garage
Preventing contact with stormwater runoff	• Diverting stormwater flow away from concrete production and pouring areas using berms • Placing covers on nearby stormwater drains when painting or doing surface preparation	• Washing vehicles on the lawn rather the driveway • Picking up pet waste
Prohibiting actions	• No refueling of vehicles or equipment near a stormwater drain • Never applying chemicals when it is raining or when rain is forecast	• No dumping of used motor oil into a stormwater drain
Routine cleaning and good housekeeping	• Sweeping production work areas on a regular basis • Regularly cleaning up parking lots and outside areas at restaurants	• Sweeping driveways and other paved surfaces
Preventive maintenance	• Inspecting heavy equipment for leaks or loose fittings • Checking liquid storage secondary containment systems for leaks	• Checking vehicles for oil and other fluid leaks • Performing regular septic system maintenance
Properly disposing of wastes	• Not disposing liquid wastes in dumpsters • Recycling and/or properly disposing of fats, oils and grease	• Keeping the lids on garbage and recycling dumpsters closed at all times

1.3.2 Materials Management

Responsibly managing chemicals and other potential polluting materials such as paints, solvents, cleaning agents, fertilizers and pesticides, can significantly reduce stormwater runoff pollution. *Materials management* is a subset of pollution prevention practices that entails the selection of individual chemicals or products, the correct use and storage of the chemical or product, and the responsible disposal of associated wastes. Proper management reduces the likelihood of releases of materials or accidental spills.

Practices for managing materials include:

- **Materials selection** – Careful selection of the material(s) to be used, including consideration of less toxic alternatives
- **Materials inventory** – Regular material inventories to understand what materials are present and how they are stored, and to reduce the overstocking of materials
- **Proper material storage** – Proper storage of materials to minimize leaks, spills, and runoff that can pollute stormwater
- **Routine inspection and maintenance** – Regular inspection and maintenance of material storage and processing areas as well as cleaning of these areas as needed
- **Minimizing materials used** – Minimize the amounts of materials used and the wastes generated as much as possible, including recycling, reclaiming and reuse of materials

1.3.3 Spill Prevention and Response

Spills and leaks are major contributors to stormwater pollution and can adversely impact water quality in receiving waters. *Spill prevention* and *spill response* are critical to effective stormwater pollution prevention efforts.

Spill prevention involves implementing practices and protocols for avoiding the potential of material spills and leaks, and consists of three primary steps:

1. Identifying where and how spills and leaks are likely to occur, and where they would come in contact with stormwater runoff or drain to;
2. Implementing appropriate measures to prevent spills and leaks including standard operating procedures, appropriate storage and good housekeeping practices, leak detection devices, and structural containment features; and
3. Regular inspections to check for leaks and spills as well as ongoing preventive maintenance activities and repairs.

Spill response deals with effectively responding to spill and leaks when they occur in order to minimize the discharge of pollutants to the environment. A spill can be a one-time event, a continuous leak or frequent small spills, and a spill response effort must address all potential types of spills. Spill response can range from the use of a spill cleanup kit for minor leaks and spills to a major effort involving specialized equipment and personnel in the case of the large release of hazardous materials or wastes.

1.3.4 Elimination of Illicit Discharges and Illegal Connections

Another potential source of water quality impairment to the stormwater drainage system is the presence of non-stormwater discharges. Known as an *illicit discharge*, these direct or indirect non-stormwater discharges can include sewage, process wastewater, washwater and any type of polluted water, or liquid or solid contaminant that reaches the stormwater system.

An illegal connection is any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the stormwater drainage system from indoors or outdoors.

Many business and building owners or operators are not aware that improper connections exist in their facilities. Identifying and addressing illicit discharge and illegal connections is a key measure for reducing stormwater pollution and should be undertaken by facility owners as well as local governments through illicit discharge detection and elimination (IDDE) programs.

1.3.5 Maintenance of the Stormwater System

Pollutants can accumulate over time in various components of the stormwater collection, conveyance and treatment systems, including stormwater drains, catch basins, drainage ditches and structural stormwater controls. These pollutants can include sediment and other substances such as organic matter, trash and debris, and toxic chemicals. When a storm event occurs, the pollutants can become mobilized and carried into the downstream surface waters.

Thus, regular inspection and maintenance of stormwater drainage and management systems, both private and public, is a critical component of stormwater pollution prevention. Maintaining stormwater drains, catch basins and other stormwater conveyance and control structures on a regular basis will remove pollutants, prevent clogging of the conveyance system, restore structural control pollutant treatment capabilities, and ensure the system functions properly to avoid flooding and damage to property and infrastructure.

1.3.6 Education and Training

Because stormwater runoff is generated from everywhere—parking lots, residential yards, public parks, school playgrounds and industrial yards—efforts to prevent stormwater pollution must consider individual, household, commercial, institutional and public behaviors and activities that can generate stormwater pollutants.

Public Education and Outreach

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 multi-pronged approach to public education and outreach efforts includes:

1. Generating basic awareness of stormwater pollution;
2. Educating at a more sophisticated level using more substantive content; and
3. Building on existing recognition of the issue to prompt behavior changes that reduce stormwater pollution and the opportunities for pollution

Public education and outreach is typically undertaken by local governments and utilities, which are responsible for their stormwater drainage system and water quality issues. Education and outreach efforts can take many forms, including:

- Public mass media campaigns
    - Press articles in local newspapers
    - Radio and television advertisements and public service announcements (PSAs)
    - Outdoor advertising (billboards, public transit)
    - Other advertising (newspaper and local magazines, movie theater PSA's)
- Printed materials
    - Brochures and fact sheets
    - Direct mailings and bill inserts
    - Educational computer media (CD-ROM and DVD)
    - Posters

- Internet
    - Website
    - Banner ads
    - Email newsletter
    - Social media
- Outreach and involvement activities
    - Workshops
    - Events
    - Kiosks / exhibits
    - Promotional items
- Efforts for targeted audiences
    - Schools and students
    - Specific businesses and commercial entities
    - Industrial facilities
    - Homeowners

Employee Training

Employee training is another important component of stormwater pollution prevention, as it is critical to the implementation of any commercial, industrial, institutional or municipal pollution prevention program. Employees need to be informed about stormwater pollution and the relevant practices and protocols in place, as well as their role in stormwater pollution prevention.

The purpose of stormwater pollution prevention training is to teach personnel at all levels of responsibility the components of the pollution prevention program. When properly trained, staff are more capable of preventing stormwater pollution, responding safely and effectively to material spills and leaks, and recognizing situations that could lead to water quality pollution.

Some recommended employee training techniques include:

- Conduct regular training of employees on proper stormwater pollution prevention practices and protocols, as well as proper safety methods to reduce the potential that materials or equipment will be mishandled or misused. It also reduces the chance of injury, loss of materials, and release of contaminants.
- Incorporate information sessions on stormwater pollution prevention into other employee training programs.
- Discuss stormwater pollution prevention at employee meetings
- Promote stormwater pollution prevention concepts through posters, brochures, newsletters, etc.
- Post bulletin boards with updated stormwater pollution prevention procedures, tips and reminders.

All new employees should be trained as soon as possible, with refresher training offered on a regular basis for all employees. The complexity of implementing relevant management measures, the turnover of employees, and the effectiveness of the training will affect how often initial training and refresher sessions will need to be scheduled.

1.4 Pollution Prevention and Control Measures

This document includes pollution prevention guidance applicable to a number of potential polluting operations or activities. For each specific operation or activity, appropriate *pollution prevention and control measures* are detailed in Chapters 3 and 4. Each activity's section provides guidance on the relevant pollution prevention practices, protocols and controls that should be undertaken or implemented.

1.4.1 Commercial-Industrial-Institutional-Municipal Pollution Prevention and Control Measures

Pollution prevention and control measures for commercial, industrial, institutional and municipal (local government) entities are categorized by specific operations or activities. Table 1-2 below lists the 23 operations or activities for which measures are provided in Chapter 3. Table 1-3 details the potential stormwater pollutants associated with each operation or activity.

Table 1-2 Commercial-Industrial-Institutional-Municipal Operations and Activities

CATEGORY	OPERATIONS OR ACTIVITY
A. Materials Storage	• Storage of Bulk Materials • Storage of Liquid Materials • Storage of Scrap and Recyclable Materials
B. Materials Transfer and Disposal	• Loading and Unloading Operations • Fueling Operations • Solid Waste Handling and Transfer • Hazardous Material / Waste Management
C. Production and Construction	• Outdoor Manufacturing Operations • Outdoor Painting and Finishing • Construction, Remodeling, Repair & Demolition • Concrete and Asphalt Production & Installation • Chemical Application
D. Washing and Cleaning	• Interior Washing and Cleaning Activities • Pressure Washing and Surface Cleaning • Tool and Equipment Cleaning • Vehicle and Heavy Equipment Washing & Cleaning
E. Facilities Maintenance	• Landscaping, Lawn Care & Vegetation Management • Street and Highway Repair & Maintenance • Street and Parking Area Sweeping & Cleaning
F. Other Activities	• Restaurants and Food Service • Vehicle and Equipment Repair & Maintenance • Marina and Boat Operation & Maintenance • Swimming Pool and Spa Maintenance

Table 1-3 Commercial-Industrial-Institutional-Municipal Operations & Activities and Associated Stormwater Pollutants

OPERATIONS OR ACTIVITY	TARGETED POLLUTANTS									
	Sediment	Nutrients	Bacteria	Organic Matter	Oil & Grease	Heavy Metals	Toxic Chemicals	Abnormal pH	Trash & Debris	Other / Special Concerns
A1. Storage of Bulk Materials	●	●		●		●		●		Soluble Chemicals
A2. Storage of Liquid Materials		●		●	●	●	●	●		Liquid Pollutants
A3. Storage of Scrap and Recyclable Materials	●				●	●	●	●	●	Vehicle Fluids
B1. Loading and Unloading Operations	●	●		●	●	●	●	●	●	
B2. Fueling Operations					●	●	●		●	Gasoline & Fuels
B3. Solid Waste Handling and Transfer	●	●	●	●	●	●	●		●	
B4. Hazardous Material / Waste Management			●		●	●	●	●		Haz. Materials
C1. Outdoor Manufacturing Operations	●			●	●	●	●	●	●	
C2. Outdoor Painting and Finishing	●				●	●	●		●	Paints & Finishes
C3. Construction, Remodeling, Repair & Demolition	●	●		●	●	●	●	●	●	Const. Materials
C4. Concrete and Asphalt Production & Installation	●				●	●	●	●	●	
C5. Chemical Application						●	●		●	Pesticides
D1. Interior Washing and Cleaning Activities	●	●	●		●	●			●	Detergents
D2. Pressure Washing and Surface Cleaning	●	●		●	●	●			●	Detergents
D3. Tool and Equipment Cleaning	●	●			●	●	●	●	●	Detergents, Solvents
D4. Vehicle and Heavy Equipment Washing & Cleaning	●	●			●	●	●		●	Detergents
E1. Landscaping, Lawn Care & Vegetation Management	●	●	●	●	●	●	●		●	Pesticides
E2. Street and Highway Repair & Maintenance	●			●	●	●	●	●	●	Pesticides
E3. Street and Parking Area Sweeping & Cleaning	●	●		●	●	●			●	Vehicle Fluids
F1. Restaurants and Food Service			●	●	●		●		●	
F2. Vehicle and Equipment Repair & Maintenance	●				●	●	●		●	Vehicle Fluids
F3. Marina and Boat Operation & Maintenance	●	●	●	●	●	●	●		●	Detergents
F4. Swimming Pool and Spa Maintenance	●	●	●			●	●	●	●	Chlorine

1.4.2 Residential Pollution Prevention and Control Measures

Pollution prevention and control measures for residential activities are found in Chapter 4. These measures target the following household activities that have the potential to pollute stormwater and receiving waters:

- Yard and Lawn Care
- Vehicle Care and Maintenance
- Vehicle Washing and Detailing
- Household Hazardous Materials Use and Disposal
- Garbage and Recyclables
- Outdoor Cleaning and Pressure Washing
- Pet Waste
- Home Improvements, Maintenance and Repairs
- Swimming Pool and Spa Maintenance
- Septic Systems

Table 1-4 below details the potential stormwater pollutants resulting from each residential activity.

Table 1-4 Residential Pollution Prevention Activities and Associated Stormwater Pollutants

RESIDENTIAL ACTIVITY	TARGETED POLLUTANTS								
	Sediment	Nutrients	Bacteria	Organic Matter	Oils & Greases	Heavy Metals	Toxic Chemicals	Abnormal pH	Trash & Debris
R1. Yard and Lawn Care	●	●	●	●	●	●	●		●
R2. Vehicle Care and Maintenance	●				●	●	●		●
R3. Vehicle Washing and Detailing	●	●			●	●	●		●
R4. Household Hazardous Materials Use and Disposal					●	●	●	●	●
R5. Garbage and Recyclables	●	●	●	●	●				●
R6. Outdoor Cleaning and Pressure Washing	●	●			●	●	●		●
R7. Pet Waste		●	●	●					
R8. Home Improvements, Maintenance and Repairs	●				●	●	●	●	●
R9. Swimming Pool and Spa Maintenance	●	●	●			●	●	●	
R10. Septic Systems	●	●	●	●					

1.5 Regulatory Requirements for Stormwater Pollution Prevention

Local governments, industries and businesses, and institutions have specific requirements for stormwater pollution prevention under federal and Georgia stormwater management programs. Below is an overview of the key regulatory requirements.

1.5.1 Municipal NPDES MS4 Stormwater Permit Program (Phase I and II)

The National Pollutant Discharge Elimination System (NPDES) permit system was originally established by the U.S. Clean Water Act of 1972 to control wastewater discharges from various industries and wastewater treatment plants known as "point" sources. Congress amended the Clean Water Act with the Water Quality Act of 1987 to expand the NPDES permit program to address "nonpoint" source pollution through schedules for permitting municipal stormwater discharges. The Municipal Separate Storm Sewer System (MS4) stormwater discharge permit establishes guidelines for municipalities to minimize pollutants in stormwater runoff to the "maximum extent practicable."

Under Georgia EPD's MS4 permit program, local governments in regulated areas are required to establish a comprehensive stormwater management program (SWMP) and to develop a plan and program to control stormwater pollution discharges to waters of the State to the maximum extent practical and to eliminate non-stormwater discharges from entering the stormwater system.

This is accomplished through the implementation of a municipal program which includes such measures as structural and non-structural stormwater controls, best management practices (BMPs), regular inspections, enforcement activities, stormwater monitoring and public education efforts. Stormwater management ordinances, erosion and sediment control ordinances, development regulations and other local regulations provide the necessary legal authority to implement the stormwater management programs.

Phase I of MS4 program, issued in 1990, requires medium and large cities or certain counties with populations of 100,000 or more to obtain NPDES permit coverage for their stormwater discharges and develop and implement a SWMP in conformance with their permit application.

Phase II, issued in 1999, extends the NPDES MS4 permit program to smaller communities. The Phase II rules take a slightly different approach to how the local stormwater management programs are implemented by requiring the SWMP to consist of the following six elements, termed "minimum control measures":

1. Public Education and Outreach
2. Public Participation / Involvement
3. Illicit Discharge Detection and Elimination
4. Construction Site Runoff Control
5. Post-Construction Runoff Control
6. **Pollution Prevention / Good Housekeeping**

A Phase II MS4 community is required to identify its selection of management practices and measurable goals for each minimum measure in the permit application.

The guidance provided in Section 2.3 includes information on developing a local stormwater pollution prevention and municipal good housekeeping program, and is specifically intended to help local governments meet their MS4 permit requirements under both the Phase I and Phase II programs. Appendix C provides a list of communities under the NDPES MS4 Phase I and II permit program in Georgia.

1.5.2 NPDES Industrial Stormwater Permit Program

In addition to the regulation of municipal stormwater, the federal National Pollutant Discharge Elimination System (NPDES) program requires that the discharge of stormwater from certain industrial activities be regulated. Discharge of stormwater from regulated facilities is managed under a single industrial general permit (IGP) issued by Georgia EPD.

The Georgia IGP is a multi-sector permit which requires specific categories of industrial facilities to apply for permit coverage. These sectors of industrial activity, which are based on federal Standard Industrial Classification (SIC) codes, include:

- Timber products
- Paper and allied products
- Chemical and allied products
- Asphalt paving, roofing materials and lubricants
- Glass, clay, cement, concrete and gypsum products
- Primary metals
- Transportation equipment, industrial or commercial machinery
- Electronic, electrical, photographic and optical goods
- Oil and gas extraction
- Mining and dressing
- Hazardous waste treatment, storage or disposal facilities
- Landfills, land application sites and open dumps
- Automobile salvage yards
- Scrap recycling facilities
- Steam electric generating facilities
- Land transportation and warehousing
- Water transportation maintenance/cleaning
- Ship and boat building and repairing yards
- Air transportation facilities
- Treatment works
- Food and kindred products
- Textile mills, apparel and other fabric product manufacturing; leather and leather products
- Furniture and fixtures
- Printing and publishing
- Rubber, miscellaneous plastic products, and miscellaneous manufacturing activities
- Leather tanning and finishing
- Fabricated metal products

In addition, the IGP also covers stormwater discharges from any industrial activity designated by EPD based on its potential for contribution to a violation of a water quality standard or for significant contribution of pollutants to Waters of the State.

Provisions of the permit require a facility to select, design, install and implement appropriate pollution prevention and control measures and to prepare a site-specific Stormwater Pollution Prevention Plan (SWPPP). More details on the Georgia IGP and SWPPP development can be found in Section 2.2.

1.5.3 Total Maximum Daily Load (TMDL) Program

Under Section 303(d)/305(b) of the Clean Water Act, the State of Georgia is required to develop a list of impaired waters that do not meet water quality standards. Georgia EPD must then establish priority rankings for waters on the list and develop Total Maximum Daily Loads (TMDLs) for listed waters. The TMDL specifies the maximum amount of a specific pollutant of concern that a designated segment of a water body can receive and still meet water quality standards. The TMDL also allocates pollutant loadings among point and nonpoint pollutant sources, including stormwater runoff. A number of TMDLs have been issued for water bodies across the state.

For each pollutant identified, a TMDL monitoring plan must be developed by the jurisdiction responsible for stormwater management. Further, a jurisdiction may voluntarily elect to develop a Watershed Improvement Plan (WIP) that follows the U.S. EPA's 9-key elements for watershed planning. The objective of a WIP is to identify and prioritize significant sources of pollution causing impairment in a watershed, determine effective management practices that will reduce pollutant loads from those sources, and seek funds and other resources to install the pollution controls and restore water quality in the impaired water body. Preparation of the WIP typically takes place in two or more workplans with dedicated funding and an allotted time period of one year per workplan.

The control measures included in Chapters 3 and 4 can serve as a resource in the development of a WIP.

1.5.4 Source Water Assessment Program (SWAP)

The 1996 amendments to the Federal Safe Drinking Water Act brought about a new approach for ensuring clean and safe drinking water served by public water supplies known as the Source Water Assessment Program. The U.S. EPA is advocating prevention as an important tool in the protection of public drinking water sources from contamination. In order to implement source protection, an assessment of potential pollutant sources in water supply watersheds must be conducted. The goals of this assessment project will be reached through implementation of a four-step method which includes watershed delineation, inventory of potential pollutant sources within the watershed, analysis of susceptibility of a water intake to the pollutant sources, and communication of this information to the public.

As many pollutants can enter waterways and reservoirs through stormwater drainage systems, local SWAP efforts provide an informational resource to local stormwater pollution prevention and mitigation programs. Water supply protection efforts to control the identified potential pollution sources should be coordinated with and included as part of a local stormwater pollution prevention program.

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CHAPTER

2

STORMWATER POLLUTION PREVENTION PLANNING

Stormwater pollution prevention planning involves the assessment of the potential for stormwater pollution, followed by the development of a plan or program to reduce or eliminate the potential for pollution and water quality impairment.

This chapter provides pollution prevention guidance for three different groups:

- General guidance on pollution prevention planning for small and large businesses, institutions, and other facilities and mobile operations that are not required to apply for a stormwater discharge permit for industrial activities.
- Guidance for facilities that are covered by the Georgia NPDES Industrial Stormwater general permit (IGP) program, including development of a Stormwater Pollution Prevention Plan (SWPPP).
- Guidance for local governments on developing stormwater pollution prevention and good housekeeping programs under the Georgia NPDES Municipal Separate Storm Sewer System (MS4) permit program.

2.1 General Stormwater Pollution Prevention Planning

2.1.1 Overview

Pollution prevention planning is the starting point in developing an effective program to address stormwater and nonpoint source pollution from a business, commercial entity, institution, construction or project site, or other facility or mobile operation.

Figure 2-1 illustrates the steps undertaken in pollution prevention planning that are described in this section.

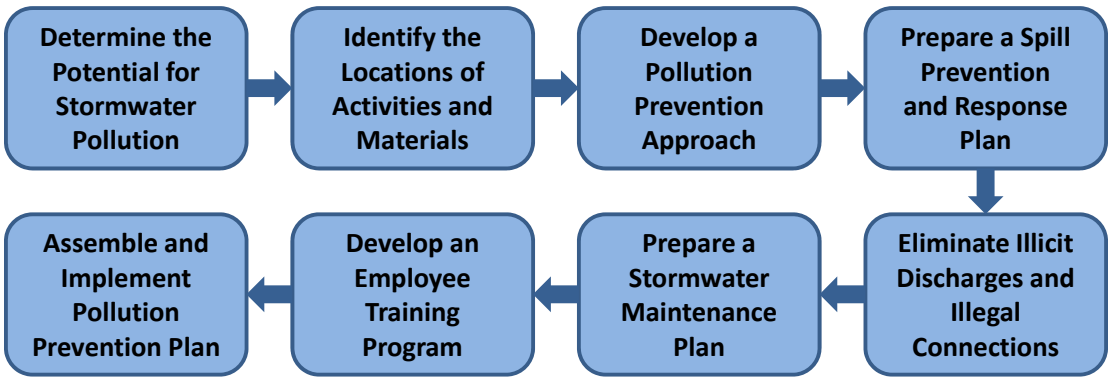

Figure 2-1 Pollution Prevention Planning Process

2.1.2 Step 1: Determine the Potential for Stormwater Pollution

Pollution prevention is aimed at preventing the contamination of stormwater runoff at its source, before it has an opportunity to pollute the runoff flow and enter the stormwater drainage system. Therefore, a thorough understanding of the potential sources is necessary in order to address and mitigate them.

The first step in pollution prevention planning for a business, site, facility or mobile operation is to understand and assess the potential for stormwater pollution. This is typically undertaken by identifying and evaluating both the activities undertaken and the materials used by the entity.

Identify Potential Polluting Operations and Activities

Table 2-1 below is a list of potential polluting activities that can be used as a starting point in identifying potential polluting operations and activities that may take place at a business, site, facility or mobile operation.

Table 2-1 Potential Stormwater Polluting Operations and Activities

Materials Storage	• Storage of Bulk Materials • Storage of Liquid Materials • Storage of Scrap and Recyclable Materials
Materials Transfer and Disposal	• Loading and Unloading Operations • Fueling Operations • Solid Waste Handling and Transfer • Hazardous Material / Waste Management
Production and Construction	• Outdoor Manufacturing Operations • Outdoor Painting and Finishing • Construction, Remodeling, Repair & Demolition • Concrete and Asphalt Production & Installation • Chemical Application
Washing and Cleaning	• Interior Washing and Cleaning Activities • Pressure Washing and Surface Cleaning • Tool and Equipment Cleaning • Vehicle and Heavy Equipment Washing & Cleaning
Facilities Maintenance	• Landscaping, Lawn Care & Vegetation Management • Street and Highway Repair & Maintenance • Street and Parking Area Sweeping & Cleaning
Other Activities	• Restaurants and Food Service • Vehicle and Equipment Repair & Maintenance • Marina and Boat Operation & Maintenance • Swimming Pool and Spa Maintenance

In addition to the activities listed above, there may be other activities, processes and actions specific to the business, site, facility or mobile operation in question that may need to be addressed.

Worksheet 1 in Appendix A is provided to assist with the completion of this exercise. All of the regular actions and activities that take place or are undertaken by the entity should be considered. It should be noted that many businesses and facilities will have more than one of the above operations and activities taking place. Some case examples are below:

Example 1: Gas station with service/repair garage, car wash and sandwich shop

Relevant activities --

- Fueling Operations
- Vehicle and Equipment Repair & Maintenance
- Vehicle and Heavy Equipment Washing & Cleaning
- Restaurants and Food Service
- Street and Parking Area Sweeping & Cleaning
- Solid Waste Handling & Transfer

Example 2: Office park with multiple buildings, parking deck and cafe

Relevant activities --

- Street and Parking Area Sweeping & Cleaning
- Restaurants and Food Service
- Solid Waste Handling & Transfer

Example 3: Wholesale facility / warehouse for automotive parts and fluids

Relevant activities --

- Loading and Unloading Operations
- Hazardous Material / Waste Management
- Street and Parking Area Sweeping & Cleaning
- Solid Waste Handling & Transfer

Example 4: Small handyman company that undertakes home repairs, renovations, and landscaping

Relevant activities --

- Construction, Remodeling, Repair & Demolition
- Landscaping, Lawn Care & Vegetation Management
- Pressure Washing and Surface Cleaning
- Outdoor Painting and Finishing
- Fueling Operations
- Tool and Equipment Cleaning

Inventory and Evaluate Materials and Chemicals

In addition to the potentially polluting operations and activities, businesses, facilities, sites and mobile operations may have materials or chemicals on site and/or in use that may require special consideration. It is important not only to understand the type of materials and chemicals on site, but also how these materials and chemicals are handled and used. Knowledge of the type of materials, their locations and their use provides insight into the pollutants likely to be present, as well as their potential to contaminate stormwater and impact water quality.

It is often helpful to prepare an inventory of materials and chemicals used at the business, facility, site or operation. An inventory of potential pollutants consists of three major steps:

1. Identify all hazardous and nonhazardous substances present at a facility. This can be accomplished by reviewing all purchase orders for the facility and walking through the facility itself. Compile a list of all chemicals present at a facility and obtain a Material Safety Data Sheet (MSDS) for each one. Most facilities will already have an inventory of hazardous chemicals completed under OSHA requirements.

2. Label all containers with the name of the chemical, unit number, expiration date, handling instructions, and health or environmental hazards. Much of this information will be found on the MSDS. Often, insufficient labeling leads to improper handling or disposal of hazardous substances.
3. Make special note on the inventory of hazardous chemicals that require special handling, storage, or disposal.

Worksheet 2 in Appendix A may be useful in this regard in listing and documenting these materials and chemicals.

2.1.3 Step 2: Identify the Locations of Activities and Materials

Once a business, facility, site or mobile operation has assessed its activities and materials that may potentially lead to stormwater pollution, the next step is to identify where these operations and activities take place and where materials are located.

For many fixed (non-mobile) businesses, sites and facilities, this ideally involves preparing a site plan or document which provides information on the general physical layout of the site, the stormwater drainage and management system, and the locations of potentially polluting activities and materials. This should include the following:

- Buildings and other permanent structures
- Parking lots, roadways and other impervious areas
- Landscaped and turf grass areas
- Locations where the following activities or actions are undertaken:
    - Bulk material storage areas
    - Liquid material storage areas
    - Scrap and recyclable storage areas
    - Solid waste handling and storage areas
    - Hazardous material and waste handling and storage areas
    - Loading and/or unloading areas
    - Vehicle and equipment fueling areas
    - Vehicle, equipment and tool washing areas
    - Outdoor manufacturing areas
    - Areas where chemical applications take place
    - Food service including restaurants and cafeterias
    - Swimming pools, spas or fountains
- Other locations where there are activities or actions taking place that have the potential to generate stormwater pollutants or contaminate stormwater runoff
- Other locations where materials are likely to be exposed to stormwater
- Outline of each drainage area within the property boundaries
- All stormwater drains and discharge locations
- Surface water bodies (e.g., streams, rivers, lakes, marshes, bays, estuaries) that are located on or near the property which receive or may receive stormwater from the site
- Stormwater management structural controls, and nonstructural practices or credits that are part of the stormwater management system for the site

This site map or document can help a business, site, or facility identify and further target the critical locations for pollution prevention efforts and implementation.

2.1.4 Step 3: Develop a Pollution Prevention Approach

Following the assessment of potentially polluting activities and materials, and their locations, the next step is to identify appropriate pollution prevention practices, protocols and procedures which can form the basis of a comprehensive plan for the business, site, facility or mobile operation.

General Pollution Prevention Practices

The following are general pollution prevention practices that should be applied to any potential polluting operation or activity:

- **Minimize Use of Pollutants** – Examine the use of materials and chemicals and identify methods of reducing or eliminating their use in the everyday activities, actions and processes undertaken by the business, site, facility or operation. Use the least toxic materials and the smallest amount needed to get the job done.
- **Reduce Pollutant Exposure** – When possible, eliminate or reduce exposure of potential pollutant sources to rainfall and stormwater runoff. If possible, move material storage and equipment indoors, or provide a cover (tarp, shed or roof) to eliminate exposure. If areas cannot be covered, capture polluted runoff for treatment or discharge to the sanitary sewer system. Divert clean stormwater runoff from polluted work areas or storage areas using curbs or berms to prevent contamination.
- **Locate Activities Appropriately** – Locate activities and storage areas far from drainage paths, gutters, stormwater drains, drainage ditches and surface waters.
- **Avoid the Activity or Reduce its Occurrence** – When possible, avoid a polluting activity altogether, or reduce its frequency at the business, site, facility or operation. Often an alternative method or process can be used to substitute for another, more polluting activity.
- **Perform Preventive Maintenance** – Regularly inspect all equipment, machinery, vehicles, storage tanks, pipes, secondary containment systems and other identified potential sources of pollution for leaks, spills, or worn or damaged parts. Perform necessary maintenance or repairs as soon as possible.
- **Implement Good Housekeeping** – Keep work areas, parking lots and all outdoor areas clean and orderly. Use dry cleanup methods such as sweeping and vacuuming rather than washing down surfaces.

Selecting Appropriate Pollution Prevention and Control Measures

In addition to the general practices above, each of the potentially polluting operations and activities listed in Table 2-1 has a corresponding set of specific pollution prevention and control measures found in Chapter 3.

Each pollution prevention and control measure section contains guidance specific to that operation or activity including:

- Pollution prevention goals
- Applicable activities
- Pollution control approach
- Targeted pollutants
- Pollution prevention and control measures
- Inspection and preventive maintenance requirements
- Spill prevention and response
- Considerations for local government-owned or operated facilities and operations
- Considerations for Industrial NPDES (Georgia IGP) stormwater pollution prevention plans
- Any specific state regulations and requirements

Some of the pollution prevention and control measure sections also include structural design guidance and additional considerations related to that operation or activity.

An entity would identify the pollution prevention and control measures that correspond to the potential polluting activities identified in Step 2 as the basis for their pollution prevention approach.

Using the gas station in Example 1 in Section 2.1.2, the following pollution prevention and control measure sections from Chapter 3 would be applicable:

- Section B2: Fueling Operations
- Section F2: Vehicle and Equipment Repair & Maintenance
- Section D4: Vehicle and Heavy Equipment Washing & Cleaning
- Section F1: Restaurants and Food Service
- Section E3: Street and Parking Area Sweeping & Cleaning
- Section B3: Solid Waste Handling & Transfer

Through the use of these pollution prevention and control measures, a comprehensive and "personalized" set of pollution prevention practices, protocols and guidance can be easily prepared for many types of businesses, facilities, sites and mobile operations.

2.1.5 Step 4: Prepare a Spill Prevention and Response Plan

Spills and leaks, if not properly controlled, can adversely impact the stormwater drainage system and water quality in receiving waters. Proper spill response planning and preparation can enable facility or site employees to effectively respond to problems when they occur and minimize the discharge of pollutants to the environment.

Preparing a Spill Response Plan

Businesses and commercial sites, industrial facilities, institutions and government operations should develop an appropriate spill response and control plan to address contingencies in the event of a spill or leak. An effective spill response and control plan contains the following items:

- A description of the facility, the address, activities and materials involved
- Identification of key spill response personnel
- Identification of the potential spill areas or operations prone to spills and leaks
- Identification of which areas should be or are bermed or have secondary containment facilities to contain spills and leaks
- Facility map identifying the key locations of areas, activities, materials, structural control measures, stormwater drains, drainage directions, and stormwater outfalls
- Material storage and handling procedures, including plainly labeling containers, equipment or items susceptible to spillage or leakage
- Spill response procedures for handling the spill including:
    - Notification of spill response personnel
    - Assessment of the site and potential impacts
    - Emergency response and safety measures
    - Containment, diversion and/or isolation procedures
    - Cleanup and disposal procedures
    - Timely notification of the proper personnel and appropriate authorities and regulatory agencies
    - Proper recordkeeping

Spill Cleanup Kits

Spill cleanup kits are intended to address smaller spills and are placed near areas with a high potential for spills so that they are easily accessible in the event of a spill. The contents of the spill kit must be appropriate to the types and quantities of materials stored or otherwise used at the facility and refilled when the kit materials are used. An example spill cleanup kit (shown in Figure 2-2) contains absorbent pads, sorbent booms, absorbent granular material, protective clothing (latex gloves, boots and safety goggles), thick plastic garbage bags for the disposal of cleanup materials, and a stormwater drain cover.

Figure 2-2 Example Spill Cleanup Kit

Stormwater Drain Marking

Stormwater drain marking involves labeling stormwater drain inlets with messages that alert employees and average citizens not to dump pollutants in or near the stormwater drain. The messages are generally a simple phrase or graphic to alert potential polluters that the stormwater drains connect to local waterbodies and that anything entering the drain will pollute those waters.

There are several ways to mark stormwater drains:

- Manufactured stormwater drain markers, plaques or tiles that are either glued or affixed near drains or inlets
- Storm drain stencils for spray painting near storm drains
- Messages pre-cast into stormwater drain inlets and manhole covers

Stormwater stencils and markers can often be customized with a message and graphics. Figure 2-3 shows examples of a stormwater stencil application and a plastic storm drain curb marker.

Figure 2-3 Example of a Stormwater Drain Stencil and Curb Marker

2.1.6 Step 5: Eliminate Illicit Discharges and Illegal Connections

Some businesses, sites and facilities have internal building drains, sump overflows, process wastewater discharges and even sanitary sewer and septic system pipes that are incorrectly plumbed to the stormwater drainage system. These stormwater system connections allow a variety of pollutants to flow directly to the surface waters instead of to the sanitary sewer or septic system. Frequently, such illicit connections are not intentional, but can be very harmful to the environment and must be eliminated.

For all properties, the responsible parties must examine their plumbing systems to identify any illicit connections. A good place to start is an examination of the site plans. If any floor drains, industrial process waters, bathroom facilities or other equipment are connected to the stormwater drainage system, these connections must either be permanently plugged or disconnected and rerouted as soon as possible.

If it is not obvious through observation or examination of site plans, one method of determining where a pipe or structure drains is to perform a dye test with a nontoxic dye or a smoke test. These tests are typically best performed by qualified personnel such as a plumbing contractor.

If it is found that sanitary facilities, such as toilets and sinks, are hooked up to the drainage system, appropriate permits should be obtained from the local wastewater authority to reroute them to the sanitary sewer. Other options for correcting illicit discharges to the stormwater system include using a holding tank or installing a process treatment system. Restrictions on certain types of discharges, particularly industrial process waters, may require pretreatment of discharges before they enter the sanitary sewer.

2.1.7 Step 6: Prepare a Stormwater Maintenance Plan

Private commercial, industrial and institutional properties have stormwater management systems that consist of a collection and conveyance system composed of stormwater drains, catch basins, pipes, drainage ditches, structural stormwater controls, and outfalls. Pollutants such as sediment, organic material, trash and debris, and toxic chemicals can accumulate over time in various components of stormwater systems, causing water quality problems during storm events and the potential for system clogs and flooding.

Like any system, private stormwater systems need regular cleaning and maintenance to be effective. Property owners are typically responsible for conducting inspections and maintenance of their system each year. Regular maintenance of the stormwater management system decreases the amount of pollutants available to contaminate stormwater and receiving waters, and ensures the system functions properly (hydraulically) to avoid flooding and damage to property and infrastructure.

Maintenance requirements for the stormwater management system (based on local government maintenance agreements or requirements) should be incorporated into the pollution prevention plan for every business, site, facility and operation. The following guidance should be included at a minimum:

- Stormwater drains and inlets should be kept clear and free from debris
- Areas leading to a stormwater drain should be cleaned using dry methods to prevent sediment and pollutants from reaching the drainage system.
- Catch basins should be cleaned out when they are more than half full or when the sediment is within 18 inches of the bottom of the outlet pipe

Specific guidance on maintenance activities and requirements for various structural stormwater controls can be found in Volume 2 of the Manual (Technical Handbook).

2.1.8 Step 7: Develop an Employee Training Program

Employee training is a necessary component of any pollution prevention program. In order for a program to achieve success, employees must be trained on how to incorporate pollution prevention practices into their everyday activities.

Training programs should include a general stormwater awareness message, information on applicable pollution prevention and control measures, and spill prevention and response protocols. There are a variety of methods that can be used to educate employees on stormwater pollution prevention, including:

- Brochures and fact sheets
- Training sessions
- Meetings and workshops
- Videos
- Site / facility walk-throughs
- Workplace posters
- Information on an internal website
- Email or online newsletters

The most effective pollution prevention training programs are the ones that provide the right information to the right employees.

Going back to the gas station in Example 1 in Section 2.1.2, employee training would take place on the relevant pollution prevention and control measure sections from Chapter 3 based upon each employee's job and duties:

- Gas station employees: *Fueling Operations* (Section B2) and *Vehicle and Heavy Equipment Washing & Cleaning* (Section D4).
- Restaurant staff: *Restaurants and Food Service* (Section F1).
- Mechanics and auto service technicians: *Vehicle and Heavy Equipment Repair and Maintenance* (Section F2).
- In addition, all employees on site would be made aware of the relevant pollution prevention guidelines found in *Solid Waste Handling and Transfer* (Section B3) and *Street and Parking Area Sweeping and Cleaning* (Section E3).

All new employees should be trained as soon as possible, with refresher training offered on a regular basis for all employees. The complexity of implementing relevant pollution prevention and control measures, the turnover of employees, and the effectiveness of the training will affect how often initial training and refresher sessions will need to be scheduled.

2.2 NPDES Industrial Stormwater Permit and Pollution Prevention Plans (SWPPPs)

2.2.1 Overview

Georgia's NPDES Industrial General Permit (Georgia IGP) No. GAR050000 for Storm Water Discharges Associated with Industrial Activity authorizes discharges of stormwater associated with industrial activity to waters of the State of Georgia. Permittees are required to implement appropriate control measures to minimize pollutants in discharges of stormwater associated with industrial activity from their facility.

Facilities having industrial activities requiring coverage under the IGP must submit a Notice of Intent (NOI) to Georgia EPD. If conditions exist such that no potential contaminants are exposed to stormwater, then a facility may be able to file a No Exposure Exclusion (NEE).

2.2.2 Facilities Regulated Under the Permit

The Georgia IGP is a multi-sector permit which requires specific categories of industrial facilities to apply for coverage under the general permit. These sectors of industrial activity are based on federal Standard Industrial Classification (SIC) codes and industrial activities. The industrial facilities and activities requiring coverage by sector are listed in Table 2-2.

Table 2-2 Industrial Sectors Covered Under the Georgia IGP

A – Timber products B – Paper and allied products C – Chemical and allied products D – Asphalt paving, roofing materials and lubricants E – Glass, clay, cement, concrete and gypsum products F – Primary metals G – Transportation equipment, industrial or commercial machinery H – Electronic, electrical, photographic and optical goods I – Oil and gas extraction J – Mining and dressing K – Hazardous waste treatment, storage or disposal facilities L – Landfills, land application sites and open dumps	M – Automobile salvage yards N – Scrap recycling facilities O – Steam electric generating facilities P – Land transportation and warehousing Q – Water transportation maintenance/cleaning R – Ship and boat building and repairing yards S – Air transportation facilities T – Treatment works U – Food and kindred products V – Textile mills, apparel and other fabric product manufacturing; leather and leather products W – Furniture and fixtures X – Printing and publishing Y – Rubber, miscellaneous plastic products, and miscellaneous manufacturing activities Z – Leather tanning and finishing AA – Fabricated metal products

The primary SIC code or industrial activity code determines whether coverage is required at a facility, not the primary business of the facility owner. The primary designation is based on the value of receipts or revenues or, if such information is not available for a particular facility, the number of employees or production rate for each process may be compared. The operation that generates the most revenue or employs the most personnel is the operation in which the facility is primarily engaged.

All facilities required to have coverage by their primary SIC code are also required to address all co-located industrial activities. Co-located industrial activities are located on-site and have an SIC code that would require coverage, if considered separately.

In addition to the regulated sectors above, the Georgia IGP also requires permit coverage for any industrial activity designated by EPD based on its potential for contribution to a violation of a water quality standard or for significant contribution of pollutants to Waters of the State.

A more detailed list of the regulated industrial activities can be found in Appendix B by both sector and SIC code. A facility can determine its SIC code by using the SIC manual found on the U.S. Department of Labor's Occupational Safety and Health Administration's (OSHA) website.

2.2.3 No Exposure Exclusion

Industrial facilities have the opportunity to certify to a condition of "no exposure" if their industrial materials and operations are not exposed to stormwater by submitting the Industrial No Exposure Exclusion (NEE) certification form. As long as the condition of No Exposure is maintained at the facility, it will not be required to obtain coverage under the Georgia IGP.

Owners and operators of facilities for which an NEE form is submitted are required to conduct quarterly inspections each year to ensure that a condition of No Exposure is maintained. Results of these inspections are to be kept on site and made available to Georgia EPD upon request.

Facilities that file for an NEE are subject to inspections by Georgia EPD representatives, as well as local MS4 personnel, if the site is within an MS4-regulated jurisdiction. EPD may revoke NEE status for a facility that does not adequately demonstrate that it complied or continues to comply with the NEE requirements. If EPD revokes an NEE status, the facility will then be required to develop a site-specific Stormwater Pollution Prevention Plan (SWPPP) and submit the Notice of Intent (NOI) for full coverage under the IGP.

2.2.4 Summary of Georgia IGP Requirements

In order to obtain authorization under the Georgia IGP, an industrial facility is required to:

1. Determine eligibility requirements for coverage under Part 1.1 of the permit.

2. Select, design, install and implement pollution prevention and control measures in accordance with 2.1 of the permit to meet selection and design considerations, as well as both non-numeric and numeric effluent limits, as applicable.

3. Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) according to the requirements of Part 5 of the permit.

4. Obtain permit coverage for a facility by submitting a Notice of Intent (NOI).

5. Conduct ongoing routine inspections as described in Part 4 of the permit.

6. Collect and analyze stormwater samples and document monitoring activities consistent with the procedures described in Part 6, Appendix B, Appendix C and Part 8 of the permit. Submit monitoring data collected to EPD through required annual reporting.

7. Prepare and submit annual reports, as well as completing any other reporting and recordkeeping requirements as described in Part 7 of the permit.

2.2.5 SWPPP Contents

All industrial facilities subject to the Georgia IGP must prepare, retain on site, and implement a site-specific Stormwater Pollution Prevention Plan (SWPPP). The SWPPP has two major objectives:

1.) To help identify the potential sources of pollution that could impact the water quality of stormwater discharges from the facility

2.) To describe and ensure the implementation of appropriate pollution prevention and control measures, including schedules and procedures, intended to reduce or prevent the introduction of pollutants to stormwater runoff

Part 5 of the permit outlines the required contents of the SWPPP, which includes the following sections:

- **Pollution Prevention Team:** Identification of the individuals who will implement the SWPPP and their responsibilities.
- **Employee Training:** Description of the training program for all employees who work in areas where industrial materials or activities are exposed to stormwater, or who are responsible for implementing the SWPPP.
- **Site Description:** Description of the nature of industrial activities at the facility, including a general location map and a more detailed site map showing the location of significant structures and impervious surfaces, stormwater infrastructure, receiving waters, pollutant sources, previous spills and leaks, and industrial activities in areas exposed to precipitation.
- **Summary of Potential Pollutant Sources:** Documentation of areas of the facility where industrial materials or activities are exposed to stormwater, list of pollutant(s) or pollutant constituents associated with each identified activity, and locations where potential spills and leaks could occur. Permittees must also summarize stormwater discharge sampling data collected at the facility during the previous permit term.
- **Description of Control Measures:** Documentation of the pollution prevention and control measures that will be used to meet non-numeric technology-based, numeric effluent and water-quality based effluent limits. This documentation must describe how the control measures address both the pollutant sources identified and any stormwater runoff that commingles with any discharges covered under the permit.
- **Schedules and Procedures:** Schedules and procedures pertaining to control measures (including good housekeeping, maintenance, spill prevention and response, and employee training) as well as monitoring and inspections.
- **Signature Requirements:** Signatures by the appropriate signatory party.

2.2.6 Steps on Developing a SWPPP

The development of a SWPPP is similar to the process for general stormwater pollution prevention planning found in Section 2.1, but also includes requirements specific to the Georgia IGP. Below is an outline of steps for preparing a facility SWPPP.

Step 1: Select pollution prevention team

Select the members of the facility's stormwater pollution prevention team. This team will be responsible for assisting the facility manager in developing, implementing and revising the SWPPP, as well as maintaining control measures and taking corrective actions where required. The size and composition of the team should be appropriate to the complexity of the facility, and should consist of representatives from all departments and levels that will have a role in implementing the SWPPP. It is important that a lead person be designated to head the team.

Step 2: Conduct facility assessment

Conduct a thorough facility assessment, including a review of all available information and records. Determine the applicable industrial activity sector(s) in the Georgia IGP which apply to the facility.

Develop a site map or maps which show the facility boundaries and the locations of the following:

- Location and extent of significant structures and impervious surfaces
- Direction of stormwater flow (use arrows)
- All existing structural stormwater controls
- All receiving waters in the immediate vicinity of the facility, indicating if any of the waters are impaired
- All stormwater conveyances including ditches, pipes and swales
- Areas where materials are directly exposed to precipitation
- Significant pollutant sources
- Places where significant spills or leaks have occurred
- All stormwater inlets and outfalls which discharge stormwater associated with industrial activity, with an approximate outline of the areas draining to each outfall with an indication of the applicable sector(s) for each outlined area
- All non-stormwater discharges in areas associated with industrial activity, with descriptions
- Areas where the following industrial activities are exposed to precipitation:
    - Fueling stations
    - Vehicle and equipment maintenance and/or cleaning areas
    - Loading/unloading areas
    - Locations used for the treatment, storage or disposal of wastes
    - Liquid storage tanks
    - Processing and storage areas
    - Immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility
    - Transfer areas for bulk substances and materials
    - Machinery
    - Significant dust or particulate generating processes
- Areas and sources of stormwater run-on to the facility that contain significant quantities of pollutants from adjacent property

The site map should be of sufficient scale and quality to be legible and readable.

Step 3: Identify potential polluting activities

Using information from the facility assessment in Step 2, identify and document all of the industrial activities taking place at the facility that may be exposed to stormwater and from which allowable non-stormwater discharges are released. Note the activities that correspond to specific industrial sectors found in the Georgia IGP.

Step 4: Prepare inventory of materials and chemicals

Develop a comprehensive inventory and narrative of all materials and chemicals handled, treated, stored or disposed of at the facility (in the last three years) in a manner that may potentially allow exposure to precipitation. This should include the name of material, location stored, type of container, volume of material, use of material, safeguards in place to prevent pollution, and whether a material safety data sheet (MSDS) is required.

Step 5: Document past and potential spills and leaks

Provide documentation of significant spills and leaks of toxic or hazardous pollutants that occurred (in the last three years) in areas that are exposed to precipitation, or that otherwise drain to a stormwater conveyance at the facility. Identify and document facility areas where spills and leaks could contribute pollutants to stormwater discharges, and the corresponding outfall(s) that would be affected by such spills and leaks.

Step 6: Summarize sampling data

Provide a summary of existing stormwater discharge analytical sampling data collected at the facility during the previous permit term.

Step 7: Assess potential pollutant sources

Using the information prepared in Steps 2 through 6, prepare a risk identification and site evaluation summary of potential pollutant sources, and pollutants (or pollutant parameters) of concern.

Step 8: Identify pollution prevention and control measures

Identify and document the pollution prevention and control measures that are appropriate for the operations, activities and potential pollutant sources at the facility. The pollution prevention control measures included in Chapter 3 can serve as a resource in this process. In addition, the relevant control measures in the Georgia IGP for applicable industrial sectors in the Georgia IGP should be considered.

Step 9: Identify structural stormwater management water quality controls

Identify and document structural stormwater management water quality controls at the facility.

Step 10: Develop spill prevention and response plan

Develop a spill prevention and response program which includes a set of procedures and necessary equipment to implement proper cleanup of a spill.

Step 11: Develop operations and maintenance / inspection program

Design a program which documents good housekeeping and preventive maintenance procedures. This shall include routine inspections as well as quarterly and comprehensive site inspections. In addition, the program must include stormwater analytical monitoring procedures applicable to the facility under the Georgia IGP. A recordkeeping system must be established for the records and data required to be kept on site with the SWPPP.

Step 12: Develop employee training program

Develop a program for employee training that informs personnel responsible for implementing the pollution prevention and control measures identified in the SWPPP. Training should address topics such as good housekeeping, inspections and preventive maintenance, material management, and spill prevention and response. A schedule for training should be provided and included in the SWPPP.

2.3 NPDES MS4 Stormwater Pollution Prevention (Good Housekeeping) Program Planning Guidance

2.3.1 Overview

Georgia's NPDES Municipal Separate Storm Sewer System (MS4) program requires that regulated communities develop pollution prevention/good housekeeping programs to control and reduce stormwater pollution generated by their own operations.

A regulated MS4 community is required to develop a program designed to:

- Prevent or reduce the amount of stormwater pollution generated by municipal operations and conveyed into receiving waters
- Train employees on how to incorporate pollution prevention/good housekeeping techniques into municipal operations
- Identify appropriate best management practices and measurable goals for preventing or reducing the amount of stormwater pollution generated by municipal operations

This section provides guidance on developing a pollution prevention/good housekeeping program that will meet the requirements of the Georgia MS4 permit program.

2.3.2 Developing a Local Stormwater Good Housekeeping Program

Many types of public facilities, operations, and activities undertaken by local governments have the potential to introduce pollutants to the stormwater system. Having an effective local pollution prevention and good housekeeping program can reduce the potential for stormwater pollution, and ensure that a community keeps "its own house in order" to serve as an example to residents, businesses, industry and institutions.

Developing a comprehensive local pollution prevention/good housekeeping program involves identifying local government owned and operated facilities and operations, determining their potential impacts to stormwater and water quality, and designing a strategy to implement the appropriate pollution prevention and control measures.

Step 1: **Identify Municipal Facilities and Operations**

Since the nature, scope and distribution of local government facilities and operations varies greatly from one community to the next, the process of developing a local pollution prevention/good housekeeping program begins with identifying the facilities owned and operated by the jurisdiction and local government operations and activities that can impact stormwater quality. This may include such things as:

- Vehicle fleet fueling, storage and maintenance areas
- Public works yards
- Street maintenance operations
- Solid waste collection and management
- Water and sewer treatment plants and systems
- Locally owned and operated parks and open space
- Parking lots
- Publicly-owned and/or maintained structural stormwater controls

This inventory should include all local government facilities and operations, including locally-owned utilities (e.g. water and wastewater facilities and operations), parks and recreation departments, school districts, public hospitals, administrative offices, and other publicly-owned facilities.

As the responsibilities of a city or county can be vast, it can be helpful to identify and list municipal facilities and operations by function, location and/or administrative unit.

Step 2: **Collect Information About Each Facility and Operation**

The next step is to gather basic information about each facility and operation. For stationary locations such as buildings and parks this should include:

- Facility name & street address
- Facility type
- Facility manager and contact information
- Department or administrative unit
- Activities undertaken at the facility
- Site plans, if available
- Aerial photography, if available

For mobile operations such as road maintenance or public works activities undertaken at various locations around the community, information collected should include:

- Operation manager and contact information
- Department or administrative unit
- Activities undertaken by the operation

This process of information collection is an ideal time to inform colleagues at various local government facilities and operations about the community's pollution prevention/good housekeeping efforts. Developing a working relationship is necessary for coordinating and implementing an effective local stormwater pollution prevention program.

Step 3: **Determine Relevant Activities and Pollution Prevention and Control Measures**

The next step is to further investigate each municipal facility and operation to determine relevant activities taking place, their potential impacts to stormwater and water quality, and the appropriate pollution prevention management measures that should be put in place. The basic approach is to use a combination of desktop and field assessments to identify the activities associated with each of the operations.

With these pollution-generating activities defined, you will be able to prescribe specific pollution prevention/good housekeeping practices from the pollution prevention and control measure sections provided in Chapter 3. An example of this process is presented in Table 2-3. Note that multiple pollution-generating activities and stormwater pollutants may be associated with a single municipal facility or operation.

Municipal facilities and operations that undertake industrial activities as defined by the Georgia IGP will be required to apply for coverage and develop a SWPPP as outlined in Section 2.2.

Table 2-3. Example Assessment of Applicable Pollution Prevention and Control Measures for Local Government Facilities

ACTIVITY / POLLUTION PREVENTION AND CONTROL MEASURE SECTION	LOCAL GOVERNMENT FACILITY								
	City Hall / County Admin	Vehicle Fleet	Public Works Yard	City / County Park Maint.	Recycling Center	Public Safety (Police & Fire)	Highway Dept	Water Treatment Plant
A1. Storage of Bulk Materials			●	●			●	●
A2. Storage of Liquid Materials						●		●
A3. Storage of Scrap and Recyclable Materials			●		●			
B1. Loading and Unloading Operations			●		●		●	●
B2. Fueling Operations		●	●	●		●	●	
B3. Solid Waste Handling and Transfer	●			●	●			●
B4. Hazardous Material / Waste Management								●
C1. Outdoor Manufacturing Operations			●					
C2. Outdoor Painting and Finishing								
C3. Construction, Remodeling, Repair & Demolition								
C4. Concrete and Asphalt Production & Installation							●	
C5. Chemical Application								
D1. Interior Washing and Cleaning Activities	●							
D2. Pressure Washing and Surface Cleaning				●				
D3. Tool and Equipment Cleaning						●		
D4. Vehicle and Heavy Equipment Washing & Cleaning		●	●	●		●		
E1. Landscaping, Lawn Care & Vegetation Management	●			●			●	
E2. Street and Highway Repair & Maintenance							●	
E3. Street and Parking Area Sweeping & Cleaning	●	●		●			●	
F1. Restaurants and Food Service				●				
F2. Vehicle and Equipment Repair & Maintenance		●	●			●		
F3. Marina and Boat Operation & Maintenance								
F4. Swimming Pool and Spa Maintenance				●				

Step 4: **Develop Implementation Plans**

Appropriate implementation and operations & maintenance plans should be developed for each municipal facility and operation. These plans should include:

- A summary of the pollution-generating activities associated with that facility or operation
- Specific pollution prevention and control measures that will be used to address each of the pollution-generating activities
- Inspection forms
- Implementation schedule
- Spill prevention and response plans, where applicable

The contents of each implementation plan should be developed in cooperation with the individuals responsible for managing or overseeing each of operations. A key element of each implementation plan should be an estimate of the budget required to implement the recommended practices.

Step 5: **Undertake Local Government Employee Education and Training**

Local government 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 operations. Employees at all levels of responsibility should be including in training programs as well as on-site contractors and temporary personnel.

Training programs should cover:

- Stormwater pollution awareness information
- General pollution prevention/good housekeeping measures
- Stormwater pollution prevention implementation and operations & maintenance plans specific to the facility or operation, as well as the employee's job or role.
- Spill prevention and response

In addition, all field staff should also be trained to recognize, track, and report illicit discharges and illegal connections.

Municipal employees can be educated about stormwater issues in a number of ways: in-house training programs, on-the-job reinforcement, general awareness and educational materials, and workshops or conferences.

Most local governments and utilities have established training programs for field and maintenance staff to address safety, materials handling, waste disposal, or other issues. Basic stormwater information and details about pollution prevention practices and protocols can be incorporated into these existing formats. Pollution prevention guidance documents and implementation plans should be provided to all employees as a reference to use after training.

2.4 Additional Pollution Prevention Elements for Local Government Stormwater Management Programs

2.4.1 Overview

In addition to their own stormwater pollution prevention and good housekeeping programs, regulated Georgia MS4 communities are also responsible for managing discharges to their municipal stormwater drainage system from commercial, industrial, institutional and residential properties and private stormwater conveyance systems.

Therefore, local governments are typically required to incorporate the following elements into their local stormwater management plan (SWMP) and programs:

- Stormwater Pollution Prevention Outreach for Businesses, Industries and Institutions
- Commercial and Industrial Inspections
- Illegal Discharge / Illegal Connection Removal
- Stormwater System Maintenance
- Sanitary Sewer Maintenance
- Septic Tank Maintenance
- Landfill Management
- Street Sweeping
- Household Hazardous Waste Collection
- Stormwater Pollution Prevention Public Information and Education
- Pollution Reporting Hotline / Spill Response

Each of these program elements is discussed in further detail below.

2.4.2 Stormwater Pollution Prevention Outreach for Businesses, Industries and Institutions

Local governments should actively encourage stormwater pollution prevention efforts by local businesses, industries, and institutions. This is ideally done through the development and/or adoption of a compendium of pollution prevention practices such as this document.

Both existing and new businesses, facilities, sites and operations can be required to prepare a stormwater pollution prevention plan as a condition of a business license or operation permit, or as part of an overall stormwater management site plan for new development.

Brochures and fact sheets containing relevant pollution prevention practices as well as training programs and/or videos can be made available for specific commercial and industrial categories (such as restaurants, gas stations, or concrete operations) to provide business owners and employees with the necessary tools to preventing stormwater pollution in their activities and operations.

2.4.3 Commercial and Industrial Inspections

Inspecting commercial and industrial facilities can help to identify existing and potential illicit discharges and illegal connections. Each community should develop a list of businesses and industries that are considered potential polluters which discharge to the municipal stormwater system. Inspection frequency may be based upon the type of business or industry, facility location, materials used, history of illicit discharges or violations, and other factors.

Inspections typically include a tour of the facility and visual inspection of the private stormwater management system and outfalls to the municipal system for compliance with local ordinances and regulations.

2.4.4 Illicit Discharge / Illegal Connection Removal

Every Georgia MS4 community should have an active illicit discharge detection and elimination (IDDE) program to identify and eliminate illicit discharges entering the municipal stormwater drainage system. Local governments should develop an IDDE program that best addresses their stormwater infrastructure and watershed conditions, water quality issues, and local priorities.

Local IDDE programs can include one or more of the following methods:

- **Dry weather stormwater outfall screening** – Dry weather screening involves inspecting stormwater outfalls for flows during dry periods (when no stormwater runoff has occurred) which may indicate illicit discharges upstream of the outfall.
- **Commercial and industrial inspections** – Inspecting certain commercial and industrial facilities can help to identify existing and potential illicit discharges and illegal connections. Inspections typically include a tour of the facility and inspections of the grounds surrounding the building with a visual inspection of the site outfall locations that discharge either to the local stormwater system or surface waters.
- **Asset management inspections** – A local government may opt to cross train inspections staff to look for illicit discharges and illegal connections as part of their routine system inspections.
- **Streamwalks** – Routine stream walks can be used to identify illicit discharges with the added benefit of greater understanding of local water resources.

If an illicit discharge is found by any of the methods above, an investigation of the drainage area upstream of the outfall should be performed to look for the source. Methods to identify sources include mapping evaluations, windshield surveys, dye testing, smoke testing and visual inspections using closed-circuit television cameras. The appropriate investigation method(s) will depend on the facility, drainage system characteristics, available resources and the nature of the discharge and screening results.

2.4.5 Stormwater System Maintenance

An essential component of a comprehensive stormwater management program is the ongoing operation and maintenance of the various components of the stormwater drainage, control, and conveyance systems. Failure to provide effective maintenance can reduce the hydraulic capacity and the pollutant removal efficiency of stormwater controls and conveyance systems.

Operations and maintenance activities can include cleaning and maintenance of catch basins, drainage swales, open channels, storm sewer pipes, stormwater ponds, and other structural controls.

2.4.6 Sanitary Sewer Maintenance

Leaking sanitary sewer lines located near stormwater drainage pipes and streams can add pathogens as well as nutrients and oxygen-demanding materials to stormwater and surface waters. Inspections and leak detection of sanitary sewer lines should be conducted on a regular basis as part of an operations and maintenance program for a local wastewater utility, public works department, or other responsible entity.

2.4.7 Septic Tank Maintenance

Effluent from poorly maintained or failing septic systems can leach from soil and contaminate stormwater. Improperly maintained septic systems can be potentially significant sources of pathogens and nutrients to stormwater runoff. In order to combat this problem, communities can promote or require the regular maintenance of septic tank systems.

A local jurisdiction can track septic tanks in a database, and send out notices at the required interval for septic tank inspections and maintenance. Septic tanks can also be permitted by a local authority, with permit renewal contingent on certification of septic tank maintenance.

2.4.8 Landfill Management

Improperly maintained landfills can allow trash and debris, nutrients, pathogens and toxic contaminants to reach or stay on the surface of the landfill, allowing runoff to carry these pollutants to nearby waterbodies. Therefore it is important that a local government properly regulate landfills and require the appropriate management measures to keep contaminated stormwater runoff from leaving the landfill site.

2.4.9 Street Sweeping

Local street sweeping programs remove sediment, trash and debris, organic materials, heavy metals and other pollutants from roadway surfaces that are potential sources of stormwater pollution and stormwater system blockages. Street sweeping can also improve the aesthetics of municipal roadways, control dust and decrease the accumulation of material in catch basins.

Local governments should develop an effective street sweeping program following the guidance found in Section E3 (Street and Parking Area Sweeping & Cleaning).

2.4.10 Hazardous Household Waste Collection

Household hazardous wastes can include a wide variety of materials used in the home including paints, solvents, pesticides, herbicides and cleaners. Communities can establish a collection center or provide scheduled events for the collection for household hazardous wastes, where they can be categorized and properly recycled or disposed of at an approved hazardous waste facility.

2.4.11 Stormwater Pollution Prevention Public Information and Education

Educating local residents and the general public on stormwater pollution and what they can do to reduce and/or prevent pollution of stormwater runoff is a critical element of a comprehensive stormwater management program. Some areas of focus for a local public information and education program include:

- Fertilizer and pesticide application
- Yard waste (grass clipping and leaf) disposal and composting
- Household hazardous waste management
- Automotive care and used motor oil recycling
- Pet waste cleanup and disposal

Information can be distributed to residents through a variety of methods, including:

- Brochures and fact sheets
- Utility bill inserts
- Internet website

- Education programs
- Special events
- School curricula
- Volunteer educators

Additionally, a community can coordinate programs to engage citizens in stormwater pollution prevention and watershed management activities, such as:

- Stream monitoring
- Stream clean-ups
- Adopt-a-Stream programs
- Tree planting days
- Storm drain marking

2.4.12 Pollution Reporting Hotline / Spill Response

Local citizens can be helpful eyes and ears by reporting water quality problems and polluting activities. A community should have procedures for reporting stormwater polluters and promptly responding to emergencies such as hazardous materials spills. A telephone hotline and/or email reporting form can be established for receiving information on water pollution, polluters and spills.

CHAPTER

3

COMMERIAL / INDUSTRIAL / INSTITUTIONAL & MUNICIPAL POLLUTION PREVENTION AND CONTROL MEASURES

Introduction

This chapter contains pollution prevention and control measures for commercial, industrial, institutional and municipal (local government) entities. These measures are organized by the specific activities that may take place at a facility, site or by the entity. Table 3-1 below lists the pollution prevention and control measures by category and activity.

Table 3-1 Commercial-Industrial-Institutional-Municipal Activities and Pollution Prevention & Control Measures

CATEGORY	ACTIVITY / POLLUTION PREVENTION AND CONTROL MEASURE SECTION
A. Materials Storage	A1 -- Storage of Bulk Materials A2 -- Storage of Liquid Materials A3 -- Storage of Scrap and Recyclable Materials
B. Materials Transfer and Disposal	B1 -- Loading and Unloading Operations B2 -- Fueling Operations B3 -- Solid Waste Handling and Transfer B4 -- Hazardous Material / Waste Management
C. Production and Construction	C1 -- Outdoor Manufacturing Operations C2 -- Outdoor Painting and Finishing C3 -- Construction, Remodeling, Repair & Demolition C4 -- Concrete and Asphalt Production & Installation C5 -- Chemical Application
D. Washing and Cleaning	D1 -- Interior Washing and Cleaning Activities D2 -- Pressure Washing and Surface Cleaning D3 -- Tool and Equipment Cleaning D4 -- Vehicle and Heavy Equipment Washing & Cleaning

Table 3-1 (continued) Commercial-Industrial-Institutional-Municipal Activities and Pollution Prevention & Control Measures

CATEGORY	ACTIVITY / POLLUTION PREVENTION AND CONTROL MEASURE SECTION
E. Facilities Maintenance	E1 -- Landscaping, Lawn Care & Vegetation Management E2 -- Street and Highway Repair & Maintenance E3 -- Street and Parking Area Sweeping & Cleaning
F. Other Activities	F1 -- Restaurants and Food Service F2 -- Vehicle and Heavy Equipment Repair & Maintenance F3 -- Marina and Boat Operation & Maintenance F4 -- Swimming Pool and Spa Maintenance

A1. Storage of Bulk Materials

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from solid bulk materials that are typically stockpiled and stored outdoors

APPLICABLE OPERATIONS AND ACTIVITIES

- Manufacturing Facilities
- Concrete and Gravel Operations
- Local Government Public Works
- Highway Departments
- Construction Suppliers
- Lumber Yards
- Landscaping and Garden Suppliers
- Composting Operations
- Power Plants
- Construction Sites and Activities
- Any Other Facility or Site with Outdoor Storage of Bulk Materials

POLLUTION CONTROL APPROACH

Cover and contain bulk materials to prevent erosion and contact with stormwater runoff

KEY POLLUTION PREVENTION AND CONTROL MEASURES

- Store bulk materials indoors or in sheds whenever possible
- Cover permanent outdoor storage areas with a roof, and prevent contact with stormwater runoff using berms or an enclosure
- Protect outdoor stockpiles using a secure waterproof cover where feasible
- Implement containment measures as well as erosion and sedimentation controls for large stockpiles that cannot be covered
- Inspect storage areas regularly to check for erosion or leaching of materials

TARGETED POLLUTANTS

- [x] **Sediment**
- [x] **Nutrients**
- [ ] **Bacteria**
- [x] **Organic Matter**
- [ ] **Oil & Grease**
- [x] **Heavy Metals**
- [ ] **Toxic Chemicals**
- [x] **Abnormal pH**
- [ ] **Trash & Debris**
- [x] **Other:** Soluble Chemicals

Overview

Solid bulk materials, including raw or finished products and by-products, are often stockpiled and stored outdoors on a temporary or permanent basis in large piles, stacks, or bins. Some examples of these bulk materials include:

- Gravel
- Sand
- Topsoil
- Compost
- Chemicals
- Logs and treated wood
- Sawdust
- Wood chips
- Coal
- Building materials
- Concrete
- Metal products

Rain and stormwater runoff coming into contact with these stored materials can result in erosion and washoff of both suspended and dissolved pollutants. Contaminants may include sediment, nutrients, organic matter, abnormal pH, heavy metals, toxic chemicals and dissolved salts.

Pollution Prevention and Control Measures

- Always store bulk materials indoors or use storage sheds whenever possible.
- Established or permanent outdoor storage areas should be covered with a roof, and bermed or enclosed to prevent contact with rain and stormwater runoff. This is particularly important for water-soluble materials and those that can leach pollutants into stormwater or groundwater.
- Where feasible, a waterproof cover (made of polyethylene, polypropylene, hypalon or equivalent) should be used over all materials stored outside as shown in Figure A1-1. The cover should be adequately secured and remain in place at all times when the materials or stockpile is not being used.

Figure A1-1 Example of Secure Waterproof Cover

- For large stockpiles that cannot be covered or when covering bulk materials is not feasible, containment measures and erosion and sedimentation (E&S) controls should be implemented at the perimeter of the site and at any catch basins as needed to prevent erosion and dispersion of the material to a storm drain or drainage ditch. Bulk materials should not be allowed to wash off the site or discharge into surface waters.
- Locate stockpiles a minimum of 50 feet away from concentrated flows of stormwater, stormwater drains, drainage ditches, and surface waters.
- Consider the use of storm drain covers, filter fabric, silt fences or secured liners on construction sites and other areas with temporary stockpiles to keep materials from entering the stormwater drainage system. Make sure that nearby stormwater drains are clearly marked.
- Protect all temporary stockpiles from contact with stormwater runoff from surrounding areas using sediment barriers such as berms, dikes, fiber rolls, silts fences, or sandbags.
- Store small amounts of bulk materials and any bagged materials on pallets to avoid contact with stormwater runoff.
- Keep all outdoor storage containers and bins in good condition. Repair or replace any deteriorating storage containers and bins.

- Minimize the amount of materials purchased or kept on site to reduce storage needs and prevent large stockpiles.

Storage Area Design Features

- Consider sloping paved storage areas to minimize the pooling of water on the site. Minimizing water pooling is particularly important with materials that may leach pollutants. A minimum slope of 1.5% is recommended.

- Use curbing around the perimeter of stockpile or storage areas to both prevent contact with uncontaminated stormwater runoff from adjacent areas and contain runoff from stockpiles. The area inside the curb should slope to a drain which is connected to a stormwater structural control that provides water quality treatment.

- Ensure that all stormwater from the site is treated by an appropriate structural or non-structural stormwater control. Stormwater controls that provide water quality treatment for the contaminant(s) in question may be found in *Volume 2, Technical Handbook*.

- Some local governments require that secondary containment areas regardless of size be connected to the sanitary sewer and/or require pretreatment. Contact the local wastewater provider for more information.

- Local fire regulations should be consulted on the clearance of roof covers over flammable materials.

Inspection and Preventive Maintenance Requirements

Table A1-1 Typical Inspection and Preventive Maintenance Activities for Outdoor Bulk Materials Storage

Activity	Schedule
• Inspect the storage area to check for erosion and/or leaching from stockpiles or raw materials.	Ongoing
• Storage areas should be swept and cleaned when needed. Solid materials should be collected and disposed of properly. Do not hose down paved areas.	As needed (frequently/seasonally)
• Inspect berms, curbing, and secondary containment. Perform repairs as needed.	Weekly or as prescribed by a SWPPP

Spill Prevention and Response

- Develop Standard Operating Procedures (SOPs) for spill prevention and clean up (see Section 2.1.5).

- Store and maintain appropriate cleanup materials and equipment on site in a location near the storage area(s) and stockpiles.

Considerations for Local Government-Owned or Operated Facilities and Operations

- The following local government functions and departments often undertake operations and activities that involve outdoor bulk materials storage:

    - Public works
    - Transportation (streets & highways)
    - Parks / recreation
    - Water and wastewater utilities

  Local government entities that store bulk materials outdoors should adopt these pollution prevention and control measures, and develop appropriate Standard Operating Procedures (SOPs) for implementing them.

Considerations for Industrial NPDES (Georgia IGP) Stormwater Pollution Prevention Plans (SWPPPs)

- Applicable industrial activity sectors with coverage under the Georgia IGP that often undertake operations and activities that involve outdoor bulk materials storage include, but are not limited to:

  Sector A: Timber Products
  Sector B: Paper and Allied Products
  Sector E: Glass, Clay, Cement, and Gypsum Products
  Sector J: Mining and Dressing
  Sector L: Landfills, Land Application Sites, and Open Dumps
  Sector O: Steam Electric Generating Facilities
  Sector P: Land Transportation and Warehousing
  Sector T: Treatment Works
  Sector Y: Rubber, Miscellaneous Plastic Products and Misc. Manufacturing Industries

  Please see Appendix B for the SIC codes that correspond to each industrial activity sector

- The Georgia IGP establishes numeric effluent limits and requires annual analytical sampling of stormwater discharges from some types of stockpiles. Please refer to the permit and your SWPPP for specific sampling requirements.

- Leachate from waste piles is prohibited under the Georgia IGP.

Specific State Regulations and Requirements

- Georgia Erosion and Sedimentation Act (O.C.G.A. 12-7-1)

- Manual for Erosion and Sediment Control in Georgia

A2. Storage of Liquid Materials

Goal: Prevent or reduce the discharge of pollutants to stormwater from the outdoor storage of liquid materials in above ground tanks or portable containers

APPLICABLE OPERATIONS AND ACTIVITIES

Any facility or site with outdoor storage of liquids in either above-ground storage tanks or storage containers such as drums, barrels, jugs or cans. These liquids may be raw materials, intermediate products, final products, waste materials or fuel. *NOTE: These pollution prevention and control measures are not intended for underground tanks which have separate regulations.*

POLLUTION CONTROL APPROACH

Store and contain liquid materials in such a manner to prevent the discharge, flow or washoff to the stormwater drainage system, surface waters or groundwater

KEY POLLUTION PREVENTION AND CONTROL MEASURES

- Provide secondary containment for liquid storage areas
- Cover outdoor storage areas where feasible
- Ensure that all outdoor liquid storage containers have tight-fitting lids and proper labels
- Keep container lids closed at all times
- Store containers off the ground using a spill containment pallet or within a secondary containment area

TARGETED POLLUTANTS

- ☐ **Sediment**
- ☑ **Nutrients**
- ☐ **Bacteria**
- ☑ **Organic Matter**
- ☑ **Oil & Grease**
- ☑ **Heavy Metals**
- ☑ **Toxic Chemicals**
- ☑ **Abnormal pH**
- ☐ **Trash & Debris**
- ☑ **Other:** All liquid materials and chemicals

Overview

Outdoor storage of liquid materials in above-ground tanks or portable containers such as drums and barrels presents the potential for accidental release and contamination of stormwater with a wide variety of pollutants. Liquids may be raw materials, intermediate products, final products, waste materials or fuel. Some of the more common liquids stored outdoors include petroleum products (gasoline, kerosene, diesel fuel, oil, etc), solvents, antifreeze, and other materials and chemicals used in industrial and commercial processes.

Liquid materials spilled, leaked or lost from tanks and storage containers can accumulate on surrounding surfaces or soils where they may come into contact with rain and stormwater runoff, or in large enough amounts, flow directly to the stormwater drainage system, surface waters, or groundwater.

Pollution Prevention and Control Measures

For above-ground liquid storage tanks:

- All liquid storage tanks should be placed in a designated paved area with a secondary containment system, such as curbing, berms, dikes, liner, vault, or double-walled tank such that contents will not discharge, flow or be washed into the stormwater drainage system, surface waters or groundwater if the tank leaks or ruptures.

- Employ safeguards against accidental releases including:
    - Overflow protection devices, to either automatically shut down pumps and lines, or with alarms to alert the operator
    - Shut off valve at the tank (ideally an automatic shear valve with the shut-off located inside the tank)
    - Manual release valves should be kept locked in the closed position
    - Clear labeling of tanks and valves to reduce human error

- Provide barriers such as posts or guardrails around tanks and piping to prevent collision damage from a vehicle or equipment.

- Visually inspect new tank installations for loose fittings, poor welding and improper or poorly fitted gaskets.

- Secure and restrict access to tank storage areas to prevent vandalism-caused contamination.

For portable liquid storage containers:

- All storage containers (new or secondary) should have tight fitting lids and be properly labeled with the contents, and any possible hazards [see Section B4 (Hazardous Materials/Waste Management) for more information].

- Wherever possible, store liquid containers indoors or use storage sheds.

- Where feasible, outdoor storage areas should be paved and covered with a roof, and utilize a berm or secondary containment system to prevent contact with rain and stormwater runoff as shown in Figure A2-1.

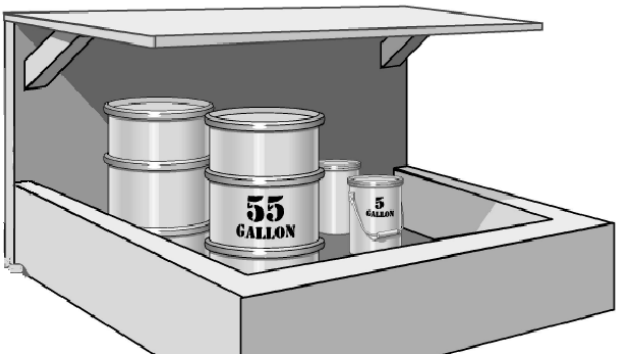

Figure A2-1 Example of Outdoor Storage with Roof and Secondary Containment

- Raise storage containers off the ground by use of pallets or similar method, with provisions for spill control.
- Place drip pans or absorbent materials beneath all container taps, and at all potential drip and spill locations during filling and unloading of containers.
- If liquid chemicals are corrosive, use containers made of compatible materials.
- Secure and restrict access to liquid container storage areas to prevent vandalism-caused contamination.

Storage Area Design Features

- Designated areas for liquid tanks, liquid storage containers, and dumpsters should be paved with Portland cement concrete, free of cracks and gaps, and impervious in order to contain leaks and spills. Special coatings may be required for some liquid materials.
- Install alarms and/or pump shutoff systems.
- Secondary containment should be sized, at a minimum, to contain 10% of the volume of all tanks or containers, or 110% of the volume of the largest tank or container, whichever is greater.
- The storage area should be designed to prevent the release of spilled liquids or contaminated stormwater runoff by sloping to a drain connected to a dead-end sump or sanitary sewer. A dead-end sump is an underground storage container which does not discharge to the stormwater drainage system.
- Some local governments require that secondary containment areas, regardless of size, be connected to the sanitary sewer and/or require pretreatment. Contact the local wastewater provider for more information.
- If the liquid being stored is oil, gas or other material that separates from and floats on water, install a spill control device (such as an oil/water separator) in catch basins that collect stormwater runoff from the storage area.
- Ensure that all stormwater from the site is treated by an appropriate structural or non-structural stormwater control. Stormwater controls that provide water quality treatment for the contaminant(s) in question may be found in *Volume 2, Technical Handbook*.

Additional Considerations

- All specific standards set by Federal and Georgia laws concerning the storage of oil and hazardous materials must be met, including:
    - Spill Prevention Control and Countermeasure (SPCC) Plan
    - Secondary containment
    - Integrity and leak detection monitoring
    - Emergency preparedness plans
- Storage of reactive, ignitable or flammable liquids should comply with the Uniform Fire Code and the National Electric Code, and any local requirements.
- Local fire regulations should be consulted on the clearance of roof covers over flammable materials.
- Follow appropriate practices and protocols for the loading, filling and/or unloading of liquid materials. See Section B1 (Loading/Unloading Operations) for more details.

Inspection and Preventive Maintenance Requirements

Table A2-1 Typical Inspection and Preventive Maintenance Activities for Above-Ground Liquid Storage Tanks

Activity	Schedule
• Inspect storage areas, tanks, and secondary containment areas for leaks and spills	Daily
• Conduct routine inspections and check tanks, foundations, connections, valves and piping system/hoses for corrosion, structural failure, leaks, cracks, and overfills.	Weekly
• Check for leaks or spills during pumping of liquids to or from a storage facility	Ongoing
• Have periodic integrity testing conducted by a qualified professional	Annually or as recommended
• Replace tanks that are leaking, corroded, or otherwise deteriorating	As needed
• Tank storage areas should be swept and cleaned when needed and leaked/spilled materials should be collected and disposed of properly. Do not hose down paved areas.	As needed (frequently/seasonally)
• Inspect berms, curbing, and secondary containment systems. Perform repairs as needed.	Weekly
• Inspect spill control devices regularly to remove separated floatable liquids.	After storm events, or as required by manufacturer guidelines or a maintenance agreement

Table A2-2 Typical Inspection and Preventive Maintenance Activities for Portable Liquid Storage Containers

Activity	Schedule
• Inspect storage areas and check material containers and dumpsters for leaks, spills and external corrosion and structural failure.	Daily
• Replace containers that are leaking, corroded, or otherwise deteriorating.	As needed
• Storage areas should be swept and cleaned when needed and leaked/spilled materials should be collected and disposed of properly. Do not hose down paved areas.	As needed (frequently/seasonally)
• Inspect berms, curbing, and secondary containment systems. Perform repairs as needed.	Weekly

Spill Prevention and Response

- For applicable facilities storing liquid petroleum and related materials, a Spill Prevention Control and Countermeasure (SPCC) Plan must be developed and kept up-to-date. Regulatory requirements and sample SPCC Plans can be found at *www.epa.gov/oilspill*

- Develop Standard Operating Procedures (SOPs) for spill prevention and clean up (see Section 2.1.5).

- Have an emergency plan, equipment and trained personnel ready at all times to deal immediately with major spills.

- Store and maintain appropriate spill cleanup materials on site in a location near the liquid tank or container storage area(s).

Considerations for Local Government-Owned or Operated Facilities and Operations

- The following local government functions and departments often undertake operations and activities that involve outdoor liquid materials storage:

    - Public works
    - Transportation (streets & highways)
    - Water and wastewater utilities
    - Facilities management

  Local government entities that store liquid materials outdoors should adopt these pollution prevention and control measures, and develop appropriate Standard Operating Procedures (SOPs) for implementing them.

Considerations for Industrial NPDES (Georgia IGP) Stormwater Pollution Prevention Plans (SWPPPs)

- Applicable industrial activity sectors with coverage under the Georgia IGP that often involve outdoor liquid materials storage include, but are not limited to:

  Sector C: Chemical and Allied Products
  Sector I: Oil and Gas Extraction
  Sector M: Automobile Salvage Yards
  Sector N: Scrap Recycling Facilities
  Sector P: Land Transportation and Warehousing
  Sector Q: Water Transportation Maintenance/Cleaning
  Sector S: Air Transportation Facilities
  Sector U: Food and Kindred Products

  Please see Appendix B for the SIC codes that correspond to each industrial activity sector

- The SWPPP Team leader is responsible for ensuring containment area valves are locked and for inspection of accumulated storm water prior to release.

Specific State Regulations and Requirements

- Georgia Oil or Hazardous Materials Spills or Releases Act (O.C.G.A. 12-14-1)

- Construction, design, and installation of Aboveground Storage Tanks (ASTs): O.C.G.A. 25-2-16 and Rules and Regulations of the State of Georgia (GRR) 120-3-11

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A3. Storage of Scrap and Recyclable Materials

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from facilities that salvage and store scrap and recyclable materials

APPLICABLE OPERATIONS AND ACTIVITIES

- Auto Salvage Yards
- Scrap Metal Dealers
- Local Government Recycling Facilities and Centers
- Commercial or Institutional Recycling Facilities
- Industrial Equipment Recycling / Repurposing
- Any Other Facility or Site with Outdoor Storage of Scrap and Recyclable Materials

POLLUTION CONTROL APPROACH

Reduce the potential for contamination of stormwater runoff from scrap and recyclable materials during breakdown as well as short- or long-term storage

KEY POLLUTION PREVENTION AND CONTROL MEASURES

- Remove all liquids, batteries and hazardous materials from incoming scrap, vehicles, equipment and appliances before compacting and storage
- Cover or enclose scrap items and recycling stockpiles
- Divert runoff from storage areas using dikes, berms, containment trenches, culverts or surface grading
- Treat runoff from salvage and recycling sites with an appropriate stormwater water quality structural control

TARGETED POLLUTANTS

- [x] **Sediment**
- [ ] **Nutrients**
- [ ] **Bacteria**
- [ ] **Organic Matter**
- [x] **Oil & Grease**
- [x] **Heavy Metals**
- [x] **Toxic Chemicals**
- [x] **Abnormal pH**
- [x] **Trash & Debris**
- [x] **Other:** Vehicle Fluids

Overview

Business and other facilities and operations that salvage and/or recycle often store scrap items and materials outdoors on a temporary or permanent basis. This can include vehicles, equipment, appliances, electronics, scrap metal, and recyclables such as cans, bottles, glass, plastic, cardboard and paper.

Stormwater runoff from these sites may contain oils, greases, gasoline and other hydrocarbons, acidic and alkaline compounds, heavy metals, suspended solids, BOD, and other toxic organic chemicals such as polychlorinated biphenyls (PCBs) and chlorofluorocarbons (CFCs). Unsecured scrap and recyclable materials can also be carried away by stormwater runoff, creating the potential for blockage in stormwater drainage systems and trash in downstream waterways.

Pollution Prevention and Control Measures

- Provide a designated area to drain fluids from vehicles, equipment, appliances and other items before crushing/compacting and storage. This area should have a bermed, impervious surface (preferably Portland cement concrete) and be covered with a roof or tarp. Drip pans should be used during all fluid removal operations and placed under potential leaks.

- Remove all fluids, batteries and hazardous materials from incoming vehicles, equipment, appliances, and other salvage items. Fluids to be removed can include:

    - Gasoline
    - Motor Oil and Lubricants
    - Antifreeze, Coolants and Refrigerants
    - Brake and Transmission Fluids
    - Solvents
    - Other Liquid Chemicals and Wastes

- Use dry absorbents, such as absorbent granules, socks and pads to clean up spills or leaking fluids. Absorbents should be cleaned up properly, bagged and disposed of properly.

- Segregate all waste fluids, and store and dispose, or recycle, these fluids properly. See Section A2 (Storage of Liquid Materials) for more information on liquid storage.

- Remove any other contaminated or hazardous items or materials from vehicles, equipment, appliances and other salvage items. Store and dispose, or recycle, these items properly. These items and materials may include:

    - Airbag Cartridges
    - Oil Filters
    - Brake Pads and Shoes
    - Fluorescent Bulbs
    - Mercury Switches
    - Other Contaminated or Hazardous Items and Materials

    See Section B4 (Hazardous Material / Waste Management) for more information on hazardous materials handling and storage.

- Remove batteries from vehicles, equipment and electronics, and store using an enclosed container. Properly recycle or dispose of the batteries. Use neutralizing agents such as baking soda for lead-acid batteries in case of battery breaks or leaks.

- Conduct all vehicle and equipment crushing operations in a bermed, impervious area.

- Install alarms and/or pump shutoff systems on outdoor equipment with hydraulic reservoirs exceeding 150 gallons in the event of a line break, or provide for secondary containment.
- Follow Section D3 (Equipment/Tools Cleaning and Washing) for any parts or scrap cleaning activities.
- All scrap metal, vehicles, appliances, equipment and materials that may contaminate stormwater runoff should be covered with permanent or semi-permanent covers to prevent contact with rain.
- Dikes, berms, containment trenches, culverts, and surface grading should be used to divert runoff from storage areas
- Cover or enclose stockpiles or bins of paper, cardboard, glass, plastic and any other material that has the potential to contaminate stormwater runoff.
- Label storage containers of all fluids, recyclables and waste materials.
- Ensure that all stormwater from the site is treated by an appropriate structural or non-structural stormwater control. Stormwater controls that provide water quality treatment for the contaminant(s) in question may be found in *Volume 2, Technical Handbook*.

Additional Considerations

- Some activities and operations, such as high-pressure washers, may be required by the local regulations to be connected to the sanitary sewer.
- If transporting salvage, scrap or recyclable items, an impermeable liner should be placed in the vehicle, as well as spill cleanup materials, to capture and clean up any spilled or leached fluids or contaminants.
- Local fire regulations should be consulted on the clearance of roof covers over flammable materials.

Inspection and Preventive Maintenance Requirements

Table A3-1 Typical Inspection and Preventive Maintenance Activities for Storage of Scrap and Recyclable Materials

Activity	Schedule
• Inspect inbound items and materials for leaks	Hourly / Ongoing
• Inspect the storage area(s) to check for contamination from scrap materials and recyclables. Promptly clean up any leaks, spills, or contamination in the storage area.	Ongoing
• Sweep and clean paved storage areas when needed. Collect and properly dispose of any loose scrap, recyclables, trash and debris. Do not hose down paved areas.	As needed (frequently/seasonally)
• Identify, remove and properly dispose of any contaminated soils.	As needed

Spill Prevention and Response

- Develop Standard Operating Procedures (SOPs) for spill prevention and clean up (see Section 2.1.5).
- Store and maintain appropriate cleanup materials on site in a location near the storage area(s).
- Keep a mercury spill kit on site for any release of mercury from switches, anti-lock brake systems, and switch storage areas.

Considerations for Local Government-Owned or Operated Facilities and Operations

- Local government recycling centers should adopt and incorporate these pollution prevention and control measures, as well as develop appropriate Standard Operating Procedures (SOPs) for implementing them.

Considerations for Industrial NPDES (Georgia IGP) Stormwater Pollution Prevention Plans (SWPPPs)

- Applicable industrial activity sectors with coverage under the Georgia IGP that often undertake operations and activities that involve storage of scrap and recyclable materials include, but are not limited to:

  Sector M: Automobile Salvage Yards
  Sector N: Scrap Recycling Facilities

  Please see Appendix B for the SIC codes that correspond to each industrial activity sector

- All facilities covered under the Georgia IGP are required to identify the location(s) of any dismantling/processing, storage or maintenance activities and pollutant(s) that may come in contact with stormwater in their SWPPP, as well as document applicable control measures.
- The Georgia IGP includes additional pollution prevention and control measures required for automobile salvage yards (Sector M) and scrap recycling facilities (Sector N).
- The Georgia IGP requires annual analytical sampling of stormwater discharges from some industrial activity sectors. Please refer to the permit and your SWPPP for specific sampling requirements.
- Leachate from waste piles is prohibited under the Georgia IGP.

Specific State Regulations and Requirements

- Georgia Oil or Hazardous Materials Spills or Releases Act (O.C.G.A. 12-14-1)
- Georgia Hazardous Waste Management Act (O.C.G.A. 12-8-60)

B1. Loading and Unloading Operations

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from any outdoor loading, unloading or transfer of liquid or solid materials

APPLICABLE OPERATIONS AND ACTIVITIES

Any commercial, industrial, institutional or local government site, facility or operation which undertakes the loading or unloading of solid materials, or the transfer of liquids to or from storage containers and tanks outdoors.

POLLUTION CONTROL APPROACH

Prevent contact with rain and stormwater runoff and employ proper procedures during loading, unloading and transfer operations

KEY POLLUTION PREVENTION AND CONTROL MEASURES

- Conduct loading, unloading and material transfer operations indoors if possible
- Cover loading/unloading areas
- Use drip pans during liquid material transfer
- Immediately identify, clean up and properly dispose of any leaks or spills
- Design loading/unloading areas to avoid contact with rain and stormwater runoff

TARGETED POLLUTANTS

- [x] **Sediment**
- [x] **Nutrients**
- [ ] **Bacteria**
- [x] **Organic Matter**
- [x] **Oil & Grease**
- [x] **Heavy Metals**
- [x] **Toxic Chemicals**
- [x] **Abnormal pH**
- [x] **Trash & Debris**
- [ ] **Other:**

Overview

Loading and unloading of both liquid and solid materials and products often takes place outdoors on docks and at terminals from trucks, rail cars and other transport vehicles. Materials that are spilled, leaked, or lost during transfer have the potential to accumulate and come into contact with rain and stormwater runoff and can contribute oil and greases, nutrients, heavy metals, sediment, toxic chemicals and abnormal pH to runoff and downstream receiving waters.

Pollution Prevention and Control Measures

- Develop an operations plan for loading, unloading, and transfer of solid and liquid materials, which includes spill and leak prevention measures.
- Conduct loading, unloading and other material transfer operations during dry weather or indoors if possible.
- Loading/unloading areas should be covered to reduce exposure of materials to rain.
- Use overhangs or door skirts between trailers and buildings.
- Load and unload only at designated loading areas to limit the areas where spills and leaks can occur.
- For liquid transfer operations, use drip pans under hoses and pipe connections, and when making and breaking connections. Check equipment regularly for leaks, including valves, pumps, flanges and connections.
- Install drip pan system between rails under railroad tank cars to collect spillage.
- Drip pans should be stored in a covered area and must be cleaned periodically. Properly dispose of any collected/dripped material.

Figure B1-1 Example of Loading Door Skirt

- Contain and immediately clean up any leaks or spills during material transfers. Never hose down the loading/unloading area into a stormwater drain or drainage ditch.
- Park transport vehicles and tanker trucks in designated areas where spills and leaks can be contained.

Loading/Unloading Area Design Features

- Design loading and unloading areas to prevent contact with rain and stormwater runoff:
    - Cover the loading/unloading area with a roof or awning structure.
    - Pave and grade the loading/unloading area
    - Use berms or curbs to prevent stormwater runoff from adjacent areas from flowing onto the loading/unloading area.
    - Position roof downspouts away from loading/unloading area.
- For reactive and liquid materials, the loading and unloading areas should be paved with Portland cement concrete. Special coatings may be required for some materials.

- For liquid transfer areas, the loading area should be designed to prevent liquid spills from entering a stormwater drain, drainage ditch or surface water by sloping the area to a drain connected to a dead-end sump or sanitary sewer. Ensure that the secondary containment system is large enough to contain the entire volume of a potential spill.

- Ensure that all stormwater from the site is treated by an appropriate structural or non-structural stormwater control. Stormwater controls that provide water quality treatment for the contaminant(s) in question may be found in *Volume 2, Technical Handbook*.

- Local fire regulations should be consulted on the clearance of roof covers over flammable materials.

Inspection and Preventive Maintenance Requirements

Table B1-1 Typical Inspection and Preventive Maintenance Activities for Loading and Unloading Operations

Activity	Schedule
• Inspect loading/unloading area(s) to check for any material lost, leaked or spilled during transfer operations. Promptly contain and clean up any leaks or spills.	Ongoing
• Check liquid transfer equipment regularly for leaks from valves, pumps, flanges and connections.	Ongoing
• Loading/unloading areas, including parking and access roads, should be swept and cleaned when needed. Solid materials should be collected and disposed of properly. Do not hose down paved areas.	As needed (frequently/seasonally)
• Inspect berms, curbing, and secondary containment systems. Perform repairs as needed.	Weekly

Spill Prevention and Response

- Develop Standard Operating Procedures (SOPs) for spill prevention and clean up (see Section 2.1.5).

- Store and maintain appropriate spill cleanup materials on site in a location near the loading/unloading area(s).

Considerations for Local Government-Owned or Operated Facilities and Operations

- Local government entities that are involved with outdoor loading, unloading or transfer of liquid or solid materials should adopt these pollution prevention and control measures, and develop appropriate Standard Operating Procedures (SOPs) for implementing them.

Considerations for Industrial NPDES (Georgia IGP) Stormwater Pollution Prevention Plans (SWPPPs)

- Industrial activity sectors with coverage under the Georgia IGP that undertake loading and unloading operations are required to identify the location of all loading/unloading areas on the site map in their SWPPP and document applicable control measures to address potential pollutants.

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B2. Fueling Operations

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from vehicle and equipment fueling activities

APPLICABLE OPERATIONS AND ACTIVITIES

Any permanent or mobile site, facility or operation at which the fueling of vehicles and equipment is taking place, including:

- Gas Stations
- Truck Stops and Terminals
- Fleet Maintenance Yards
- Airports
- Mobile Fueling Operations
- Construction Sites
- Any Other Site Fueling Vehicles or Equipment

POLLUTION CONTROL APPROACH

Maximize the prevention of leaks and spills, and ensure that any leaked or spilled fuel is properly cleaned up

KEY POLLUTION PREVENTION AND CONTROL MEASURES

- Never leave fueling operations unattended
- Cover fueling areas and prevent contact with stormwater runoff
- Do not "top off"
- Use overflow protection devices
- Consider using off-site fueling stations or a designated fueling area for mobile operations.
- Immediately identify, clean up and properly dispose of any leaks or spills

TARGETED POLLUTANTS

- ☐ **Sediment**
- ☐ **Nutrients**
- ☐ **Bacteria**
- ☐ **Organic Matter**
- ☑ **Oil & Grease**
- ☑ **Heavy Metals**
- ☑ **Toxic Chemicals**
- ☐ **Abnormal pH**
- ☑ **Trash & Debris**
- ☑ **Other:** Gasoline and Other Fuels

Overview

Fueling operations include any facility or site that refuels vehicles, equipment or small containers with gasoline, diesel fuel, kerosene, jet fuel or other petroleum products. Spills and leaks that occur during fueling can contaminate stormwater runoff, surface water and groundwater with toxic hydrocarbons, oil and grease, and heavy metals.

Pollution Prevention and Control Measures

For all fueling operations:

- Never leave fueling of vehicles and equipment unattended.
- Post signs at the fuel dispenser or fuel island reminding users not to top off fuel tanks when filling, which can increase the risk of spilling fuel onto the ground.
- Ensure the following safeguards are in place:
    - Fuel dispensing equipment and pumps are equipped with automatic shutoffs and overflow protection to prevent spills and leaks.
    - Protective guards around pumps, tanks and piping to prevent damage from vehicles.
    - Clear tagging or labeling of all equipment, pumps and valves.
- Install vapor recovery nozzles and systems to help control drips and protect air quality.
- Maintain clean fuel dispensing areas using dry cleanup methods such as sweeping for removal of litter and debris, and the use of rags and absorbents for leaks and spills. Absorbents should be removed promptly and disposed as hazardous waste. See Section B4 (Hazardous Materials/Waste Management) for more information.

For stationary (permanent) fueling operations:

- Cover the fueling area with an overhanging roof structure or canopy so that rain cannot come in contact with the fueling area.
- Label drains within the facility by paint/stencil, sign, or marker to indicate whether they flow to an oil/water separator, sanitary sewer, or stormwater drain.
- If an existing fueling pad drains to storm or sanitary sewer, consider installing a valve which can be closed to prevent discharge in the event of a fuel spill (as shown in Figure B2-1). If the fueling pad drainage connects to sanitary sewer, a pretreatment permit may be required.
- Use secondary containment when transferring fuel from a tanker truck to onsite fuel tanks. Cover storm drains in the vicinity during transfer.

For mobile fueling operations:

- Use off-site stationary fueling stations as much as possible. These businesses are better equipped to handle fuel and spills properly.
- All fueling operations should be located to ensure that spills or leaks will not discharge, flow or be washed to the stormwater drainage system, surface waters or groundwater.
- If the facility or site has a large number of vehicles and equipment, consider establishing a designated fueling area rather than using a mobile fueling truck. The fueling area should be a level-grade area and located a minimum of 50 feet away from concentrated flows of stormwater, stormwater drains, drainage ditches, and surface waters.

- Place temporary caps over nearby catch basins and manhole covers so that if a spill occurs it is prevented from entering the stormwater drainage system.
- Use drip pans or absorbent pads to capture drips and spills during fueling. Absorbents must be removed promptly and disposed as hazardous waste.
- If fueling is done during evening/night hours, lighting should be provided.
- Spill and clean up materials should be located in the mobile fueling vehicles.

Fueling Area Design Features

- Design fueling areas to prevent contact with rain and stormwater runoff:
  - Cover the entire fueling area with a roof or canopy structure.
  - Use berms or curbs to prevent stormwater runoff from flowing onto the fueling area.
  - Position roof downspouts away from fueling area.
- Fueling areas should be paved with Portland cement concrete, free of cracks and gaps, and impervious in order to contain leaks and spills. Apply a suitable sealant that protects any asphalt in areas surrounding the fueling area.
- Use a trench or perimeter drain around the fueling area or slope the pavement to a drain connected to a dead-end sump, an underground storage container which does not discharge to the stormwater drainage system. The sump captures and holds spilled fuel from the pad to be pumped out later.

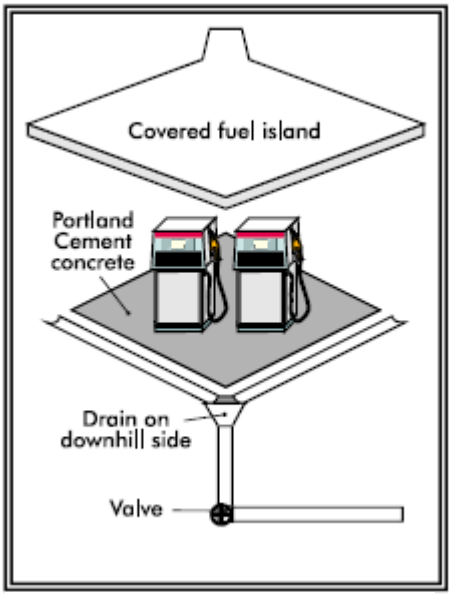

Figure B2-1 Fueling Area Design Features

- Install spill control devices (such as an oil/water separator) in catch basins that collect stormwater runoff from the fueling area.
- Ensure that all stormwater from the site is treated by an appropriate structural or non-structural stormwater control. Stormwater controls that provide water quality treatment for the contaminant(s) in question may be found in *Volume 2, Technical Handbook*.

Additional Considerations

- All specific standards set by Federal and Georgia laws concerning the storage of oil and hazardous materials must be met, including:
  - Spill Prevention Control and Countermeasure (SPCC) Plan
  - Secondary containment
  - Integrity and leak detection monitoring
  - Emergency preparedness plans
- Storage of all fuels should comply with the Uniform Fire Code and the National Electric Code, and any other applicable code, including local fire regulations on the clearance of roof covers over flammable materials.
- Follow appropriate practices and protocols for the loading, filling and/or unloading of liquid materials. See Section B1 (Loading/Unloading Operations) for more details.

Inspection and Preventive Maintenance Requirements

Table B2-1 Typical Inspection and Preventive Maintenance Activities for Fueling Operations

Activity	Schedule
• Inspect the fueling area to check for any material leaks or spills. Promptly clean using dry methods such as rags and absorbents. Properly dispose of cleanup materials and any contaminated soil.	Ongoing
• Inspect vehicles and equipment each day of use for leaks, loose fittings and improper or poor fitting gaskets. Leaks should be repaired immediately or equipment removed from service.	Daily
• Fueling areas should be swept and cleaned when needed. Trash and debris should be collected and disposed of properly. Do not hose down paved areas.	As needed (frequently/seasonally)
• Inspect spill control devices to remove separated floatable liquids. Properly dispose of captured fuel and other contaminants.	After storm events, or as required by manufacturer guidelines or a maintenance agreement

Spill Prevention and Response

- For applicable facilities storing liquid petroleum and related materials, a Spill Prevention Control and Countermeasure (SPCC) Plan must be developed and kept up-to-date. Regulatory requirements and sample SPCC Plans can be found at *www.epa.gov/oilspill*
- Develop Standard Operating Procedures (SOPs) for spill prevention and clean up (see Section 2.1.5).
- Have an emergency plan, equipment and trained personnel ready at all times to deal immediately with major spills
- Store and maintain appropriate spill cleanup materials on site in a location near the fueling area(s)

Considerations for Local Government-Owned or Operated Facilities and Operations

- The following local government functions and departments are often involved with fueling operations:
    - Local fleet management
    - Public works
    - Transportation (streets & highways)
    - Parks / recreation

  Local government entities that undertake stationary and/or mobile fueling activities should adopt these pollution prevention and control measures, and develop appropriate Standard Operating Procedures (SOPs) for implementing them.

Considerations for Industrial NPDES (Georgia IGP) Stormwater Pollution Prevention Plans (SWPPPs)

- Applicable industrial activity sectors with coverage under the Georgia IGP that often undertake fueling operations include, but are not limited to:

  Sector G: Transportation Equipment, Industrial or Commercial Machinery
  Sector J: Mining and Dressing
  Sector K: Landfills, Land Application Sites, and Open Dumps
  Sector P: Land Transportation and Warehousing
  Sector Q: Water Transportation Maintenance/Cleaning
  Sector S: Air Transportation Facilities

  Please see Appendix B for the SIC codes that correspond to each industrial activity sector

- The SWPPP must include a list of significant spills and leaks of toxic or hazardous pollutants that occurred in areas that are exposed to precipitation, or that otherwise drain to a stormwater conveyance at the facility, after the date of three years prior to the effective date of the permit. This list is required to be updated as appropriate during the term of the permit.

Specific State Regulations and Requirements

- Georgia Oil or Hazardous Materials Spills or Releases Act (O.C.G.A. 12-14-1)

- Georgia Hazardous Waste Management Act (O.C.G.A. 12-8-60)

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B3. Solid Waste Handling and Transfer

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from the improper storage, handling and transfer of solid wastes

APPLICABLE OPERATIONS AND ACTIVITIES

Any facility, site or operation that generates, stores, or transfers trash, garbage or other solid wastes.

POLLUTION CONTROL APPROACH

Prevent and reduce the discharge of pollutants to stormwater runoff by reducing waste generation and by proper storage, handling and transfer of solid wastes

KEY POLLUTION PREVENTION AND CONTROL MEASURES

- Reduce solid waste generation as much as possible
- Protect solid waste and containers from contact with rain and stormwater runoff
- Inspect solid waste management areas for leaking containers or spills
- Cover temporary waste piles with a waterproof cover
- Prevent leaks and spills during solid waste transfer

TARGETED POLLUTANTS

- [x] **Sediment**
- [x] **Nutrients**
- [x] **Bacteria**
- [x] **Organic Matter**
- [x] **Oil & Grease**
- [x] **Heavy Metals**
- [x] **Toxic Chemicals**
- [ ] **Abnormal pH**
- [x] **Trash & Debris**
- [ ] **Other:**

Overview

Solid waste management involves the collection, storage, transfer and final disposal of trash, garbage and solid wastes from commercial, industrial, institutional or local government facilities, sites and operations.

Improper handling, storage and transfer of solid wastes can contribute trash and floatables, oil and greases, heavy metals, nutrients, suspended solids, toxic chemicals and other pollutants to stormwater runoff and downstream receiving waters.

Pollution Prevention and Control Measures

Waste Reduction:

- Reduce waste generation at the site or facility:
  - Maintain usage and waste inventory
  - Modify processes or equipment to generate less waste
  - Use substitute materials with less toxic substances
- Use waste segregation and separation.
- Recycle materials whenever possible.

Solid Waste Containers and Waste Management Areas:

- Use covered dumpsters and solid waste containers with leak-proof lids and covers. Ensure that dumpster lids and container covers are always closed when not in use.
- Solid waste management areas should be located a minimum of 50 feet away from concentrated flows of stormwater, drainage courses, and stormwater drains, and should not be located in areas prone to flooding or ponding.
- Dumpsters and waste containers should be located on paved areas or concrete pads, and covered by an overhanging roof structure or canopy when possible.
- Utilize a secondary containment system (such as curbing, berms, liner or vault) where waste containers touch the ground to prevent contact with stormwater runoff and to contain spills. Smaller waste containers can be raised off the ground with a pallet or similar method.
- Ensure that dumpster or solid waste container capacity (size and number) is adequate for the waste stream generated by the facility.
- Only appropriate solid wastes should be placed in dumpsters and solid waste containers. Certain wastes such as hazardous wastes, appliances, fluorescent lamps, pesticides, etc., may not be disposed of in solid waste containers [see Section B4 (Hazardous Material/Waste Management) for more information].
- Do not dump liquids in dumpsters.
- Fats, oils and grease should be collected separately and not disposed into solid waste containers.

Figure B3-1 Warning Label Against Placing Hazardous Wastes in Dumpster

- Avoid overfilling a dumpster or solid waste container—arrange for regular waste collection before containers overflow.

- Dumpsters and solid waste containers should be kept in good condition without corrosion or leaky seams. Repair or replace if they are deteriorating to the point where leakage is occurring. Consider the use of dumpster and container liners.

Figure B3-2 Leaking Dumpsters and Solid Waste Containers Can Be a Significant Source of Stormwater Pollution

- Immediately clean up any leaks or spills from a dumpster or solid waste container. Never hose down the solid waste management area into the stormwater drain or drainage ditch.

- Dispose of rinse and washwater from the cleaning of dumpster and solid waste containers to a sanitary sewer drain in accordance with local wastewater requirements. Never discharge the washwater onto pavement, or to a stormwater drain or drainage ditch.

- Keep all solid waste collection and storage areas clean.

Temporary Waste Piles:

- Cover temporary waste piles with a waterproof cover (made of polyethylene, polypropylene, hypalon or equivalent). The cover should be adequately secured.

Litter:

- Provide a sufficient number of covered litter receptacles for the facility.

- Empty litter receptacles frequently to prevent spillage.

- Stencil or mark stormwater drains on the facility's property with "DUMP NO WASTE: KEEP IT CLEAN – DRAINS TO STREAM"

Solid Waste Transfer and Transport:

- Loading and unloading solids wastes can cause leaks and spills during transfer. Operate all equipment to minimize spills and fugitive emission losses (such as dust or mist). Vacuum transfer systems can help minimize waste loss.

- Ensure that vehicles that transport waste have spill prevention equipment such as baffles for liquid wastes, and sealed gates and spill guards for solid waste.

Inspection and Preventive Maintenance Requirements

Table B3-1 Typical Inspection and Preventive Maintenance Activities for Solid Waste Handling and Transfer

Activity	Schedule
• Check dumpsters and solid waste containers to ensure that lids and covers are closed tightly. Ensure drain plug is present and not leaking. Check the integrity of the dumpster or solid waste container.	Weekly / Ongoing
• Inspect the solid waste management areas regularly to check for loose trash or solid waste materials. Promptly clean up any leaks or spills.	Ongoing
• Sweep and clean paved solid waste management areas when needed. Collect and properly dispose of any loose trash or solid waste materials. Do not hose down paved areas.	Weekly / As needed

Spill Prevention and Response

- Develop Standard Operating Procedures (SOPs) for spill prevention and clean up (see Section 2.1.5).
- Store and maintain appropriate spill cleanup materials on site in a location near the solid waste management area.

Considerations for Local Government-Owned or Operated Facilities and Operations

- All local government facilities should adopt these pollution prevention and control measures, and develop appropriate Standard Operating Procedures (SOPs) for implementing them.
- Local governments that provide solid waste collection services should ensure that all commercial, industrial and residential service customers comply with these protocols and practices.
- Dumpster pad design details that conform to these protocols should be promulgated by the local government.

Considerations for Industrial NPDES (Georgia IGP) Stormwater Pollution Prevention Plans (SWPPPs)

- Industrial activity sectors with coverage under the Georgia IGP that have solid waste handling and disposal operations are required to identify the location of all areas used for the treatment, storage and disposal of wastes on the site map in their SWPPP and document applicable control measures to address potential pollutants.
- Many facilities will, at a minimum, have solid waste containers on-site and should include the appropriate control measures in their SWPPP.
- Leachate from waste piles is prohibited under the Georgia IGP.

Specific State Regulations and Requirements

- Georgia Comprehensive Solid Waste Management Act (O.C.G.A. 12-8-20)

B4. Hazardous Material / Waste Management

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from the improper handling and disposal of hazardous materials and hazardous wastes

APPLICABLE OPERATIONS AND ACTIVITIES

Any facility, site or operation that uses hazardous materials and/or generates hazardous waste. Hazardous materials and wastes include:

- Toxic Chemicals
- Corrosive and Reactive Materials
- Ignitable and Flammable Materials
- Radioactive Materials
- Pathogenic, Carcinogenic, Infectious, and Etiologic Agents
- Any other materials deemed a hazardous material or waste in Georgia, or listed in 40 CFR Parts 110, 117, 261, or 302

POLLUTION CONTROL APPROACH

Reduce the potential for contamination of stormwater runoff from the improper handling, transfer, storage, and disposal of hazardous materials and hazardous wastes

KEY POLLUTION PREVENTION AND CONTROL MEASURES

- Follow guidance on Material Safety Data Sheets for labeling, handling, storage, cleanup and proper disposal of hazardous materials.
- Ensure that hazardous materials and wastes are stored in proper sealed containers in good condition.
- Store and handle hazardous materials and waste indoors or in enclosed sheds
- Cover outdoor handling and storage areas with a roof or canopy, and protect containers from direct contact with rain and stormwater runoff
- Use less hazardous materials whenever possible

TARGETED POLLUTANTS

- ☐ **Sediment**
- ☐ **Nutrients**
- ☑ **Bacteria**
- ☐ **Organic Matter**
- ☑ **Oil & Grease**
- ☑ **Heavy Metals**
- ☑ **Toxic Chemicals**
- ☑ **Abnormal pH**
- ☐ **Trash & Debris**
- ☑ **Other:** Hazardous Materials

Overview

Hazardous materials and wastes are those that "could cause injury or death; or damage or pollute land, air, or water." This includes substances that are ignitable (flammable), corrosive, toxic, explosive, or reactive, i.e., react with air, water, or acids or bases. Specific definitions are found in the Code of Federal Regulations (40 CFR Part 261).

Improper handling, transfer, storage and disposal of hazardous materials and wastes can result in the contamination of stormwater runoff, surface water and groundwater.

Pollution Prevention and Control Measures

- Material Safety Data Sheets (MSDS) must be available for each hazardous material used or generated at a facility, site or operation and should be followed for details regarding labeling, handling, storage, cleanup and proper disposal.
- Label all containers of hazardous materials with the identity of the substance as shown on the MSDS as well as the appropriate hazard warning (health and physical hazards), according to Federal regulations.
- Obtain proper Federal and Georgia approvals to generate hazardous waste.
- Wherever possible, store and handle hazardous materials and wastes indoors or in enclosed storage sheds.
- Designate hazardous waste collection sites and ensure that waste is collected only at authorized disposals areas.
- Hazardous material and waste handling, transfer, mixing and storage areas outdoors should be located a minimum of 50 feet away from concentrated flows of stormwater, drainage courses, and stormwater drains, and should not be located in areas prone to flooding or ponding.
- Outdoor handling and storage areas for hazardous material or waste containers should be paved and covered with an overhanging roof structure or canopy. Utilize a secondary containment system (such as curbing, berms, liner or vault) where containers touch the ground to prevent contact with stormwater runoff and to contain spills. Smaller storage containers can be raised off the ground with a pallet or similar method, with provisions for spill control.
- All hazardous materials and wastes should be in sealed containers constructed of a suitable material. Ensure that each container is compatible with its contents. Containers must be in good condition and not leaking.
- Containers should be kept closed at all times except when adding or removing hazardous materials or wastes.
- Transfer or mixing of all liquid hazardous materials, and the transfer of liquid hazardous wastes should be performed with secondary containment in place.
- All spills and leaks of hazardous materials and wastes should be immediately cleaned up with the appropriate method and disposed of properly.
- Follow appropriate practices and protocols for the loading, filling and/or unloading of liquid materials. See Section B1 (Loading/Unloading Operations) for more details.
- Review MSDS for chemical compatibility guidance. Incompatible hazardous materials or wastes should be stored at least 20 feet apart and be separated by a non-combustible partition, dike, berm, or secondary containment device.

- Storage of reactive, ignitable or flammable materials and wastes should comply with the Uniform Fire Code and the National Electric Code, and any other applicable code.
- Secure and restrict access to hazardous material and waste storage and transfer areas to prevent vandalism-caused contamination.
- All specific standards set by Federal and Georgia laws concerning the storage of hazardous materials must be met, including:
  - Spill Prevention Control and Countermeasure (SPCC) Plan
  - Secondary containment
  - Integrity and leak detection monitoring
  - Emergency preparedness plans
- Never mix hazardous wastes.
- Do not store hazardous waste for more than 90 days.

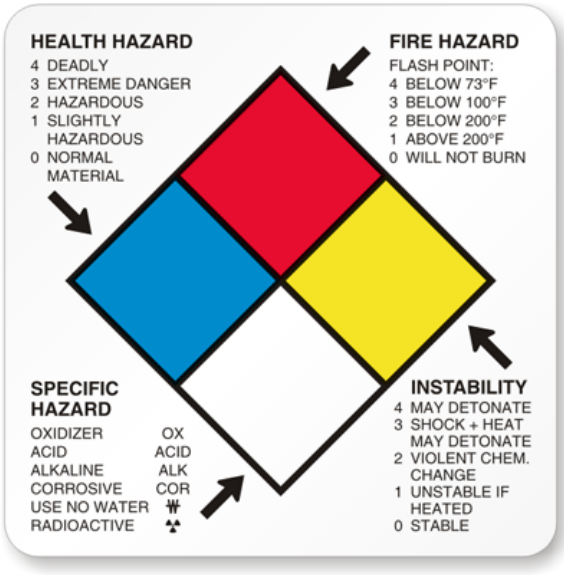

Figure B4-1 NFPA Hazard Label for Hazardous Materials

- Minimize working quantities of hazardous materials stored on hand.
- Minimize use and generation of hazardous materials and waste, if possible.
- Consider the use of less hazardous materials for the same activity or process.

Inspection and Preventive Maintenance Requirements

Table B4-1 Typical Inspection and Preventive Maintenance Activities for Hazardous Material / Waste Management

Activity	Schedule
• Inspect hazardous material and waste handling and storage areas and containers to ensure that containers are properly labeled, closed and secure. Ensure that containers are not leaking or deteriorated. Promptly contain and properly dispose of any leaks or spills of hazardous material or waste.	Daily / Ongoing
• Replace leaking or damaged containers.	As needed
• Inspect berms, curbing, and secondary containment systems. Perform repairs as needed.	Weekly

Spill Prevention and Response

- Develop Standard Operating Procedures (SOPs) for spill prevention and clean up (see Section 2.1.5).
- Store and maintain appropriate spill cleanup materials on site in a location near the hazardous materials and/or waste handling and storage area(s).

Considerations for Local Government-Owned or Operated Facilities and Operations

- Local government entities that use hazardous materials and/or generate hazardous waste should adopt these pollution prevention and control measures, and develop appropriate Standard Operating Procedures (SOPs) for implementing them.

Considerations for Industrial NPDES (Georgia IGP) Stormwater Pollution Prevention Plans (SWPPPs)

Applicable industrial activity sectors with coverage under the Georgia IGP that often undertake hazardous material and waste management include, but are not limited to:

Sector C: Chemicals and Allied Products
Sector I: Oil and Gas Extraction
Sector K: Hazardous Waste Treatment, Storage or Disposal Facilities

Please see Appendix B for the SIC codes that correspond to each industrial activity sector

- All facilities covered under the Georgia IGP are required to identify the pollutant(s) or pollutant constituents associated with each industrial activity in their SWPPP, including any hazardous materials or wastes.

- The SWPPP must include a list of significant spills and leaks of toxic or hazardous pollutants that occurred in areas that are exposed to precipitation, or that otherwise drain to a storm water conveyance at the facility, after the date of three years prior to the effective date of this permit. This list is to be updated as appropriate during the term of the permit.

- The following non-stormwater discharges are not authorized under the Georgia IGP: leachate, gas collection condensate, drained free liquids, contaminated groundwater, laboratory-derived wastewater, and contact washwater from washing truck and railcar exteriors and surface areas that have come in direct contact with solid waste at a landfill facility.

Specific State Regulations and Requirements

- Georgia Oil or Hazardous Materials Spills or Releases Act (O.C.G.A. 12-14-1)

- Georgia Hazardous Waste Management Act (O.C.G.A. 12-8-60)

- Georgia Hazardous Site Response Act (O.C.G.A. 12-8-90)

C1. Outdoor Manufacturing Operations

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from manufacturing operations taking place outside

APPLICABLE OPERATIONS AND ACTIVITIES

Any outdoor manufacturing or production activity including:

- Processing
- Fabrication
- Mixing
- Milling
- Refining
- Grinding/Crushing
- Any Other Outdoor Manufacturing Activity With Possible Contaminants

POLLUTION CONTROL APPROACH

Cover and contain outdoor manufacturing activities to prevent contact with rain and stormwater runoff.

KEY POLLUTION PREVENTION AND CONTROL MEASURES

- Move manufacturing activity indoors if possible
- Cover the manufacturing/production work area
- Modify the activity to reduce exposure to rain and potential contamination of stormwater runoff
- Perform outdoor manufacturing activities during dry periods, whenever possible
- Immediately clean up and properly dispose of leaks and spills
- Sweep work areas on a regular basis

TARGETED POLLUTANTS

- [x] **Sediment**
- [ ] **Nutrients**
- [ ] **Bacteria**
- [x] **Organic Matter**
- [x] **Oil & Grease**
- [x] **Heavy Metals**
- [x] **Toxic Chemicals**
- [x] **Abnormal pH**
- [x] **Trash & Debris**
- [ ] **Other:**

Overview

Industrial, commercial and government facilities may perform some manufacturing or production activities in outdoor areas. These activities include outdoor processing, fabrication, mixing, milling, refining, grinding, crushing, and operations using hazardous materials. These activities have the potential to produce or release pollutants such as suspended solids, abnormal pH, heavy metals, oils and greases, toxic chemicals, and other pollutants that can contaminate stormwater runoff, surface water and groundwater.

Pollution Prevention and Control Measures

- If practical and cost-effective, relocate the manufacturing/production activity indoors.
- Cover the manufacturing or production area(s) with a permanent roof if possible.
- If moving or covering the activity is not possible:
    - Perform the activity during dry periods when rain is not likely, whenever possible.
    - Modify or segregate the activity to eliminate or minimize exposure to rain and/or contamination of stormwater runoff.
    - Use berms or curbs to prevent stormwater runoff from adjacent areas from flowing onto the manufacturing or production area(s).
    - Place drip pans or absorbent materials beneath any process or activity with a potential to leak or spill contaminants.
- Provide a secondary containment system for all outdoor manufacturing or production equipment or processes that may use oil or any hazardous material.
- Install alarms and/or pump shutoff systems on outdoor equipment with hydraulic reservoirs exceeding 150 gallons in the event of a line break, or provide for secondary containment.
- All equipment should be regularly inspected and properly maintained such that they do not leak or discharge petroleum, hydraulic oil, or other pollutants.
- Immediately contain and clean up any leaks or spills during manufacturing or production using appropriate methods. Use dry absorbents, such as absorbent granules, socks and pads to clean up spills or leaking fluids. Absorbents should be cleaned up properly, bagged and disposed of properly.
- Cover outdoor open process tanks (such as dip tanks) when not in use.
- Cover temporary storage piles and waste materials with reinforced tarpaulins or place in covered bins.
- Do not dump liquids in dumpsters.
- Oil and grease should be collected separately and not disposed into solid waste containers.
- Sweep or use other dry methods such as vacuuming to clean outdoor manufacturing/production areas regularly. Do not hose down manufacturing and production areas.
- Ensure that all washwater is collected or drains to a sump or drain line connected to a sanitary sewer, a holding tank or treatment/recycling system.

Outdoor Manufacturing and Production Area Design Features

- For manufacturing and production activities where liquids are used, the production area should be designed to prevent liquid spills from entering a stormwater drain, drainage ditch or surface water by sloping the area to a drain connected to a dead-end sump or sanitary sewer. Ensure that the secondary containment system is large enough to contain the entire volume of a potential spill.

- Ensure that all stormwater from the site is treated by an appropriate structural or non-structural stormwater control. Stormwater controls that provide water quality treatment for the contaminant(s) in question may be found in *Volume 2, Technical Handbook*.

- Some local governments require that secondary containment areas regardless of size be connected to the sanitary sewer and/or require pretreatment. Contact the local wastewater provider for more information.

- Local fire regulations should be consulted on the clearance of roof covers over flammable materials.

Inspection and Preventive Maintenance Requirements

Table C1-1 Typical Inspection and Preventive Maintenance Activities for Outdoor Manufacturing Operations

Activity	Schedule
• Inspect outdoor manufacturing and production area(s) to check for any contaminants. Promptly contain, clean up and properly dispose of any contaminants. Do not hose down paved areas.	Daily / More often as needed
• Conduct routine preventive maintenance of process equipment and check for leaks.	Ongoing
• Inspect berms, curbing, and secondary containment systems. Perform repairs as needed.	Weekly

Spill Prevention and Response

- Develop Standard Operating Procedures (SOPs) for spill prevention and clean up (see Section 2.1.5).

- Store and maintain appropriate spill cleanup materials and equipment in a location near the outdoor manufacturing/production area(s).

Considerations for Local Government-Owned or Operated Facilities and Operations

- Local government entities that undertake outdoor manufacturing activities and operations should adopt these pollution prevention and control measures, and develop appropriate Standard Operating Procedures (SOPs) for implementing them.

Considerations for Industrial NPDES (Georgia IGP) Stormwater Pollution Prevention Plans (SWPPPs)

- Applicable industrial activity sectors with coverage under the Georgia IGP that often undertake outdoors manufacturing operations include, but are not limited to:

  Sector A: Timber Products
  Sector E: Glass, Clay, Cement, and Gypsum Products
  Sector R: Ship and Boat Building and Repairing Yards

  Please see Appendix B for the SIC codes that correspond to each industrial activity sector

- All facilities covered under the Georgia IGP are required to identify the location(s) of any industrial activity and pollutant(s) that may come in contact with stormwater in their SWPPP, as well as document applicable control measures.

- Process wastewater is not allowed to be discharged under the Georgia IGP.

C2. Outdoor Painting and Finishing

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from painting, finishing and coating activities occurring outside, including surface preparation

APPLICABLE OPERATIONS AND ACTIVITIES

Any activity involving the outdoor application of primers, paints, finishes and coatings to vehicles, furniture, manufactured products, buildings, structures, rooftops, roadways, parking lots, or any other exterior surface. This includes preparation work such as stripping and sandblasting.

POLLUTION CONTROL APPROACH

Contain pollutants from painting, finishing and coating activities to prevent pollutants from reaching surrounding stormwater drains, drainage ditches and surface waters

KEY POLLUTION PREVENTION AND CONTROL MEASURES

- Enclose painting, finishing and coating activities if possible
- Protect nearby stormwater drains
- Use ground cloths, tarps or plastic sheets to collect dust and debris, as well as paint spills
- Mix paint over drip trays or indoors
- Immediately clean up and properly dispose of any leaks or spills with absorbent materials
- Clean up equipment and dispose of waste paint properly

TARGETED POLLUTANTS

- [x] **Sediment**
- [ ] **Nutrients**
- [ ] **Bacteria**
- [ ] **Organic Matter**
- [x] **Oil & Grease**
- [x] **Heavy Metals**
- [x] **Toxic Chemicals**
- [ ] **Abnormal pH**
- [x] **Trash & Debris**
- [x] **Other:** Paints & Finishes

Overview

Outdoor painting, finishing and coating activities involve the application of primers, paints, finishes and coatings to any type of exterior surface. These activities also include surface preparation work that involves stripping, sanding, or sandblasting. Without proper pollution prevention, stormwater runoff from outdoor painting and finishing work areas can become contaminated by chemicals and solvents as well as suspended solids, heavy metals and toxic hydrocarbons.

Pollution Prevention and Control Measures

- If practical, enclose all painting, finishing and coating activities consistent with Georgia and OSHA regulations.
- Prior to starting surface preparation, painting, finishing and coating activities, check the weather and avoid when windy conditions or rain is likely.
- Follow Section D2 (Pressure Washing and Surface Cleaning) for any outdoor cleaning or pressure washing activities prior to surface preparation or painting/finishing/coating activities.
- Protect nearby stormwater drains with waterproof covers, filter fabric, or a secured liner prior to surface preparation or painting/finishing/coating activities.
- Transport paint and finishes to and from project sites in containers with secure lids and tied down to the vehicle.
- Use ground cloths, tarps or plastic sheeting under objects to collect dust and debris from stripping, sanding and sandblasting operations.
- Use ground cloths, tarps or plastic sheeting in locations where paints, finishes, coatings and other liquid materials are carried and applied.
- Review Material Safety Data Sheets (MSDS) for all paints, finishes, coatings, detergents, solvents and degreasers to ensure that they are stored, mixed, and used in full compliance with manufacturer's recommendation and the MSDS.
- Mix and pour paints, finishes and coatings over drip trays, and indoors if possible.
- Prior to sandblasting or spray painting, properly enclose the work area to contain blasting residue and airborne overspray and drift. Use plywood or temporary scaffolding to hang drop cloths or draperies. Inspect containment measures during the activity to ensure they are working.
- Test and inspect spray equipment prior to painting or coating. Tighten all hoses and connections. Do not overfill paint containers.
- Immediately contain and clean up, and properly dispose of any paint or other liquid spills using absorbent materials.
- Clean up and properly dispose of paint or metal chips, sediment, particulates, trash and debris generated using dry methods such as sweeping and vacuuming. Do not hose down work areas.
- If using water-based paints, clean painting equipment in a sink or basin connected to the sanitary sewer or in portable containers that can be dumped into a sanitary sewer. Clean up non-water-based paints, finishes, or other materials in a manner that enables the collection of waste paint and solvents for recycling and proper disposal. Never pour waste paint down a sink or storm drain.

- If any paint or coating contains lead or tributyl tin, it is considered a hazardous waste and should be disposed of as such.

- Properly store leftover paints and finishes if they are to be kept. Recycle paint when possible, or dispose of properly.

Inspection and Preventive Maintenance Requirements

Table C2-1 Typical Inspection and Preventive Maintenance Activities for Outdoor Painting and Finishing

Activity	Schedule
• Inspect outdoor painting and finishing area(s) to check for any contaminants including dust/sediment, debris, spilled paint/finishes, and trash. Promptly contain and clean up using appropriate methods. Do not hose down paved areas.	Daily / More often as needed

Spill Prevention and Response

- Develop Standard Operating Procedures (SOPs) for spill prevention and clean up (see Section 2.1.5).

- Store and maintain appropriate spill cleanup materials on site in a location near the work area.

Considerations for Local Government-Owned or Operated Facilities and Operations

- All outdoor painting, finishing and coating activities undertaken by a local government should implement these pollution prevention and control measures. Local government entities engaged in ongoing activities, such as facilities management, public works and transportation departments should develop appropriate Standard Operating Procedures (SOPs) for implementing them.

Considerations for Industrial NPDES (Georgia IGP) Stormwater Pollution Prevention Plans (SWPPPs)

- Applicable industrial activity sectors with coverage under the Georgia IGP that often undertake outdoor painting, finishing and coating activities include, but are not limited to:

  Sector A: Timber Products
  Sector G: Transportation Equipment, Industrial or Commercial Machinery
  Sector R: Ship and Boat Building and Repairing Yards

  Please see Appendix B for the SIC codes that correspond to each industrial activity sector

- All facilities covered under the Georgia IGP are required to identify the location(s) of any industrial activity and pollutant(s) that may come in contact with stormwater in their SWPPP, as well as document applicable control measures.

- Non-stormwater discharges for cleaning of exterior surfaces and building facades is authorized under the Georgia IGP only when no detergents or other chemicals are used.

- The following are not allowable under the Georgia IGP: non-stormwater discharges containing inks, paints, or substances (hazardous or nonhazardous) resulting from an onsite spill, including materials collected in drip pans; washwater from material handling and processing areas; and washwater from drum, tank or container rinsing and cleaning.

C3. Construction, Remodeling, Repair and Demolition

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from building construction, remodeling, repair and demolition activities

APPLICABLE OPERATIONS AND ACTIVITIES

Any operations or sites involved in construction, remodeling, repair or demolition activities.

POLLUTION CONTROL APPROACH

Manage the construction site properly to reduce the potential for contamination of stormwater runoff and pollutants from reaching the storm drainage system

KEY POLLUTION PREVENTION AND CONTROL MEASURES

- Protect stormwater drains near the construction area
- Follow the approved erosion and sedimentation control plan
- Store construction materials indoors or under cover
- Remove debris and trash as soon as possible
- Do not dispose of any wastes into a stormwater drain, drainage ditch or surface water
- Implement other applicable pollution prevention and control measures for various activities undertaken during construction

TARGETED POLLUTANTS

- [x] **Sediment**
- [x] **Nutrients**
- [ ] **Bacteria**
- [x] **Organic Matter**
- [x] **Oil & Grease**
- [x] **Heavy Metals**
- [x] **Toxic Chemicals**
- [x] **Abnormal pH**
- [x] **Trash & Debris**
- [x] **Other:** Construction Materials

Overview

Construction activities, including remodeling, repair and demolition, can generate a wide variety of contaminants that can pollute stormwater including sediment and suspended solids, solvents, paints, cleaners, adhesives, wood treatments, finishing residues, oil and other hydrocarbons, heavy metals, asphalt and concrete materials, asbestos residue, trash, debris and building materials.

Pollution Prevention and Control Measures

- Use stormwater drain covers, filter fabric, silt fences or secured liners to keep dust, sediment, other pollutants and wash water from entering the stormwater drainage system. Make sure that nearby stormwater drains are clearly marked. These runoff control devices should be in place at the beginning of the work day, and any accumulation of solids and contaminated runoff should be collected and properly disposed of at the end of each day.

- Follow the approved erosion and sedimentation (E&S) control plan and implement appropriate E&S controls and best management practices from the *Manual for Erosion and Sediment Control in Georgia*, including the following:

    - Remove existing vegetation only when absolutely necessary
    - Minimize the amount of soil exposed and sequence construction activities so that soil is not exposed for long periods of time
    - Seed or plant temporary vegetation on slopes or in areas where construction is not immediately planned
    - Schedule excavation and grading work during dry weather
    - Cover stockpiles or excavation soil with secured waterproof tarps or plastic sheeting
    - Use silt fencing and other erosion control and prevention techniques

- Store all construction materials indoors, or under a secure waterproof tarp or cover, wherever possible.

- Store treated lumber, paints, solvents, and other similar materials in a covered area (if left outdoors) and raise materials off the ground by using pallets or similar methods to avoid contact with stormwater runoff.

- Keep the construction site clean and orderly. Sweep the area regularly. Do not hose down the area to a stormwater drain, drainage ditch or surface water.

- Wipe up spills with rags and other absorbent materials immediately.

- Do not dump any solid or liquid waste materials onto the ground or pavement, down a stormwater drain, or into a drainage ditch or surface water.

- Remove debris and trash in a timely fashion. Properly dispose of construction debris and waste materials, including sweepings, sediment and washwater.

- Contact utilities protection center(s) and coordinate with utility providers prior to digging. Look for manholes and clean-outs that may indicate the presence of sewer or septic systems.

- Refueling of construction equipment should comply with Section B2 (Fueling Operations).

- Implement appropriate pollution prevention practices for concrete and asphalt production and installation. Refer to Section C4 (Concrete and Asphalt Production and Installation).

- Implement appropriate pollution prevention practices for outdoor painting, finishing and coating activities. Refer to Section C2 (Outdoor Painting and Finishing).

- Implement appropriate pollution prevention practices for equipment and tool cleaning and washing. Refer to Section D3 (Tool and Equipment Cleaning).
- Hazardous waste that cannot be reused or recycled should be stored and disposed of properly. Refer to Section B4 (Hazardous Material/Waste Management).
- Heavy equipment, pumps and generators should be properly maintained such that they do not leak petroleum, hydraulic oil, or other pollutants.
- Recycle residual building materials and supplies to the maximum extent practicable.
- For demolition activities, use water spray or approved dust suppressants to help control dust and particulates. The amount of water should be actively controlled and monitored to eliminate contaminated runoff from leaving the site. Avoid excessive and repeated applications of dust suppressant chemicals.
- Clean out the stormwater drainage system in the immediate vicinity of the construction activity after it is completed.

Inspection and Preventive Maintenance Requirements

Table C3-1 Typical Inspection and Preventive Maintenance Activities for Construction, Remodeling, Repair and Demolition

Activity	Schedule
• Check stormwater drain covers, inlet protection and other containment devices. Remove all accumulations of solids and other contaminants.	Daily
• Inspect construction site regularly to check for any contaminants. Promptly contain and clean up. Do not hose down paved areas.	Daily
• Properly dispose of construction debris and waste materials including sweepings, sediment and wash water.	As needed

Spill Prevention and Response

- Develop Standard Operating Procedures (SOPs) for spill prevention and clean up (see Section 2.1.5).
- Store and maintain appropriate spill cleanup materials and equipment on site in a location near the construction area(s).

Considerations for Local Government-Owned or Operated Facilities and Operations

- All local government construction, remodeling, repair and demolition projects and activities should utilize these pollution prevention and control measures, and develop appropriate Standard Operating Procedures (SOPs) for implementing them.

Specific State Regulations and Requirements

- Georgia Erosion and Sedimentation Act (O.C.G.A. 12-7-1)
- Manual for Erosion and Sediment Control in Georgia

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C4. Concrete and Asphalt Production and Installation

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from the production and installation of concrete or asphalt

APPLICABLE OPERATIONS AND ACTIVITIES

Any facilities, operations, or construction sites with concrete or asphalt production or installation activities including:

- Concrete Structures and Foundations
- Road and Highway Construction
- Bridge Construction
- Masonry and Wall Construction
- Paving/Resurfacing Activities
- Cement Casting
- Any Other Activity Using Concrete, Mortar or Asphalt

POLLUTION CONTROL APPROACH

Minimize the potential for concrete or asphalt materials from coming into contact with stormwater runoff or being intentionally dumped to the stormwater drainage system

KEY POLLUTION PREVENTION AND CONTROL MEASURES

- Develop a plan for proper disposal of liquid and solid wastes from production and installation activities
- Use stormwater drain covers and other containment methods
- Keep stormwater runoff away from production and pouring areas
- Use drip pans or tarps under mixing equipment
- Sweep up concrete dust and dispose of properly
- Discharge all process and wash waters appropriately

TARGETED POLLUTANTS

- [x] **Sediment**
- [ ] **Nutrients**
- [ ] **Bacteria**
- [ ] **Organic Matter**
- [x] **Oil & Grease**
- [x] **Heavy Metals**
- [x] **Toxic Chemicals**
- [x] **Abnormal pH**
- [x] **Trash & Debris**
- [ ] **Other:**

Overview

Concrete and asphalt production and installation activities occur at a wide variety of locations including construction sites, highway repair and maintenance projects, and manufacturing facilities. These activities have the potential to introduce a number of pollutants to stormwater runoff if the proper pollution prevention practices are not followed.

Asphalt production and installation can contaminate stormwater with high concentrations of toxic hydrocarbons, other organic compounds, oils and greases, and heavy metals. Concrete production, installation and resultant waste products can result in suspended solids and heavy metals contamination of stormwater runoff as well as pH alterations in receiving waters.

Pollution Prevention and Control Measures

- Before you begin work, develop a plan for proper disposal of liquid and solid wastes generated from all activities including concrete and asphalt production, pouring, paving, surfacing, resurfacing, grinding and sawcutting.
- Use stormwater drain covers, filter fabric, silt fences or secured liners to keep concrete dust, slurry, aggregate, other pollutants and wash water from entering the stormwater drainage system for all drainage areas where concrete and asphalt production and/or installation are being undertaken. Make sure that nearby stormwater drains are clearly marked. These runoff control devices should be in place at the beginning of the work day, and any accumulation of solids and contaminated runoff must be collected and properly disposed of at the end of each day.
- Check the weather forecast and avoid production and installation activities when rain is likely.
- Concrete and asphalt materials should be kept under cover in a building or silo, vehicle, or in a covered storage pile with secured waterproof cover or awning.
- Avoid producing or mixing excess amounts of concrete and asphalt.
- Contain production and pouring/paving areas with berms or other appropriate containment to prevent contact with stormwater runoff from surrounding areas.
- Whenever possible, cover portable concrete and asphalt mixing equipment with an awning or other simple structure to avoid contact with rainfall.
- Place drop cloths or tarps under all concrete and asphalt trucks and equipment when not in use.
- Use drip pans, drop cloths, or tarps wherever concrete, asphalt and asphalt emulsion chunks and drips are likely, such as beneath extraction points from mixing equipment.
- Place hay bales or other erosion controls downslope of installation areas to capture stormwater runoff containing mortar, cement or asphalt.
- Prevent cement dust from settling onto surfaces where it will contaminate stormwater runoff. Sweep up any settled dust and dispose of appropriately. Never hose down cement dust to the stormwater drainage system, drainage ditch, or surface water.
- Contain and collect the slurry from exposed aggregate washing, where the top layer of unhardened concrete is hosed or scraped off to leave an exposed aggregate or rough finish. Do not wash or allow discharge of concrete slurry or asphalt to a stormwater drain, drainage ditch, or surface water.
- Return leftover materials to the base stockpile or mixer.

- Protect newly poured and paved areas from rainfall and stormwater runoff until hardened or cured.
- Shovel or vacuum saw-cut slurry. Do not allow slurry to flow across pavement and do not leave on the surface of the payment.
- Avoid overspray of curing compounds. Minimize the drift of chemicals as much as possible by applying the curing compound close to the concrete surface.
- Seal coat, tack coat, slurry seal, fog seal and other sealing operations should not be applied if rainfall is predicted during the application or curing period.
- Designate a washout area facility for truck and equipment cleaning that has sufficient volume to completely contain all liquid and waste materials generated during cleaning. Locate the washout area a minimum of 50 feet away from a stormwater drain, drainage ditch or surface water.
- Washout of trucks and equipment should take place in the designated areas only.
- Discharge all process water from production, pouring and equipment cleaning activities to a sump, process water treatment, recycling system or sanitary sewer system. Never discharge or dump raw, excess or waste materials, slurry, or rinse water to a stormwater drain, drainage ditch or surface water.
- Appropriately dispose of any solid concrete or asphalt waste.

Additional Considerations

- For production facilities, pave the mixing, production, and/or pouring area(s) with a slope that drains to a central collection area. By sloping the pavement to a central location, loose chunks of concrete or asphalt aggregate can be collected more easily and recycled or disposed of properly.
- Ensure that all stormwater from the production facilites is treated by an appropriate structural or non-structural stormwater control. Stormwater controls that provide water quality treatment for the contaminant(s) in question may be found in *Volume 2, Technical Handbook*.
- For concrete production and pouring activities, a sump drain should not be provided as it will quickly clog with hardened concrete.

Inspection and Preventive Maintenance Requirements

Table C4-1 Typical Inspection and Preventive Maintenance Activities for Concrete and Asphalt Production and Installation

Activity	Schedule
• Check stormwater drain covers, inlet protection and other containment devices. Remove all accumulations of aggregate chunks and other solids, and dispose of properly.	Daily
• Sweep the pouring/installation/paving area and collect loose aggregate chunks and dust	Daily
• Check all production, mixing and installation equipment for leaks. Immediately clean up leaks and spills.	Daily

Spill Prevention and Response

- Develop Standard Operating Procedures (SOPs) for spill prevention and clean up (see Section 2.1.5).

- Store and maintain appropriate spill cleanup materials and equipment on site in a location near the concrete and asphalt production and installation area(s).

Considerations for Local Government-Owned or Operated Facilities and Operations

All concrete and asphalt production and installation activities undertaken, managed or funded by a local government should implement these pollution prevention and control measures. Local government entities engaged in ongoing activities, such as public works and transportation departments, should develop appropriate Standard Operating Procedures (SOPs) for implementing them.

Considerations for Industrial NPDES (Georgia IGP) Stormwater Pollution Prevention Plans (SWPPPs)

- Applicable industrial activity sectors with coverage under the Georgia IGP that often undertake concrete and asphalt production and installation include, but are not limited to:

  Sector D: Asphalt Paving, Roofing Materials and Lubricants
  Sector E: Glass, Clay, Cement, and Gypsum Products

  Please see Appendix B for the SIC codes that correspond to each industrial activity sector

- The Georgia IGP establishes numeric effluent limits and may require annual analytical sampling of stormwater discharges. Please refer to the permit and your SWPPP for specific sampling requirements.

C5. Chemical Application

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from chemical applications undertaken outdoors for pest control, wood treatment, and other applications

APPLICABLE OPERATIONS AND ACTIVITIES

Any outdoor chemical application such as:

- Pesticide / herbicide / fungicide treatment (other than landscaping activities)
- Lumber and wood treatment
- Sealing and waterproofing
- Dust or sediment management and control

POLLUTION CONTROL APPROACH

Practice proper application of chemical treatments and handling of chemicals to reduce the potential for contamination of stormwater runoff

KEY POLLUTION PREVENTION AND CONTROL MEASURES

- Never apply chemicals when it is raining or if rain is forecast
- Consider the least toxic chemical application that can accomplish the job
- Use the smallest amount of chemicals necessary
- Avoid excessive application by following manufacturers' guidelines
- Consider stormwater drain covers or filters for areas treated by chemical applications

TARGETED POLLUTANTS

- ☐ **Sediment**
- ☐ **Nutrients**
- ☐ **Bacteria**
- ☐ **Organic Matter**
- ☐ **Oil & Grease**
- ☑ **Heavy Metals**
- ☑ **Toxic Chemicals**
- ☐ **Abnormal pH**
- ☐ **Trash & Debris**
- ☑ **Other:** Pesticides, Other chemicals

Overview

Pesticides, herbicides, wood preservatives and other chemicals are often used outdoors for pest management, building and grounds maintenance, waterproofing and sealing, dust and sediment management and other industrial processes. Chemicals applied outdoors can pollute stormwater either through direct contact with rain or through stormwater runoff coming in contact with treated areas and surfaces.

Pollution Prevention and Control Measures

- Never apply chemicals outdoors when it is raining or if there is a significant chance of rain in the forecast.
- Avoid excessive application of the chemical. Always follow the manufacturers' application guidelines and directions for appropriate amounts and application conditions.
- Use the smallest amount of chemicals necessary to accomplish the intended purpose.
- Consider the use of a less toxic alternative to perform the required task.
- Use drip pans or absorbent pads to capture drips and spills when transferring liquid chemicals. Absorbents must be removed promptly and disposed of properly.
- Avoid mixing or applying chemicals near a stormwater drain, drainage ditch or surface water.
- Inspect application equipment, sprayers and hoses for leaks, loose fittings and improper or poor fitting gaskets. Leaks should be repaired immediately or equipment removed from service.
- When applying chemicals on rooftops and impervious surfaces, downspouts and stormwater drains should be covered.
- Protect nearby stormwater drains with covers, filter fabric, or a secured liner for all drainage areas treated by the chemical application or on/over which outdoor chemical application processes have occurred.
- Immediately clean up and properly dispose of any chemical leaks or spills using appropriate methods and materials. Do not hose down leaks or spills to a stormwater drain, drainage ditch or surface water.
- Follow all pollution prevention practices and guidance for hazardous materials and waste handling. See Section B4 (Hazardous Material/Waste Management) for more information.

Inspection and Preventive Maintenance Requirements

Table C5-1 Typical Inspection and Preventive Maintenance Activities for Chemical Application

Activity	Schedule
• Inspect application equipment for leaks, loose fittings and improper or poor fitting gaskets. Leaks should be repaired immediately or equipment removed from service.	Daily

Spill Prevention and Response

- Develop Standard Operating Procedures (SOPs) for spill prevention and clean up (see Section 2.1.5).

- Store and maintain appropriate spill cleanup materials in a location near the chemical application area(s).

Considerations for Local Government-Owned or Operated Facilities and Operations

- All chemical application activities undertaken by a local government should implement these pollution prevention and control measures. Local government entities engaged in ongoing activities, such as facilities management, public works, parks and recreation, and transportation departments, should develop appropriate Standard Operating Procedures (SOPs) for implementing them.

Considerations for Industrial NPDES (Georgia IGP) Stormwater Pollution Prevention Plans (SWPPPs)

- Applicable industrial activity sectors with coverage under the Georgia IGP that often undertake outdoors chemical application activities include, but are not limited to:

  Sector A: Timber Products
  Sector C: Chemicals and Allied Products
  Sector E: Glass, Clay, Cement, and Gypsum Products
  Sector J: Mining and Dressing
  Sector L: Landfills, Land Application Sites and Open Dumps
  Sector R: Ship and Boat Building and Repairing Yards

  Please see Appendix B for the SIC codes that correspond to each industrial activity sector

- All facilities covered under the Georgia IGP are required to identify the location(s) of any industrial activity and pollutant(s) that may come in contact with stormwater in their SWPPP, as well as document applicable control measures.

- Stormwater discharges from areas where they may be contact from chemical formations sprayed to provide surface protection of wood and timber products is *not* covered by the Georgia IGP.

Specific State Regulations and Requirements

- Georgia Oil or Hazardous Materials Spills or Releases Act (O.C.G.A. 12-14-1)

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D1. Interior Washing and Cleaning Activities

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from washing and cleaning activities performed indoors with portable equipment

APPLICABLE OPERATIONS AND ACTIVITIES

Any on-site or mobile operation that washes or cleans carpets, floors, upholstery or other interior items using portable cleaning equipment.

POLLUTION CONTROL APPROACH

Prevent washwater and wastewater from being inappropriately dumped or drained outdoors

KEY POLLUTION PREVENTION AND CONTROL MEASURES

- Use the least toxic detergents and cleaning agents
- Minimize the amount of water used, if possible
- Check equipment including tanks and hoses for leaks
- Never dispose of washwater or wastewater outdoors

TARGETED POLLUTANTS

- [x] **Sediment**
- [x] **Nutrients**
- [x] **Bacteria**
- [ ] **Organic Matter**
- [x] **Oil & Grease**
- [x] **Heavy Metals**
- [ ] **Toxic Chemicals**
- [ ] **Abnormal pH**
- [x] **Trash & Debris**
- [x] **Other:** Detergents and Cleaning Agents

Overview

Interior cleaning activities include the cleaning and/or washing of carpets, floors, upholstery and other interior items using portable cleaning equipment. These cleaning processes typically involve the removal of dirt or other stains using a wash solution with a portable containment device of limited capacity. Stormwater, surface water or groundwater can become contaminated if the wash- and wastewaters are disposed inappropriately outdoors.

Pollution Prevention and Control Measures

- Prior to beginning interior washing and cleaning activities, contact the local stormwater management agency and/or wastewater utility to determine the available options for the proper disposal of washwater and wastewater.
- Use the least toxic detergents and cleaning agents to get the job done.
- Minimize the amount of water used in interior washing activities, if possible.
- Inspect portable equipment, tanks and hoses that lead outdoors for leaks, loose fittings and improper or poor fitting gaskets. Leaks should be repaired immediately or equipment removed from service.
- Never dispose of any water from interior cleaning activities outdoors—do not pour washwater or wastewaters onto pavement or the ground, into a stormwater drain, drainage ditch or to surface water. Dispose of wash- and wastewater into a sanitary sewer in accordance with local wastewater requirements.
- Wastewater from cleaning activities may be permitted for sanitary sewer disposal if it does not contain high concentrations of toxic material.
- Do not dispose of solid materials or sludge left in tanks, containers, or trucks outdoors, or to a stormwater drain, drainage ditch or surface water. All solid materials and sludge must be disposed of properly.

Figure D1-1 Never Dispose any Cleaning Wastewater Outdoors

- Limit the amount of water used in interior washing operations. This will reduce the amount of wastewater generated.
- Recycle washwater whenever possible.

Inspection and Preventive Maintenance Requirements

Table D1-1 Typical Inspection and Preventive Maintenance Activities for Interior Washing and Cleaning Activities

Activity	Schedule
• Inspect equipment for leaks, loose fittings and improper or poorly fitting gaskets. Repair immediately or remove equipment from service.	Daily
• Check holding tanks regularly and dispose of wastewater properly.	As needed

Spill Prevention and Response

- Develop Standard Operating Procedures (SOPs) for spill prevention and clean up (see Section 2.1.5).
- Store and maintain appropriate spill cleanup materials on site in a location near the work area.

Considerations for Local Government-Owned or Operated Facilities and Operations

- All interior cleaning activities undertaken by a local government should implement these pollution prevention and control measures. Local government entities engaged in ongoing activities, such as facilities management, should develop appropriate Standard Operating Procedures (SOPs) for implementing them.

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D2. Pressure Washing and Surface Cleaning

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from outdoor pressure washing and surface cleaning activities

APPLICABLE OPERATIONS AND ACTIVITIES

Any outdoor pressure washing or surface cleaning operation or activity, such as the cleaning of building facades, rooftops, or pavements.

POLLUTION CONTROL APPROACH

Prevent contaminated washwater and pollutants from reaching or being discharged to the stormwater drainage system

KEY POLLUTION PREVENTION AND CONTROL MEASURES

- Identify nearby stormwater drains and protect with covers or screens
- Create a containment area for washwater contaminated with cleaning agents or pollutants
- Use the least toxic products needed for cleaning—consider using only water
- Manage and dispose of wash water from pressure washing and surface cleaning appropriately
- Minimize water use by using high pressure, low volume nozzles
- Consider dry methods of cleaning instead of wet washing

TARGETED POLLUTANTS

- [x] **Sediment**
- [x] **Nutrients**
- [ ] **Bacteria**
- [x] **Organic Matter**
- [x] **Oil & Grease**
- [x] **Heavy Metals**
- [ ] **Toxic Chemicals**
- [ ] **Abnormal pH**
- [x] **Trash & Debris**
- [x] **Other:** Detergents and Cleaning Agents

Overview

Outdoor pressure washing and surface cleaning activities, such as the cleaning of building facades, rooftops and pavements, can readily degrade water quality if the washwater is allowed to discharge to the stormwater drainage system or to surface water. The washwater from these activities can be contaminated with detergents and cleaning agents, suspended solids, organic matter, trash, heavy metals and numerous other pollutants present on the surfaces being washed.

Pollution Prevention and Control Measures

- Prior to pressure washing and surface cleaning activities, contact the local stormwater management agency and/or wastewater utility to determine the available options for the proper disposal of washwater.
- Identify and cover all nearby stormwater drains with impervious barriers such as berms, plugs or rubber mats, or screens as needed (see Table D2-1 below). Ensure stormwater drain covers and the amount of washwater generated will not flood the area or adversely affect vehicle or pedestrian traffic.
- Create a containment area with temporary curbs, berms and tarps as needed to keep wash water contained.
- Clean up as much as possible using dry cleaning methods such as sweeping and vacuuming before washing. Use absorbents on small oil spots.
- Consider surface cleaning only using water; when using detergents and cleaning agents, use the least toxic product needed to get the job done.
- Manage and dispose of washwater from pressure washing and surface cleaning appropriately:

Table D2-1 Pressure Washing and Surface Cleaning Wash Water Management

Paved Area?	Using Soap, Detergent or Cleaning Agents?	Washwater Management and Disposal Requirements
YES	YES	Use a water collection device that enables collection of the washwater and associated solids. A sump pump, wet vacuum or similar device may be used to collect the wash water and loose material. All collected water and solids must be disposed of properly.
YES	NO	A filter fabric catch basin insert or other type of filter media/screening device should be used to trap the particles in the washwater runoff. All filtered solids must be disposed of properly.
NO	YES	Disperse water as sheet flow and allow to infiltrate grass or ground. Do not allow to enter stormwater drainage system or flow to stream or other water body. Ensure this practice does not kill grass or vegetation.
NO	NO	Disperse water as sheet flow and allow to infiltrate grass or ground.

- Never dispose of washwater containing soap or other cleaning agents, grease, oil, solids, floatable debris or other pollutants onto pavement, or to a stormwater drain, drainage ditch or surface water. Discharge washwater to a holding tank truck or sanitary sewer in accordance with local wastewater requirements.

- Pressure washing wastewater that contains visible debris or residue, soap, detergent or other cleaning agents, or excessive amounts of any pollutant, may not be left on paved surfaces to evaporate, because that residue will eventually be discharged to the stormwater drainage system.

- Pressure washing and surface cleaning activities should not be undertaken during rain events or when rain is eminent.

- Minimize water use by using high pressure, low volume nozzles; this reduces the volume of wastewater that needs to be properly disposed.

- Instead of pressure washing and other wet surface cleaning, consider using alternative dry methods.

Inspection and Preventive Maintenance Requirements

Table D2-2 Typical Inspection and Preventive Maintenance Activities for Pressure Washing and Surface Cleaning

Activity	Schedule
• Check stormwater drain covers, inlet protection and other containment devices. Remove all accumulations of solids and other contaminants.	Upon completion of pressure washing / cleaning
• Properly dispose of washwater and solids.	Upon completion of pressure washing / cleaning

Spill Prevention and Response

- Develop Standard Operating Procedures (SOPs) for spill prevention and clean up (see Section 2.1.5).

- Store and maintain appropriate spill cleanup materials on site in a location near the work area.

Considerations for Local Government-Owned or Operated Facilities and Operations

- All pressure washing and surface cleaning activities undertaken by a local government should implement these pollution prevention and control measures. Local government entities engaged in ongoing activities, such as facilities management and public works departments, should develop appropriate Standard Operating Procedures (SOPs) for implementing them.

Considerations for Industrial NPDES (Georgia IGP) Stormwater Pollution Prevention Plans (SWPPPs)

- Non-stormwater discharges for cleaning of exterior surfaces and building facades is authorized under the Georgia IGP only when no detergents or other chemicals are used.

- Pavement washwater from containment zones and material handling and processing areas is not allowed to be discharged under the Georgia IGP.

D3. Tool and Equipment Cleaning

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from the cleaning of tools or small power equipment

APPLICABLE OPERATIONS AND ACTIVITIES

Any facilities, operations or construction sites that may have occasion to wash tools or small power equipment outdoors, including retail businesses and restaurants.

POLLUTION CONTROL APPROACH

Provide appropriate facilities and employ proper techniques for the cleaning of tools and equipment outdoors to prevent contaminated washwater and pollutants from reaching the stormwater drainage system

KEY POLLUTION PREVENTION AND CONTROL MEASURES

- Wash tools and equipment in areas designed to collect and hold wash and rinse water
- Use the least toxic detergents, cleaning agents or solvents needed
- Collect all washwater and discharge to a sanitary sewer, holding tank, or process treatment system
- Never dump washwater directly to a stormwater drain, drainage ditch or surface water

TARGETED POLLUTANTS

- [x] **Sediment**
- [x] **Nutrients**
- [ ] **Bacteria**
- [ ] **Organic Matter**
- [x] **Oil & Grease**
- [x] **Heavy Metals**
- [x] **Toxic Chemicals**
- [x] **Abnormal pH**
- [x] **Trash & Debris**
- [x] **Other:** Detergents and Cleaning Agents

Overview

The cleaning of tools and small power equipment outdoors can often contaminate stormwater runoff when inappropriate methods of cleaning are used and washwater is not managed properly. Pollutants can include detergents and cleaning agents, hydrocarbons and other toxic organic compounds, oils and greases, nutrients, heavy metals, abnormal pH, and suspended solids.

Pollution Prevention and Control Measures

- Tool and equipment washwater is considered process water and must be discharged to a sanitary sewer, holding tank or process treatment system, regardless of the washing method used.
- Designate a paved washing area for tools and equipment which can collect and hold the wash and rinse water or effluent generated. This area should be covered or bermed to collect the washwater and graded to direct the washwater for treatment or disposal.
- Designated wash areas should be well marked with signs indicating where and how washing must be done.
- Use the least toxic detergents, cleaning agents or solvents to get the job done.
- Minimize use of solvents. Clean using manual methods or steam cleaning when possible, or use water-based solvents. Use a wire brush or bake oven for small tools and parts cleaning. Use non-caustic cleaning methods instead of caustic agents whenever possible.
- Use self-contained sinks and tanks when cleaning with solvents. Do all liquid cleaning at a centralized area so the solvents and residues stay in one area.
- Consider recycling washwater with a closed loop system or use self-contained washers. Numerous products are commercially available that recycle and contain wash water and cleaning solvents (see Figure D3-1).

Figure D3-1 Self-Contained Closed Loop Parts Washing System
(photo courtesy of ESD Waste2Water, Inc.)

- Collect all washwater from tool and equipment washing operations and discharge to a sanitary sewer, holding tank, or process treatment system. Recycle or pretreat washwater effluent prior to discharge to the sanitary sewer as required by the local wastewater utility.
- Never discharge any washwater directly to a stormwater drain, drainage ditch or surface water.
- Cover outdoor wash areas when not in use to prevent contact with rainwater.

Inspection and Preventative Maintenance Requirements

Table D3-1 Typical Inspection and Preventive Maintenance Activities for Tool and Equipment Cleaning

Activity	Schedule
• Check to make sure all washwater sumps and berms do not leak	Upon completion of cleaning activities

Spill Prevention and Response

- Develop Standard Operating Procedures (SOPs) for spill prevention and clean up (see Section 2.1.5).
- Store and maintain appropriate spill cleanup materials on site in a location near the designated tool and equipment cleaning area.

Considerations for Local Government-Owned or Operated Facilities and Operations

- All tool and equipment cleaning activities undertaken by a local government should implement these pollution prevention and control measures. Local government entities engaged in ongoing activities should develop appropriate Standard Operating Procedures (SOPs) for implementing them.

Considerations for Industrial NPDES (Georgia IGP) Stormwater Pollution Prevention Plans (SWPPPs)

- Vehicle and equipment washwater is not allowed to be discharged under the Georgia IGP.

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D4. Vehicle and Heavy Equipment Washing and Cleaning

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from vehicle and heavy equipment washing and cleaning activities

APPLICABLE OPERATIONS AND ACTIVITIES

Any facility, site or operation that undertakes the washing and cleaning of vehicles and heavy motorized equipment including:

- Business, Government and Institutional Vehicle Fleets
- Operations with Industrial and Construction Equipment
- Car Dealerships
- Trucking Facilities
- Rental Car Facilities
- Vehicle Service and Body Shops
- Commercial Full- and Self-serve Car Washes
- Mobile Car Wash and Detailing Operations
- Airports and Aircraft Maintenance Facilities
- Railroad Yards and Maintenance Facilities

POLLUTION CONTROL APPROACH

Prevent the release of vehicle and heavy equipment washwater and associated pollutants to the stormwater drainage system

KEY POLLUTION PREVENTION AND CONTROL MEASURES

- Never allow vehicle washwater to flow to a stormwater drain, drainage ditch or surface water
- Use the least toxic products to get the job done
- Wash facilities at permanent sites should have a designated wash area connected to a sanitary sewer or treatment/recycling system
- Temporary sites and mobile car washing operations must cover stormwater drains and collect all washwater using berms or sumps

TARGETED POLLUTANTS

- [x] **Sediment**
- [x] **Nutrients**
- [ ] **Bacteria**
- [ ] **Organic Matter**
- [x] **Oil & Grease**
- [x] **Heavy Metals**
- [x] **Toxic Chemicals**
- [ ] **Abnormal pH**
- [x] **Trash & Debris**
- [x] **Other:** Detergents and Cleaning Agents

Overview

Washing and cleaning of vehicle exteriors and engine compartments is a common activity for commercial, institutional and government vehicle fleets, construction and industrial equipment, car dealerships, mobile car and detailing businesses, and other facilities and operations that use vehicles and heavy motorized equipment.

Washwater from vehicle cleaning and detailing activities can contaminate stormwater and receiving waters with toxic hydrocarbons, oils and grease, detergents and detailing chemicals, nutrients, heavy metals and suspended solids.

Pollution Prevention and Control Measures

For all vehicle washing and cleaning:

- Never allow washwater or cleaning agents (including detailing products) to flow into a stormwater drain, drainage ditch or surface water.
- If possible, eliminate the use of hazardous cleaning agents and detailing products. Use the least toxic products to get the job done:
    - Use biodegradable, phosphate-free detergents
    - Use non-caustic cleaning methods instead of using caustic agents
    - Use detergent-based or water-based cleaning systems in place of organic solvent degreasers
    - Replace chlorinated organic solvents with non-chlorinated solvents
    - Choose cleaning agents that can be recycled
- Use as little water as possible. High-pressure sprayers typically will use less water than a hose.
- Use hoses and cleaning equipment with nozzles that automatically turn off when left unattended.

For fleet or permanent facilities:

- Designate a paved vehicle wash area. This designated wash area should be well marked, and bermed and graded to capture washwater and direct it to a sump or drain line connected to a sanitary sewer, a holding tank or treatment/recycling system.
- Collect all washwater from vehicle cleaning operations and discharge to a sanitary sewer, holding tank, process treatment system or enclosed recycling system.
- The wash area should be covered when not in use to prevent contact with rainwater.
- Provide trash containers in the wash area.
- Do not conduct oil changes or other maintenance activities in the designated washing area. These activities should be conducted in an area specifically designated for vehicle maintenance.
- Ensure that all stormwater from the site is treated by an appropriate structural or non-structural stormwater control. Stormwater controls that provide water quality treatment for the contaminant(s) in question may be found in *Volume 2, Technical Handbook*.
- For smaller fleets and operations, consider the use of properly maintained off-site commercial car wash and cleaning facilities.

For vehicle washing at temporary locations (including mobile car wash operations):

- Prior to vehicle washing, cleaning or detailing activities, identify and cover all nearby stormwater drains with an impervious barrier such as berms, plugs or rubber mats.
- Create a designated wash area using temporary curbs, berms and tarps as needed to keep washwater contained. Have all vehicles and equipment washed in a designated wash area.
- All washwater must be collected using a sump pump, wet vacuum or similar device and properly disposed of to a sanitary sewer or holding tank.
- Keep cleaning and detailing products in an area where spills can be captured and contained.
- Collect or capture all spilled cleaning and detailing products using rags or other absorbent materials.
- Rinse paved areas following vehicle cleaning and before removing sumps/berms and stormwater drain covers.

Inspection and Preventive Maintenance Requirements

Table D4-1 Typical Inspection and Preventive Maintenance Activities for Vehicle and Heavy Equipment Washing and Cleaning

Activity	Schedule
• Properly dispose of washwater to a sanitary sewer or treatment/recycling system.	Upon completion of washing / cleaning
• Inspect wash areas for evidence of discharges to the stormwater drainage system and correct as needed.	Daily

Spill Prevention and Response

- Develop Standard Operating Procedures (SOPs) for spill prevention and clean up (see Section 2.1.5).
- Store and maintain appropriate spill cleanup materials and equipment on site in a location near the vehicle washing and cleaning area.

Considerations for Local Government-Owned or Operated Facilities and Operations

- The following local government functions and departments often undertake vehicle and heavy equipment washing and cleaning:
    - Local fleet management
    - Public works
    - Transportation (streets & highways)
    - Parks / recreation

  Local government entities that perform vehicle and heavy equipment cleaning activities should adopt these pollution prevention and control measures, and develop appropriate Standard Operating Procedures (SOPs) for implementing them.

Considerations for Industrial NPDES (Georgia IGP) Stormwater Pollution Prevention Plans (SWPPPs)

- Applicable industrial activity sectors with coverage under the Georgia IGP that often undertake vehicle and heavy equipment washing and cleaning include, but are not limited to:

  Sector E: Glass, Clay, Cement, Concrete and Gypsum Products
  Sector G: Transportation Equipment, Industrial or Commercial Machinery
  Sector I: Oil and Gas Extraction
  Sector J: Mining and Dressing
  Sector L: Landfills, Land Application Sites and Open Dumps
  Sector P: Land Transportation and Warehousing
  Sector Q: Water Transportation Maintenance/Cleaning

  Please see Appendix B for the SIC codes that correspond to each industrial activity sector

- Vehicle and heavy equipment washwater is not allowed to be discharged under the Georgia IGP.

E1. Landscaping, Lawn Care and Vegetation Management

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from landscaping, lawn care and vegetation management activities

APPLICABLE OPERATIONS AND ACTIVITIES

Landscaping, lawn care and vegetation management activities undertaken by commercial, industrial, institutional and government entities including businesses that provide services for residential homeowners such as:

- Vegetation/Landscaping Installation
- Landscape Maintenance
- Grass Seeding and Sodding
- Mowing and Lawn Care
- Fertilizer Application
- Pesticide Application
- Water and Irrigation
- Vegetation Removal

POLLUTION CONTROL APPROACH

Use proper landscaping practices to prevent the introduction of sediment, fertilizers, pesticides, and vegetative materials to the stormwater drainage system

KEY POLLUTION PREVENTION AND CONTROL MEASURES

- Conduct soil disturbance activities during dry weather
- Cover stockpiled landscaping materials
- Choose native plants and those that require less water and fertilizer
- Do not refuel or clean equipment near a stormwater drain, drainage ditch or surface water
- Properly apply fertilizers and pesticides
- Avoid overwatering
- Never blow clippings, leaves and other waste into a stormwater drain or drainage ditch

TARGETED POLLUTANTS

- [x] **Sediment**
- [x] **Nutrients**
- [x] **Bacteria**
- [x] **Organic Matter**
- [x] **Oil & Grease**
- [x] **Heavy Metals**
- [x] **Toxic Chemicals**
- [ ] **Abnormal pH**
- [x] **Trash & Debris**
- [x] **Other:** Pesticides

Overview

Landscaping, lawn care and vegetation management include a wide variety of activities, including vegetation installation and removal, lawn mowing, fertilizer and pesticide* application, watering and other landscaping practices. These may be performed by groundskeepers, commercial landscaping and lawn care businesses, public works and parks departments, and other public and private entities.

Improper landscaping practices can result in the contamination of stormwater runoff with sediment, nutrients, organic materials, toxic chemicals, heavy metals, oils and trash. Leaves, grass clippings and other removed vegetation can also clog stormwater drain inlets and pipe, resulting in localized flooding and damage.

**The term pesticide includes insecticides, herbicides, fungicides, and rodenticides*

Pollution Prevention and Control Measures

Landscaping and Planting Activities:

- Schedule any soil disturbance activities such as grading and excavation projects during dry weather.
- Use mulch or other appropriate erosion control measures when soils are exposed.
- Place temporarily stockpiled landscaping materials, including soil and mulch, away from stormwater drains, drainage ditches and surface waters. Berm and cover stockpiles with secured waterproof tarps or plastic sheeting to prevent exposure to rainfall and stormwater [see Section A1 (Storage of Bulk Materials) for more information].
- Choose appropriate turf grass varieties and plants with low nutrient (fertilizer) and water needs. Select native plants whenever possible.
- Soil should be carefully mixed and layered prior to planting. Incorporate a topsoil mix or organic material into the soil to create a transition layer that encourages deeper root systems and drought-resistant plants.
- Avoid seeding lawns on steep slopes or areas that do not drain well. Sod these areas to protect from erosion.
- Cover all stormwater drains before hydro-seeding.
- Use dry cleanup methods, such as sweeping and bagging, rather than blowing or washing off paved surfaces.
- Do not refuel or clean lawn mowers and other landscaping equipment near a stormwater drain, drainage ditch or surface water. Regularly inspect all landscaping equipment for leaks and repair as needed.

Mowing and Thatch Management:

- Turf grasses should be mowed high and frequently to reduce insects and weeds. Keep mower blades sharp. Grass can be cut lower in the spring and fall to stimulate root growth, but no shorter than 1½ inches.
- Excessive thatch should be removed by raking or using a dethatcher. A thatch layer of a half an inch or less can be beneficial by providing insulation and decreasing the need for watering.

Fertilizer Application:

- Determine the proper fertilizer application for the types of soil and vegetation involved. Soils should be tested to determine the correct fertilizer formula and requirements.
- Follow the manufacturers' recommendations and directions for the proper amounts of fertilizer and application instructions.
- Avoid applying fertilizers when it is raining or when heavy rain is forecast.
- Fertilizers should be worked into the soil rather that broadcast and left on the surface.
- Close fertilizer spreaders when going over pavement, bare soil and other non-vegetated surfaces.
- Calibrate fertilizer distributors (granular spreaders and liquid applicators) to avoid excessive application.
- Sweep up dry fertilizer granules that fall on pavement or other hard surfaces. Do not hose or blow off.

Weed / Pest Management:

- Try to use manual or mechanical methods for weed removal rather than applying herbicides.
- Properly identify weeds, diseases and insects before applying a pesticide.
- Consider the use of Integrated Pest Management techniques, where appropriate. (for more information see www.gaipm.org)
- Use non-toxic and less toxic pesticides and pest control methods, whenever possible. Avoid the use of copper-based pesticides.
- Read and follow the label directions and apply all pesticides as directed. Follow all federal, state, and local laws and regulations governing the use, storage, and disposal of fertilizers and pesticides and training of applicators and pest control advisors.
- Do not mix or prepare pesticides for application near a stormwater drain, drainage ditch or surface water. Prepare the minimum amount of pesticide needed for the job and use the lowest rate that will effectively control the pest.
- Spot treat only affected areas instead of using widespread pesticide application.
- Do not apply pesticides when it is raining or when rain is forecast. Check the irrigation schedule to ensure that pesticides applied will not be applied prior to watering.
- Apply pesticides only when wind speeds are low.
- Pesticides should never be applied directly to surface waters or within 100 feet of a streambank or shoreline.
- Sweep up any dry pesticide that falls onto pavement or other impervious surfaces. Do not hose or blow off. Follow manufacturers' instructions for any spills and leaks.

Watering and Irrigation:

- Avoid overwatering. Only water when plants and grass show signs of moisture stress.
- Water turf grass and vegetation slowly to allow water to infiltrate the soil and prevent runoff.
- Use rain sensors which turn off irrigation systems during periods of rain as well as soil moisture monitors and smart irrigation controllers which override scheduled irrigation when sufficient moisture is present.
- Consider drip irrigation systems for landscaped planting beds, rather than traditional sprinkler irrigation.
- Inspect irrigation systems periodically to ensure that the right amount of water is being applied and that excessive runoff is not occurring. Minimize excess watering and repair leaks in the irrigation system as soon as they are observed.

Waste Management:

- Never blow or dump grass clippings, leaves and other waste into the street, stormwater drain, drainage ditch or surface water.
- When possible, recycle grass clippings and leaves by using a mulching mower.
- Dispose of grass clippings, leaves, sticks, or other collected vegetation by bagging as solid waste for pickup or bringing to a composting facility or permitted landfill. If composting on-site, keep waste materials and compost away from stormwater drains and natural drainageways.
- Always cover waste materials when hauling off-site.
- Dispose of unused pesticides as hazardous waste [see Section B4 (Hazardous Material/Waste Management) for more information]. Dispose of empty pesticide containers according to the instructions on the container label.

Inspection and Preventive Maintenance Requirements

Table E1-1 Typical Inspection and Preventive Maintenance Activities for Landscaping, Lawn Care and Vegetation Management

Activity	Schedule
• Inspect all landscaping equipment for leaks and repair as needed.	Daily

Spill Prevention and Response

- Develop Standard Operating Procedures (SOPs) for spill prevention and clean up (see Section 2.1.5).
- Store and maintain appropriate spill cleanup materials on site in a location near the landscaping and vegetation management activities.

Considerations for Local Government-Owned or Operated Facilities and Operations

- The following local government functions and departments often undertake landscaping, lawn care and vegetation management activities:
    - Public works
    - Transportation (streets & highways)
    - Parks / recreation
    - Facilities management

  Local government entities that perform landscaping, lawn care and vegetation management activities should adopt these pollution prevention and control measures, and develop appropriate Standard Operating Procedures (SOPs) for implementing them.

Specific State Regulations and Requirements

- Georgia Erosion and Sedimentation Act (O.C.G.A. 12-7-1)
- Manual for Erosion and Sediment Control in Georgia

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E2. Street and Highway Repair & Maintenance

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from street and highway repair and routine maintenance activities

APPLICABLE OPERATIONS AND ACTIVITIES

Street and highway repair and maintenance undertaken by governments and private contractors including:

- Roadway Repairs
- Painting and Striping
- Resurfacing and Paving
- Bridge Repairs
- Mowing and Vegetation Management
- Deicing Operations

POLLUTION CONTROL APPROACH

Use proper pollution prevention practices during street and highway repair and maintenance activities to prevent the introduction of sediment, concrete/asphalt, pesticides, and organic matter to the stormwater drainage system

KEY POLLUTION PREVENTION AND CONTROL MEASURES

- Protect or cover stormwater drains in the vicinity of the maintenance project area
- Implement appropriate erosion and sedimentation control practices
- Cover and contain all liquid and solid materials used for maintenance work
- Paint/stripe and pave only during dry weather
- Capture any pollutants generated during bridge repair/maintenance using suspended tarps
- Properly dispose of clippings from routine vegetation management
- Use deicers with the least environmental impacts

TARGETED POLLUTANTS

- [x] **Sediment**
- [ ] **Nutrients**
- [ ] **Bacteria**
- [x] **Organic Matter**
- [x] **Oil & Grease**
- [x] **Heavy Metals**
- [x] **Toxic Chemicals**
- [x] **Abnormal pH**
- [x] **Trash & Debris**
- [x] **Other:** Pesticides, Deicing Materials

Overview

Street and highway repair and maintenance activities include roadway and bridge repairs, median and shoulder work, painting and striping, routine mowing and vegetation management, and deicing operations. If these activities are not conducted properly, they have the potential to contaminate stormwater runoff with sediment, abnormal pH, heavy metals, toxic hydrocarbons and other chemicals, organic matter, and deicing materials.

Pollution Prevention and Control Measures

General Measures for Street and Highway Repair and Maintenance:

- Protect or cover stormwater drain inlets in the vicinity of the maintenance activity or project area. Leave covers or berms in place until the job is complete.
- Implement appropriate erosion and sedimentation (E&S) controls and best management practices from the *Manual for Erosion and Sediment Control in Georgia*
- Cover and contain all maintenance supplies and materials with a temporary waterproof cover (made of polyethylene, polypropylene, hypalon or equivalent) to prevent contact with rain or stormwater runoff.
- Avoid storing piles of raw materials (soil, sand, gravel) in the street, near stormwater drains or gutters. If piles must be stored on the street or highway surface, use appropriate temporary containment or sediment barriers such as berms, dikes, fiber rolls, silts fences, or sandbags [see Section A1 (Storage of Bulk Materials) for more information].
- Do not refuel, service or clean maintenance trucks, paving equipment, mowers and other vehicles, tools and equipment near a stormwater drain, drainage ditch or surface water [see Section B2 (Fueling Operations) for more information].
- Regularly inspect all equipment for leaks and repair as needed.
- Sweep up wastes and debris after all repair and maintenance operations and dispose of appropriately. Do not hose down work areas.
- Clean out the stormwater drainage system in the immediate vicinity of the maintenance activity after it is completed.

Painting and Striping:

- Schedule painting, marking, and striping projects during dry weather only. Cease all activities when rain threatens.
- Use thermoplastic markings in place of paint, whenever feasible.
- Block nearby stormwater drain inlets (within 25 feet and/or down gradient of the project).
- Promptly clean up any spills of paints, cleaners or other chemicals [see Section C2 (Outdoor Painting and Finishing) for more information].

Resurfacing and Paving

- Implement appropriate pollution prevention practices for concrete and asphalt production and installation. Refer to Section C4 (Concrete and Asphalt Production and Installation).
- Re-seal or pave only on dry days when no rain is expected. Cease resurfacing and paving activities when rain threatens

Bridge Repair Work

- Use suspended tarps, booms and vacuums to capture pollutants (e.g. waste, debris, paint, solvents, rust and paint scrapings) generated during bridge repair and maintenance. If sanding or sand blasting, use a vacuum bag attachment [see Section C2 (Outdoor Painting and Finishing) for more information].
- When working on bridges, transport and store paint and materials in containers with secure lids.
- Do not transfer, store or load paint on a bridge.
- Use the appropriate stormwater and erosion and sedimentation control techniques when doing work along stream banks.

Vegetation Management:

- Mowing operations should be performed when the soil and grass are dry.
- Grass clippings should be left to decay and release their nutrients back to the turf, thus minimizing the need for fertilizer.
- Never blow or dump grass and vegetation clippings, leaves and other waste onto the street or highway surface, or into a stormwater drain, drainage ditch or surface water.
- Grass clippings as well as other cleared vegetation should be removed if they have the potential to clog stormwater drains and drainage channels along roads and highways.
- Pesticides* should only be used in places where mowing is very difficult to impossible.
- Do not apply pesticides when it is raining or when rain is expected. Pesticides should never be applied directly to surface waters, nor should they be applied within 100 feet of these waters.
- Apply pesticides only when wind speeds are low.
- Do not mix or prepare pesticides for application near a stormwater drain, drainage ditch or surface water. Prepare the minimum amount of pesticide needed for the job and use the lowest rate for effective vegetation control.
- Sweep up any dry pesticide that falls on pavement or other hard surfaces. Do not wash or blow off. Follow manufacturers' instructions for any spills and leaks.

**The term pesticide includes insecticides, herbicides, fungicides, and rodenticides*

Roadway Deicing Operations

- Use deicers and anti-icing materials with the least adverse environmental impact. Consider sand, calcium chloride, magnesium acetate and potassium acetate rather than urea and sodium chloride.
- Apply deicers on roadways only as needed, using the minimum quantities and lowest application rate that will be effective.
- Store and transfer deicing materials in a manner that ensures that no material comes in contact with precipitation or stormwater runoff.
- Sweep or clean up accumulated deicing materials and grit from street and highway surfaces as soon as weather conditions permit. Dispose of these materials properly.

Inspection and Preventive Maintenance Requirements

Table E2-1 Typical Inspection and Preventive Maintenance Activities for Street and Highway Repair & Maintenance

Activity	Schedule
• Inspect all street/highway repair and maintenance equipment for leaks and repair as needed.	Daily

Spill Prevention and Response

- Develop Standard Operating Procedures (SOPs) for spill prevention and clean up (see Section 2.1.5).
- Store and maintain appropriate spill cleanup materials and equipment on site in a location near the repair or maintenance project area.

Considerations for Local Government-Owned or Operated Facilities and Operations

- The following local government functions and departments often undertake street and highway repair and maintenance activities:
    - Public works
    - Transportation (streets & highways)
    - Water and wastewater utilities

  Local government entities that perform street and highway repair and maintenance activities should adopt these pollution prevention and control measures, and develop appropriate Standard Operating Procedures (SOPs) for implementing them.

E3. Street and Parking Area Sweeping & Cleaning

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from streets, driveways, parking areas and other impervious surfaces

APPLICABLE OPERATIONS AND ACTIVITIES

Public and private streets and roads, driveways, highways, parking areas, and other similar impervious surfaces.

POLLUTION CONTROL APPROACH

Utilize sweeping operations and other cleaning methods to prevent the buildup and discharge of pollutants to the stormwater system from roadways and parking areas

KEY POLLUTION PREVENTION AND CONTROL MEASURES

- Operate all sweeping equipment for optimal debris and pollutant removal
- Use vacuum sweepers if possible
- Conduct sweeping operations regularly to minimize the buildup of pollutants
- Schedule more frequent sweeping for areas with frequent stormwater drain clogging or high pollutant loadings
- Schedule sweeping after special events, mowing, and surface repairs
- Sweep parking areas on a regular basis
- Use absorbent materials to clean up vehicle fluid leaks

TARGETED POLLUTANTS

- [x] **Sediment**
- [x] **Nutrients**
- [ ] **Bacteria**
- [x] **Organic Matter**
- [x] **Oil & Grease**
- [x] **Heavy Metals**
- [ ] **Toxic Chemicals**
- [ ] **Abnormal pH**
- [x] **Trash & Debris**
- [x] **Other:** Vehicle fluids

Overview

Streets, roads, highways and other large paved surfaces, such as parking areas, are significant sources of pollutants in stormwater discharges including trash, sediment, organic matter and oil and grease. Regular sweeping and cleaning of roadways and parking areas are effective methods of removing both large and fine particulate pollutants.

Pollution Prevention and Control Measures

Road and Street Sweeping:

- Operate all sweeper equipment to get optimal removal of debris and pollutants from the roadway. This includes adjusting sweeper speed, brush alignment and rotation rate, and sweeping pattern.
- Vacuum sweepers are the preferred method of roadway sweeping, as mechanical brush sweeping does not remove fine particulates as effectively.
- Establish the frequency of street and highway sweeping based on vehicular traffic and litter patterns. Conduct highway and street sweeping at optimal frequencies to minimize the buildup of pollutants.
- If stormwater drain blockages and/or high pollutant loadings occur in certain areas, schedule additional sweeping in those areas.
- Schedule sweeping operations immediately after:
    - Special events such as street fairs, art shows and parades where additional debris is likely to have accumulated.
    - Grass cutting and/or vegetation removal on roadway medians and shoulders.
    - Street and highway repair projects that involve saw cutting, chip sealing or other operations that might have left wastes or debris on road surfaces.
- Schedule sweeping operations after leaf collection in the fall and after deicer application (including sand) in the winter.
- Schedule additional sweeping during new construction projects involving temporary storage of construction materials like dirt, sand and road base along the roadway.
- Ensure that debris from sweeper hoppers is collected and taken to a temporary storage area or directly to a landfill. Any temporary sweeper debris storage area should be more than 100 feet from any stormwater drain, drainage ditch or surface water. Ensure that any temporary storage areas are protected from contact with stormwater runoff [see Measure A1 (Storage of Bulk Materials) for more information].
- Avoid conducting sweeping operations during wet weather.
- Do not wash down any streets or curbs during sweeping operations. Fine water spray for dust control is acceptable but it should use as little water as possible.
- Consider using street signage or windshield flyer placements advising residents of “No Parking: Street Sweeping” days and enforcement for parked vehicles that consistently ignore the no-parking days.

Parking Lot Maintenance:

Figure E3-1 Providing Covered Trash Receptacles Can Reduce Litter

- Post "no littering" signs in parking areas.
- Provide an adequate number of covered trash receptacles to discourage littering. Clean out receptacles frequently to prevent spillage.
- Do not allow rooftop drains from adjacent buildings to discharge directly onto paved surfaces.
- Establish the frequency of parking area cleaning based on usage and litter patterns.
- Sweep the parking area using a vacuum or mechanical sweeper on a regular basis as needed. Vacuum sweepers are preferred as mechanical brush sweeping does not remove fine particulates as effectively. Dispose of debris and dirt at a landfill—never dump into a stormwater drain, drainage ditch or surface water.
- Clean up oil, antifreeze and other vehicle fluid leaks on pavement surfaces using absorbent materials. Properly dispose of used absorbents and cleanup materials.
- When pressure washing of parking areas is necessary, follow the procedures in Section D2 (Pressure Washing and Surface Cleaning), including:
    - Cover all nearby storm drains with impervious barriers such as berms, plugs or rubber mats, or screens as needed (see Table D2-1).
    - Collect and pump wash water to the sanitary sewer, filter the runoff and properly dispose of filtered solids, or discharge to a pervious surface or landscaped area as required in Table D2-1.
- Have designated personnel conduct inspections of the parking areas and stormwater facilities associated with them. Clean out stormwater inlets and catch basins on a regular basis as needed.

Inspection and Preventive Maintenance Requirements

Table E3-1 Typical Inspection and Preventive Maintenance Activities for Street and Parking Area Sweeping & Cleaning

Activity	Schedule
▸ Inspect cleaning equipment/sweepers for leaks on a regular basis.	Daily

Spill Prevention and Response

- Develop Standard Operating Procedures (SOPs) for spill prevention and clean up (see Section 2.1.5).
- Store and maintain appropriate spill cleanup materials on site in a location near the parking area(s).

Considerations for Local Government-Owned or Operated Facilities and Operations

- The following local government functions and departments often perform street and parking area sweeping and cleaning:

    - Public works
    - Transportation (streets & highways)
    - Parks / recreation
    - Facilities management

    Local government entities that undertake street and parking area sweeping and cleaning activities should adopt these pollution prevention and control measures, and develop appropriate Standard Operating Procedures (SOPs) for implementing them.

F1. Restaurants and Food Service

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from restaurants and other food service establishments, operations and related activities

APPLICABLE OPERATIONS AND ACTIVITIES

Any public or private establishment and related operations involved in the processing, preparation, cooking and/or serving of food such as restaurants, cafeterias, caterers, portable food stands and concessionaires.

POLLUTION CONTROL APPROACH

Implement proper handling procedures for solid and food wastes, cleaning activities and fats, oils and grease management to prevent contaminants from entering the stormwater drainage system

KEY POLLUTION PREVENTION AND CONTROL MEASURES

- Seal and contain food wastes to ensure they do not leak from solid waste containers and dumpsters
- Never dump food wastes into a stormwater drain or drainage ditch
- Perform equipment cleaning indoors or in a covered outdoor wash area connected to the sanitary sewer
- Use dry methods for cleaning outdoor areas whenever possible
- Recycle and/or properly dispose of fats, oils and grease
- Ensure fats, oils and grease containers are properly covered and sealed

TARGETED POLLUTANTS

- ☐ Sediment
- ☐ Nutrients
- ☑ Bacteria
- ☑ Organic Matter
- ☑ Oil & Grease
- ☐ Heavy Metals
- ☑ Toxic Chemicals
- ☐ Abnormal pH
- ☑ Trash & Debris
- ☐ Other:

Overview

Contaminants from restaurants and other food service related facilities, operations and activities have the potential to come in contact with stormwater runoff or enter the storm drain system if proper procedures are not implemented during the handling of solid and food wastes, cleaning activities, and fats, oils and grease management.

Pollution Prevention and Control Measures

Solid Waste Management:

- Solid and food wastes must be sealed or contained in some manner to ensure they do not leak from dumpsters or other waste containers. Never place liquid wastes or leaky garbage bags into a dumpster.
- Never dump any food products or wastes into a stormwater drain or drainage ditch.
- Follow all other proper solid waste management procedures in Section B3 (Solid Waste Handling and Transfer).

Food Service Cleaning Activities:

- Clean items such as floormats, vent filters, garbage cans and cooking equipment either:
    - Indoors in a mop sink (never in a food preparation sink) or dedicated indoor cleaning area with an internal floor drain connected to a sanitary sewer –or–
    - Using a covered outdoor wash area that is connected to a sanitary sewer.
- Never pour washwater out onto a parking lot, alley, sidewalk or street—or to a stormwater drain or drainage ditch.
- Regularly clean up food refuse and other trash and debris from parking lots and outside areas surrounding the restaurant or food service facility, particularly drive-thru and outdoor eating areas, using dry cleaning methods such as sweeping.
- When pressure washing outdoor areas (including parking lots and dumpster storage areas) is necessary, follow the procedures in Section D2 (Pressure Washing and Surface Cleaning), including:
    - Cover all nearby stormwater drains with impervious barriers such as berms, plugs or rubber mats, or screens as needed (see Table D2-1).
    - Collect and pump washwater to the sanitary sewer, filter the runoff and properly dispose of filtered solids, or discharge to a pervious surface or landscaped area as required in Table D2-1.
- Never hose down litter, food wastes or spills to a stormwater drain or drainage ditch.

Fats, Oils and Grease Management:

- Properly store and/or recycle fats, oils and grease using approved collection containers.
- Never pour fats, oils or grease into a sink, floor drain, or outdoors onto the ground or into a storm drain or drainage ditch.
- Never pour fats, oils or grease into a garbage can or dumpster.

- Dispose of all wastewater containing fats, oils and grease using a grease trap or interceptor (see Figure F1-1).
- To avoid spills, empty collection containers before they are full. Take steps to prevent fats, oils and grease from dripping or overflowing when transferring or emptying collection containers. Ensure that collection containers are covered and/or sealed before transporting from the kitchen.
- Collect and dispose of concentrated waste fats, oils and grease using a permitted waste grease hauler.
- When fats, oils and grease containers are emptied by vacuum trucks or other means, use drip pans or absorbent materials to capture any leaks or spills. Immediately clean up and properly dispose of any fats, oils or grease spills using absorbents.

Figure F1-1 Restaurant Grease Trap

Inspection and Preventive Maintenance Requirements

Table F1-1 Typical Inspection and Preventive Maintenance Activities for Restaurants and Food Service

Activity	Schedule
• Check dumpsters and solid waste containers to ensure that lids, covers and drain plugs are closed tightly. Promptly clean up any leaks.	Daily / Ongoing
• Check outdoor fats, oils and grease containers to ensure that lids are secure.	Weekly / Ongoing
• Contact a permitted waste grease hauler for disposal.	As needed

Spill Prevention and Response

- Develop Standard Operating Procedures (SOPs) for spill prevention and clean up (see Section 2.1.5).
- Store and maintain appropriate spill cleanup materials in a location near the food processing, preparation and cooking area(s).

Considerations for Local Government-Owned or Operated Facilities and Operations

- Local government facilities with food service-related operations and activities such as cafeterias and concessions should adopt these pollution prevention and control measures, and develop appropriate Standard Operating Procedures (SOPs) for implementing them.

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F2. Vehicle and Heavy Equipment Repair and Maintenance

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from vehicle repair and maintenance activities

APPLICABLE OPERATIONS AND ACTIVITIES

Any facility or operation that repairs and maintains motorized vehicles and heavy equipment including:

- Vehicle Service and Repair Shops
- Body Shops
- Business, Government and Institutional Vehicle Fleet Yards
- Car Dealerships
- Trucking Facilities
- Rental Car Facilities
- Operations with Industrial and Construction Equipment

POLLUTION CONTROL APPROACH

Implement proper procedures during repair and maintenance, vehicle storage, waste handling and cleaning activities to prevent contaminants from entering the stormwater drainage system

KEY POLLUTION PREVENTION AND CONTROL MEASURES

- Perform maintenance and repair activities indoors whenever possible
- Use a tarp or ground cloth, and drip pans for any temporary or mobile repair or maintenance work
- Clean up vehicle fluid leaks immediately
- Inspect stored vehicles for leaks
- Recycle oil, greases and other fluids
- Do not pour liquid wastes to sinks or storm drains
- Use rags and absorbents to clean up spills. Use dry sweeping or damp mops for work areas

TARGETED POLLUTANTS

- [x] **Sediment**
- [ ] **Nutrients**
- [ ] **Bacteria**
- [ ] **Organic Matter**
- [x] **Oil & Grease**
- [x] **Heavy Metals**
- [x] **Toxic Chemicals**
- [ ] **Abnormal pH**
- [x] **Trash & Debris**
- [x] **Other:** Vehicle fluids

Overview

Vehicle and heavy equipment repair and maintenance activities are potentially significant sources of stormwater pollution, due to the use of harmful materials and wastes involved. Engine repair and service, brake and transmission work, parts cleaning, replacement of vehicle fluids, and outdoor vehicle and equipment storage can all contribute a number of contaminants to stormwater runoff such as hydrocarbons (motor oil, gasoline, diesel fuel and greases), heavy metals (such as lead, copper and zinc), antifreeze, solvents and other toxic chemicals.

Pollution Prevention and Control Measures

Repair and Maintenance Activities:

- All maintenance and repair activities should be done in an indoor garage or vehicle maintenance area whenever possible.
- Any outdoor maintenance and repair activities at a stationary facility should only be done in a designated vehicle maintenance area covered with a roof and bermed or enclosed to prevent contact with rain and stormwater runoff.
- For temporary or mobile repair or maintenance work being done outdoors, always use a tarp or ground cloth, and drip pans beneath the vehicle or equipment to capture spills and drips.
- Check all incoming vehicles for oil and other vehicle fluid leaks. Use a drip pan underneath leaking vehicles and equipment.
- Designate a special area to drain and replace motor oil, coolant, and other vehicle fluids where drips and spills can be easily cleaned up. The designated area should have no connections to a stormwater drain or sanitary sewer.
- Avoid changing motor oil or vehicles fluids, or performing heavy equipment maintenance near a stormwater drain, drainage ditch, surface water or anywhere where contaminants could come into contact with rain or stormwater runoff.
- Always use a funnel when pouring liquids, and use a drip pan under a vehicle when unclipping hoses, unscrewing filters and removing other parts that might leak to keep splatters and drips off the shop floor.
- Clean up vehicle fluids with rags or other absorbent materials immediately.

Vehicle and Heavy Equipment Storage:

- Store idle equipment under cover.
- Inspect vehicles and heavy equipment for leaks on a regular basis, particularly those parked or stored long term. Use a drip pan underneath leaking vehicles and heavy equipment.
- Drain all fluids, including unused gasoline, engine oil, transmission and hydraulic oil, brake and radiator fluid, and air conditioning coolant, from wrecked vehicles and “part cars.”
- Store batteries upright in a contained and covered place indoors. Do not store batteries outside on the ground. Check to ensure batteries are not damaged or leaking. Keep battery acid-neutralizing materials, such as baking soda, available near the storage area.

Material and Waste Handling:

- Recycle greases, used oil and oil filters, antifreeze, cleaning solutions, automotive batteries, hydraulic fluids, and transmission fluids. Collect and store these recyclable materials separately and contract with a recycling service for pickup.
- Promptly transfer used fluids to the proper waste or recycling drums. Avoid leaving full drip pans or other open containers sitting out for extended periods of time.
- Place oil filters in a funnel over a waste oil recycling drum and allow to drain for at least 24 hours before recycling or disposing.
- Keep waste oil, antifreeze, and other fluids properly covered and contained, and provide for secondary containment [see Section A2 (Storage of Liquid Materials) for more information].
- Place cracked or leaking batteries in a non-leaking secondary container and dispose of properly at recycling or household hazardous waste facilities.
- Do not pour liquid wastes to floor drains, sinks, or into any other sanitary sewer connection, and do not dispose of liquid wastes to a stormwater drain, drainage ditch or surface water.

Cleaning Activities and Good Housekeeping Practices:

- Keep work areas, tools and equipment clean and orderly. Ensure that oil and grease accumulations do not buildup.
- Reusable cloth rags can be used to clean up small drips and spills. A permitted laundry can wash reusable cloth rags.
- For larger spills, apply absorbent materials such as absorbent granules, socks and pads. Absorbents should be cleaned up promptly, bagged and placed in the trash.
- Sweep or damp mop for regular cleaning of work areas.
- Avoid hosing down work areas and parking lots. If the area is pressure-washed, wash water should be collected and/or directed to the sanitary sewer [see Section D2 (Pressure Washing and Surface Cleaning) for more information]. Never direct washwater to a stormwater drain, drainage ditch or surface water.
- Post signs on sinks to remind employees not to pour wastes down sink drains.
- Stencil or mark nearby stormwater drains to indicate that they are not to receive liquid or solid wastes.
- Switch to the use of non-toxic or less toxic chemicals for maintenance and cleaning when possible:
    - Minimize use of solvents and chlorinated compounds.
    - Switch to non-chlorinated cleaners such as citrus-based solvents.
    - Consider use of water-based cleaning system.
    - Use non-caustic cleaning methods instead of caustic agents.
- Clean parts with a wire brush, steam cleaning or in a bake oven before using liquid cleaners.
- Consider recycling washwater with a closed loop system or use self-contained parts washers. Numerous products are commercially available that recycle and contain washwater and cleaning solvents.

- Use self-contained sinks and tanks when cleaning with solvents. Do all liquid cleaning at a centralized area so the solvents and residues stay in one area.

Inspection and Preventive Maintenance Requirements

Table F2-1 Typical Inspection and Preventive Maintenance Activities for Vehicle and Heavy Equipment Repair and Maintenance

Activity	Schedule
• Check to make sure all drip trays and used fluids are transferred to the proper waste or recycling drums	Daily
• Inspect outdoor work area(s) to check for any contaminants. Promptly contain and clean up. Do not hose down paved areas.	Daily / More often as needed

Spill Prevention and Response

- Develop Standard Operating Procedures (SOPs) for spill prevention and clean up (see Section 2.1.5).

- Store and maintain appropriate spill cleanup materials on site in a location near the work area(s).

Considerations for Local Government-Owned or Operated Facilities and Operations

- The following local government functions and departments are often undertake vehicle and heavy equipment repair and maintenance:

    - Local fleet management
    - Public works
    - Transportation (streets & highways)

  Local government entities that perform vehicle and equipment repair and maintenance activities should adopt these pollution prevention and control measures, and develop appropriate Standard Operating Procedures (SOPs) for implementing them.

Considerations for Industrial NPDES (Georgia IGP) Stormwater Pollution Prevention Plans (SWPPPs)

- Applicable industrial activity sectors with coverage under the Georgia IGP that often undertake vehicle and heavy equipment repair and maintenance include, but are not limited to:

  Sector G: Transportation Equipment, Industrial or Commercial Machinery
  Sector I: Oil and Gas Extraction
  Sector J: Mining and Dressing
  Sector P: Land Transportation and Warehousing
  Sector Q: Water Transportation Maintenance/Cleaning
  Sector R: Ship and Boat Building and Repairing Yards
  Sector S: Air Transportation Facilities

  Please see Appendix B for the SIC codes that correspond to each industrial activity sector

- All facilities covered under the Georgia IGP are required to identify the location(s) of any industrial activity and pollutant(s) that may come in contact with stormwater in their SWPPP, as well as document applicable control measures.

- The following are not allowable under the Georgia IGP: non-stormwater discharges containing inks, paints, or substances (hazardous or nonhazardous) resulting from an onsite spill, including materials collected in drip pans; washwater from material handling and processing areas; and washwater from drum, tank or container rinsing and cleaning.

Specific State Regulations and Requirements

- Georgia Oil or Hazardous Materials Spills or Releases Act (O.C.G.A. 12-14-1)

- Georgia Hazardous Waste Management Act (O.C.G.A. 12-8-60)

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F3. Marina and Boat Operation and Maintenance

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater and surface waters from marina and boat operation and maintenance activities

APPLICABLE OPERATIONS AND ACTIVITIES

Public and private marina and boating operations including boat and watercraft repair and maintenance.

POLLUTION CONTROL APPROACH

Implement proper housekeeping procedures for general marina operations, boat maintenance and repair, boat cleaning, and bilge & ballast water management

KEY POLLUTION PREVENTION AND CONTROL MEASURES

- Locate marina fueling stations so that spills can be contained within a limited area
- Establish no-wake zones near the shoreline to decrease turbidity
- Move maintenance and repair activities onshore whenever possible
- Use nontoxic cleaning products that do not harm water quality or aquatic life
- Pump bilge water through an oil/water separator before discharging
- Properly dispose of domestic wastewater and ballast water

TARGETED POLLUTANTS

- ☑ **Sediment**
- ☑ **Nutrients**
- ☑ **Bacteria**
- ☑ **Organic Matter**
- ☑ **Oil & Grease**
- ☑ **Heavy Metals**
- ☑ **Toxic Chemicals**
- ☐ **Abnormal pH**
- ☑ **Trash & Debris**
- ☑ **Other:** Detergents and Cleaning Agents

Overview

Marina facilities and boating activities can pose a threat to water quality and the health of aquatic ecosystems when proper housekeeping practices are not implemented. These practices apply to commercial and recreational boating operations as well as the maintenance and repair of boats and other watercraft. Contaminants include fuels and other hydrocarbons, fish cleaning wastes, domestic wastewater, litter, detergents and cleaning chemicals, suspended solids, paint and hull finishing products.

Pollution Prevention and Control Measures

General Marina Practices:

- Locate marina fueling stations so that spills can be contained within a limited area. Have a spill contingency plan and appropriate spill containment equipment on site near the fueling area.
- Implement and maintain automatic shut-off nozzles and valves.
- Encourage the use of fuel/air separators on air vents or tank stems of inboard fuel tanks to signal that the tank is nearly full to reduce the amount of fuel spilled into surface waters during boat fueling.
- Use signage and educational materials to inform marina patrons about the proper disposal and handling of liquid materials, including fuel, bilge water and ballast water.
- Provide an adequate number of covered trash receptacles on docks and other marina areas to discourage littering. Clean out receptacles frequently to prevent spillage.
- Exclude motorized vehicles from areas that contain important shallow-water habitat and establish no-wake zones near the shoreline to decrease turbidity.
- Establish fish cleaning areas and cleaning rules that adequately prevent disposal of wastes to surface waters.
- Clean up any spills on docks or boats immediately.
- Place an adequate stockpile of spill cleanup materials where it will be readily accessible. Clean leaks, drips, and other spills with as little water as possible. Use rags for small spills, a damp mop for general cleanup, and dry absorbent material for larger spills. If absorbent materials are used, sweep up and dispose of promptly.

Boat and Watercraft Repair and Maintenance Activities:

- Keep boat motors well-tuned to prevent fuel and lubricant leaks.
- Minimize the use of solvents. Switch to non-toxic chemicals for maintenance and repair activities, whenever possible.
- Designate covered, impervious areas for hull and engine maintenance and repair. Use ground cloths, tarps and drip pans for capturing drips and spills when undertaking painting, maintenance, repair, and finishing activities.
- Shelter any sandblasting or spray painting activities by hanging wind-blocking tarps to prevent dust and overspray from escaping. Use sanders that have dust containment bags.
- Paint and solvent mixing, fuel mixing, and similar handling of liquids should be performed on shore, and any spill should be cleaned up immediately. Do not wash spills to a stormwater drain, drainage ditch or surface water.

- Vacuum up loose paint chips and paint dust to prevent paint and other chemical substances from entering the water.
- Properly dispose of residual paints, rags, used oil, and other engine fluids.
- Recycle used motor oil, diesel oil, and other engine fluids and parts, whenever possible.
- Work areas should be swept and cleaned as needed. Trash and debris should be collected and disposed of properly. Do not hose down paved areas.

Boat and Watercraft Cleaning:

- Avoid major cleaning jobs over the water.
- If boats are in the water, wash decks and hull with plain water only. Wash the boat hull above the waterline by hand—do not use power scrubbers. Collect and properly dispose of wash water from washing painted boat hulls.
- Conduct other boat cleaning activities on shore in a designated enclosed impervious area. The wash area should be bermed and graded to capture washwater and direct it to a sump or drain line connected to a sanitary sewer, a holding tank or treatment/recycling system.
- Select nontoxic cleaning products that do not harm water quality or aquatic life. Use phosphate-free and biodegradable detergents for hull washing.
- Never dispose of wash water containing soap or other chemicals to a stormwater drain, drainage ditch or surface water.

Bilge and Ballast Water Management:

- Pump bilge water through an oil/water separator before discharging. Store the oil for discharge into storage tanks on shore for treatment. Boats with inboard engines should have oil absorption pads in bilge areas that should be changed annually or when contaminated with oil.
- Avoid the intake of ballast water in shallow water or areas where bottom sediments are suspended, and avoid the intake of ballast water where there is an algal bloom in progress. Use as fine a filter as is practical in the ballast water intake ports to eliminate as many organisms and as much particulate matter as possible.
- Provide a pumpout station to encourage the discharge of sanitary holding tanks ashore. Do not allow discharge of treated or untreated sewage from vessels in marina waters or harbors.

Inspection and Preventive Maintenance Requirements

Table F3-1 Typical Inspection and Preventive Maintenance Activities for Marina and Boat Operation and Maintenance

Activity	Schedule
• Empty covered trash receptacles on docks and other marina areas to discourage littering and prevent spillage.	Daily
• Work areas should be swept and cleaned. Trash and debris should be collected and disposed of properly. Do not hose down work areas.	Daily

Spill Prevention and Response

- Develop Standard Operating Procedures (SOPs) for spill prevention and clean up (see Section 2.1.5).

- Store and maintain appropriate spill cleanup materials on site in a location near the dock(s), fueling stations and marina work areas.

Considerations for Local Government-Owned or Operated Facilities and Operations

- Public marina facilities owned and/or operated by a local government should adopt these pollution prevention and control measures, and develop appropriate Standard Operating Procedures (SOPs) for implementing them.

- All local government boats and watercraft should be operated, maintained, cleaned, and repaired following these protocols and practices.

Considerations for Industrial NPDES (Georgia IGP) Stormwater Pollution Prevention Plans (SWPPPs)

- Facilities under industrial activity Sector Q (Water Transportation Maintenance and Cleaning) are required to have permit coverage under the Georgia IGP.

  Please see Appendix B for the SIC codes that correspond to each industrial activity sector

- All facilities covered under the Georgia IGP are required to identify the location(s) of any activities (including fueling, engine maintenance and repair, vessel maintenance and repair, pressure washing, painting and sanding, and fuel/materials storage) and pollutant(s) that may come in contact with stormwater in their SWPPP, as well as document applicable control measures.

F 4. Swimming Pool and Spa Maintenance

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from routine maintenance and care of swimming pools, spas and fountains

APPLICABLE OPERATIONS AND ACTIVITIES

Swimming pools, spas and fountains maintenance at public, commercial and residential facilities including municipal parks, hotels and motels, and multi-family developments such as apartment and condominium complexes.

POLLUTION CONTROL APPROACH

Properly discharge swimming pool, spa and fountain waters and wastes to avoid chlorinated water and other chemicals from contaminating surface waters

KEY POLLUTION PREVENTION AND CONTROL MEASURES

- Do not discharge pool, spa, or fountain water to the street, stormwater drain, drainage ditch or surface water
- Direct pool, spa and fountain water to a sanitary sewer if it cannot be dechlorinated sufficiently or contains other harmful chemicals
- Dechlorinate pool, spa and fountain water before any discharge to the ground
- Never discharge backwash from filter systems to a stormwater drain, drainage ditch or surface water

TARGETED POLLUTANTS

- [x] **Sediment**
- [x] **Nutrients**
- [x] **Bacteria**
- [ ] **Organic Matter**
- [ ] **Oil & Grease**
- [x] **Heavy Metals**
- [x] **Toxic Chemicals**
- [x] **Abnormal pH**
- [x] **Trash & Debris**
- [x] **Other:** Chlorine

Overview

Routine and required maintenance of public, commercial and multi-family residential swimming pools, spas and fountains has the potential to contaminate stormwater and downstream receiving waters due to the improper drainage of treated water as well as the improper disposal of treatment chemicals, filters and related materials. Pollutants can include chlorine and other sanitizing agents, suspended solids, nutrients, heavy metals and abnormal pH.

Pollution Prevention and Control Measures

- Do not discharge pool, spa, or fountain water to the street, stormwater drain, drainage ditch or surface water.
- All pool, spa and fountain drainage must be directed to a sanitary sewer if it cannot be dechlorinated sufficiently—regardless of the sanitizing agent used (chlorine, bromine, or ozone), or if it contains any other harmful chemicals or algaecides. Contact the local wastewater provider for further guidance concerning general provisions as well as flow rate restrictions and backflow prevention. Higher flow rates may be prohibited by local regulations.
- When draining a pool to the sanitary sewer, prevent backflow by maintaining an "air gap" between the discharge line and sewer line (i.e. do not seal the connection between the hose and sewer line).
- If the only option is to drain pool, spa and fountain water to the ground, the water should be dechlorinated to 0.10 mg/L (ppm) of chlorine or less with a pH between 6.5 and 8.5. All waters should be discharged only to vegetated or permeable areas and done so in a manner to maximize infiltration and prevent erosion and runoff to a stormwater drain, drainage ditch or surface water. Water that has been treated with copper or silver-based algaecides may not be discharged to the ground.
- Drip pans or buckets should be placed beneath drain pipe connections to catch leaks. This is especially necessary if the pool or spa water that has not been dechlorinated.
- Diatomaceous earth, which is commonly used as a filtering agent in pools, may not be discharged to stormwater drainage systems, drainage ditches, surface waters, septic systems, or onto the ground.
- Backwash diatomaceous earth filters onto dirt. Dispose of spent diatomaceous earth in the garbage. Never discharge backwash from filter systems to a stormwater drainage system, drainage ditch or surface water.
- Contact the local wastewater provider for instruction in discharging filter backwash or rinse water to the sanitary sewer.
- Never clean a filter in the street or near a stormwater drain.
- Manage pH and water hardness to minimize corrosion of copper pipes.

Inspection and Preventive Maintenance Requirements

Table F4-1 Typical Inspection and Preventive Maintenance Activities for Swimming Pools and Spas

Activity	Schedule
• Inspect pool, spa or fountain for leaks or overflows	Daily
• Check for leaks or spills during discharge of water to the sanitary sewer	When discharging pool, spa or fountain water

Spill Response and Prevention

- Develop Standard Operating Procedures (SOPs) for spill prevention and clean up (see Section 2.1.5).
- Store and maintain appropriate spill cleanup materials on site in a location near the pool or spa facilities.

Considerations for Local Government-Owned or Operated Facilities and Operations

- Local departments which operate public pool facilities and fountains should have a documented stormwater pollution prevention plan which includes these pollution prevention and control measures, as well as appropriate Standard Operating Procedures (SOPs) for implementing them.

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CHAPTER

4

RESIDENTIAL POLLUTION PREVENTION AND CONTROL MEASURES

Introduction

This chapter contains pollution prevention and control measures applicable to homeowners and residents. These measures target the typical household activities that have the potential to pollute stormwater and receiving waters:

- **R1 – Yard and Lawn Care**
- **R2 – Vehicle Care and Maintenance**
- **R3 – Vehicle Washing and Detailing**
- **R4 – Household Hazardous Materials Use and Disposal**
- **R5 – Garbage and Recyclables**
- **R6 – Outdoor Cleaning and Pressure Washing**
- **R7 – Pet Waste**
- **R8 – Home Improvements, Maintenance and Repairs**
- **R9 – Swimming Pool and Spa Maintenance**
- **R10 – Septic Systems**

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R1. Yard and Lawn Care

TARGETED POLLUTANTS

- [x] Sediment
- [x] Nutrients
- [x] Bacteria
- [x] Organic Matter
- [x] Oil & Grease
- [x] Heavy Metals / Toxic Chemicals
- [ ] Abnormal pH
- [x] Trash & Debris

POLLUTION CONTROL APPROACH

Use proper yard and lawn care practices to prevent sediment, fertilizers, pesticides and vegetation from reaching the stormwater drainage system and nearby waters

Overview

Yard and lawn care and maintenance includes activities such as planting and removing vegetation, lawn mowing, fertilizer and pesticide* application, watering and irrigation, and the removal of leaves, needles and grass clippings.

These activities can result in the contamination of stormwater runoff with sediment, nutrients, organic materials, toxic chemicals, heavy metals, oils and trash which can harm water quality. Leaves, grass clippings and other removed vegetation can also clog stormwater drainage inlets, pipes and drainage ditches, resulting in localized flooding and damage to property and infrastructure.

Always follow the pollution prevention practices and protocols below to be a solution to stormwater pollution!

**This includes insecticides, herbicides, fungicides, and rodenticides*

Pollution Prevention and Control Measures

General Yard and Lawn Care:

- Never blow or dump grass clippings, leaves, needles and other yard waste into the street, stormwater drain, drainage ditch or surface water. When possible, recycle grass clippings and leaves by using a mulching mower. Dispose of yard waste and other collected vegetation by bagging as solid waste for pickup, or bring to a composting facility or permitted landfill.
- Schedule any large planting or landscaping projects that will expose bare soil during dry weather. Use mulch when soils are exposed to prevent soil erosion.
- Incorporate a topsoil mix or composted organic material into the soil to create a transition layer that encourages deeper root systems and drought-resistant plants.

- Choose grass and plants with low nutrient (fertilizer) and water needs. Select native plants whenever possible.

- Do not refuel or clean lawn mowers and other yard tools near a storm drain, drainage ditch or surface water.

Watering and Irrigation:

- Avoid overwatering. Only water when plants and grass show signs of moisture stress. Water vegetation slowly prevent runoff and then only as much as is needed.

- Consider drip irrigation systems for landscaped planting beds and areas rather than traditional sprinkler irrigation.

- Inspect irrigation systems periodically to ensure that the right amount of water is being applied and that excessive runoff is not occurring.

Fertilizer Use:

- Determine the proper fertilizer application for the types of soil and vegetation involved. Soils should be tested for the correct fertilizer formula.

- Follow the manufacturers' recommendations and directions for the proper amounts of fertilizer and application instructions.

- Avoid applying fertilizers in the rain or when heavy rain is forecast.

- Fertilizers should be worked into the soil rather that broadcast and left on the surface.

- Close fertilizer spreaders when going over pavement, bare soil and other non-vegetated surfaces. Sweep up dry fertilizer granules that fall on pavement or other hard surfaces. Do not hose off or use blowers on spilt fertilizer.

Weed and Pest Management:

- Try to use manual or mechanical methods for weed removal rather than applying herbicides. Consider the use of Integrated Pest Management techniques. (www.gaipm.org)

- Use non-toxic and less toxic pesticides and pest control methods that will do the job whenever possible. Avoid use of copper-based pesticides.

- Read and follow the label directions and apply all pesticides as directed. Spot treat only affected areas instead of widespread application.

- Do not apply pesticides when it is raining or when rain is forecast. Pesticides should never be applied directly to surface waters, nor should they be applied within 100 feet of these waters.

- Sweep up any dry pesticides that falls on pavement or other hard surfaces. Do not hose off or use blowers on spilt pesticides.

R2. Vehicle Care and Maintenance

TARGETED POLLUTANTS

- [x] Sediment
- [ ] Nutrients
- [ ] Bacteria
- [ ] Organic Matter
- [x] Oil & Grease
- [x] Heavy Metals / Toxic Chemicals
- [ ] Abnormal pH
- [x] Trash & Debris

POLLUTION CONTROL APPROACH

Use proper practices during vehicle repair and maintenance activities, vehicle storage, and waste handling to prevent contaminants from entering the stormwater drainage system and nearby waters

Overview

Vehicle maintenance and repair activities are potentially significant sources of stormwater pollution, due to the use of harmful materials and wastes involved. Engine repair and service, brake and transmission work, parts cleaning, replacement of vehicle fluids, and outdoor vehicle storage can all contribute a number of contaminants to stormwater runoff such as hydrocarbons (motor oil, gasoline, diesel fuel and greases), heavy metals such as lead, copper and zinc, antifreeze solvents and other toxic chemicals that can harm water quality.

Always follow the pollution prevention practices and protocols below to be a solution to stormwater pollution!

Pollution Prevention and Control Measures

Repair and Maintenance Activities:

- Vehicle maintenance and repair activities should be done in an indoor garage or vehicle maintenance area whenever possible.
- For maintenance work being done outdoors, always use a tarp, ground cloth, sheet of plywood, cardboard or newspaper under the vehicle to capture any leaks or spills. Choose to work on a flat surface where you can easily clean up accidental spills.
- Never work on a vehicle in the street or near a stormwater drain or drainage ditch, or anywhere that contaminants could come into contact with rain or stormwater runoff.
- Always use a funnel when pouring liquids products or wastes to avoid spills.

- Use a drip pan under a vehicle when unclipping hoses, unscrewing filters and removing other parts that might leak.

- Capture vehicle fluids in separate drip pans or containers. Do not mix fluids in the same container as this limits the ability to recycle them.

- Immediately clean up vehicle fluid spills with rags or other absorbent materials such as kitty litter, saw dust or oil absorbent.

- Many brake pads contain copper, which wears off as the pads wear. Use shop cloths to wipe as much brake dust as possible from rotors and drums before using brake cleaner fluid. Do not hose down brake pads, rotors or drums.

Vehicle and Equipment Storage:

- Store idle vehicles in a garage or under a tarp if located outdoors.

- Inspect vehicles that are parked or stored long term for leaks on a regular basis. Use a drip pan underneath leaking vehicles and equipment.

Material and Waste Handling:

- Collect used oil, antifreeze, and other vehicle fluids in separate containers with tight fitting lids and properly recycle at a nearby auto parts store or service station.

- Drain and recycle used oil filters. Poke holes in the filter and place in a funnel over a waste oil container for several hours before recycling.

- Place used, cracked or leaking batteries in a non-leaking secondary container and dispose of properly at recycling or household hazardous waste facilities.

- Place oily and used rags and absorbent pads in a plastic bag and place in the trash.

- Sweep up any used kitty litter, sawdust or oil absorbent used to clean up a fluid spill and dispose in trash.

- Never pour liquid vehicle wastes to floor drains, sinks, or into any other sanitary sewer connection, and do not dispose of liquid wastes to a stormwater drain or drainage ditch.

R3. Vehicle Washing and Detailing

TARGETED POLLUTANTS

- [x] Sediment
- [x] Nutrients
- [ ] Bacteria
- [ ] Organic Matter
- [x] Oil & Grease
- [x] Heavy Metals / Toxic Chemicals
- [ ] Abnormal pH
- [x] Trash & Debris

POLLUTION CONTROL APPROACH

Use proper vehicle washing and detailing methods to prevent washwaters and pollutants from getting into the stormwater drainage system and nearby waters

Overview

Washing and detailing vehicles at your home has the possibility to contaminate stormwater with detergents and detailing chemicals, oils and grease, nutrients, heavy metals, toxic hydrocarbons, and other organic compounds, and suspended solids which can harm water quality.

Always follow the pollution prevention practices and protocols below to be a solution to stormwater pollution!

Pollution Prevention and Control Measures

- Ideally, take your vehicle to a commercial car wash where washwater is recycled and discharged to the sanitary sewer. This will prevent detergents and other contaminants from being washed into a stormwater drain or drainage ditch.
- Never allow washwater with detergents or cleaning agents (including detailing products) to flow into a stormwater drain, drainage ditch or surface water.
- Consider washing your vehicle over a pervious area such as grass or gravel that allows for infiltration of the washwater.
- If washing a vehicle on a paved area such as a driveway, you should try to redirect the washwater to a vegetated or pervious area such as a lawn or landscaping. This can be accomplished by using temporary measures such as a berm, boom or other solid materials such as a piece of lumber placed to direct the flow of water to the pervious area.
- If possible, eliminate or reduce the use hazardous cleaning agents and detailing products. Use the least toxic products to get the job done.

- Use as little water as possible. High-pressure sprayers typically will use less water than a hose.
- Use a hose nozzle with a trigger that automatically shuts off when not being used.
- For spot cleaning, wipe the vehicle with a damp cloth instead of washing it.
- Consider the use of a waterless car wash product. These products are designed to clean and protect your vehicle without using water.
- Never clean or pressure wash the engine or undercarriage of your automobile at home. The oil, grease, and other pollutants from this activity will contaminant the area and pollute stormwater. For this type of cleaning, take the vehicle to a commercial car wash where the washwater will be treated appropriately.

R4. Household Hazardous Materials Use and Disposal

TARGETED POLLUTANTS

- ☐ Sediment
- ☐ Nutrients
- ☐ Bacteria
- ☐ Organic Matter
- ☑ Oil & Grease
- ☑ Heavy Metals / Toxic Chemicals
- ☑ Abnormal pH
- ☑ Trash & Debris

POLLUTION CONTROL APPROACH

Properly use, store and dispose of household hazardous materials and products to reduce the potential for contamination of stormwater

Overview

There are many household materials and products used for a variety of activities that contain hazardous chemicals that can present a danger to your family and pets, as well as lead to stormwater pollution. Hazardous materials and products are those that are labeled as poisonous, corrosive, caustic, flammable, volatile, explosive or have alerts such as *warning*, *caution* or *dangerous* on the label. Hazardous materials and products include such items as:

- Paints, stains and sealers
- Paint strippers and paint thinners
- Motor oil, antifreeze & vehicle fluids
- Cleaning agents and solvents
- Rust removers
- Drain and oven cleaners
- Wood preservatives
- Fertilizers and pesticides
- Lighter fluid
- Gasoline, kerosene and propane
- Batteries
- Mercury thermometers & thermostats
- Fluorescent bulbs
- Pool chemicals

Always follow the pollution prevention practices and protocols below to be a solution to stormwater pollution!

Pollution Prevention and Control Measures

- Purchase non-toxic and non-hazardous, or the least toxic/hazardous, materials and products for a job or activity.
- Always follow the manufacturer's directions and guidelines for use on any household hazardous material or product.
- If an activity involving the use of a hazardous material or product can be moved indoors, then do so. Ensure that proper ventilation can be provided.

- Ground cloths and drip pans should be used under any work outdoors which involves the use of hazardous materials and products.

- Hazardous materials and products should be stored indoors in a covered area such as a garage or shed, or under cover and off the ground outdoors. Always keep hazardous materials and products out of the reach of children.

- Always store hazardous materials and products either in their original product container or in properly labeled and sealed containers. Never store hazardous materials in food or beverage containers which could be misinterpreted by a child as something to eat or drink.

- Check hazardous material and product containers frequently for signs of leakage. If a container is leaking or has the potential to leak soon, place it in a secondary container to avoid the need for cleanup.

- Keep appropriate cleanup materials on hand for cleaning up spills. Rags can clean up many liquids, while kitty litter is good for many oil-based spills.

- Never pour hazardous materials or products outdoors on the ground, into a stormwater drain or drainage ditch, into surface waters—or into sinks, toilets or drains.

- Dispose of hazardous materials and products, and their containers properly. Contact your local government for information on proper disposal methods and possible household hazardous waste collection events.

R5. Garbage and Recyclables

TARGETED POLLUTANTS

- [x] Sediment
- [x] Nutrients
- [x] Bacteria
- [x] Organic Matter
- [x] Oil & Grease
- [ ] Heavy Metals / Toxic Chemicals
- [ ] Abnormal pH
- [x] Trash & Debris

POLLUTION CONTROL APPROACH

Prevent and reduce the discharge of pollutants to stormwater by reducing exposure of garbage and recyclables to rain and stormwater runoff

Overview

Improper handling and storage of garbage and recyclables from your home can lead to polluted stormwater runoff. Garbage cans, dumpsters and recycling bins without lids, leaking trash containers and bags, scrap piles and other refuse left outside can contaminate stormwater and surface waters with nutrients, suspended solids, bacteria, oil and greases, toxic compounds, heavy metals and other pollutants, as well as general trash and debris.

Always follow the pollution prevention practices and protocols below to be a solution to stormwater pollution!

Pollution Prevention and Control Measures

- Dispose of garbage and recyclables in a storage container such as a garbage can, dumpster or bin with a leak-proof lid or cover. Ensure that container lids and covers are always closed when not in use. Store waste containers in a covered area such as a garage or carport if possible.
- Do not dump liquids directly into a garbage can or dumpster.
- Fats, oils and grease should be in a sealed container before being placed into a garbage can or dumpster.
- Certain wastes such as hazardous wastes, appliances, fluorescent lamps, pesticides, etc. should not be disposed of in solid waste containers—contact your waste hauler or local government for information on proper disposal of these materials
- Avoid overfilling garbage, recycling and other waste containers—arrange for regular waste collection before containers overflow.

- Do not let garbage accumulate at your residence. Garbage and wastes outside of covered containers can leak stormwater pollutants, and can also attract rodents, insects and wild animals.

- Avoid placing garbage bags directly on the ground, particularly if a bag has a leak.

- Waste containers should be kept in good condition without corrosion or leaky seams. Repair or replace if they are deteriorating to the point where leakage is occurring.

- Any waste stored outside should at a minimum be covered with a tarp.

R6. Outdoor Cleaning and Pressure Washing

TARGETED POLLUTANTS

- [x] Sediment
- [x] Nutrients
- [ ] Bacteria
- [ ] Organic Matter
- [x] Oil & Grease
- [x] Heavy Metals / Toxic Chemicals
- [ ] Abnormal pH
- [x] Trash & Debris

POLLUTION CONTROL APPROACH

Use various methods to prevent contaminated washwater and pollutants from reaching or being discharged to the stormwater drainage system

Overview

Outdoor cleaning and pressure washing activities around the home, including window washing, and the pressure washing of siding, decks, driveways and sidewalks, can impact water quality if washwater is allowed to discharge to the stormwater drainage system, a drainage ditch or a surface water. Washwater can be contaminated with detergents and cleaning agents, suspended solids, organic matter, trash, oil, heavy metals and numerous other pollutants.

Always follow the pollution prevention practices and protocols below to be a solution to stormwater pollution!

Pollution Prevention and Control Measures

- Instead of pressure washing, consider sweeping or other dry methods.
- Clean up as much as possible using dry cleaning methods such as sweeping before pressure washing driveways and sidewalks. Use absorbents on oil spots before washing.
- Consider pressure washing only using water; when using detergents and cleaning agents, use the least toxic product needed to get the job done.
- Minimize water use by using high pressure, low volume nozzles; this reduces the volume of wastewater that needs to be properly disposed.
- If washing a paved area such as a driveway, try to redirect the washwater to a vegetated or pervious area such as a lawn or landscaping. This can be accomplished by using temporary berm, boom or other solid materials such as a piece of lumber placed to direct the flow of water to the pervious area.

- Try not to undertake outdoor cleaning activities and pressure washing when raining or when rain is eminent.

- Never dispose any washwater, detergents or cleaning products onto pavement or the ground, into a stormwater drain drainage ditch or to surface water.

R7. Pet Waste

TARGETED POLLUTANTS

- [ ] Sediment
- [x] Nutrients
- [x] Bacteria
- [x] Organic Matter
- [ ] Oil & Grease
- [ ] Heavy Metals / Toxic Chemicals
- [ ] Abnormal pH
- [ ] Trash & Debris

POLLUTION CONTROL APPROACH

Pick up and properly dispose of pet waste to prevent it from contaminating stormwater and surface waters

Overview

Pet waste left on sidewalks, streets, yards or other open areas can be washed away and carried by rainwater into storm drains and drainage ditches which flow to nearby streams, rivers, lakes and coastal waters. As it decays, it uses up dissolved oxygen and releases compounds that are harmful to fish and other aquatic life. Pet waste also contains nutrients that can cause excessive algae growth in a pond or lake, upsetting the natural balance. Most importantly, pet waste contains harmful bacteria such as E. Coli and fecal coliform, some of which can cause disease in humans and make water dangerous for swimming and other recreation, lead to beach closures and affect shellfish harvesting areas.

Always follow the pollution prevention practices and protocols below to be a solution to stormwater pollution!

Pollution Prevention and Control Measures

- Pick up pet waste in your yard or on a walk with a plastic bag or pooper scooper.
- Dispose of the pet waste using one of the following methods:
  - Put pet waste in your regular garbage can or dumpster—ensure that it is in a securely tied or closed plastic bag.
  - Bury pet waste at least one foot deep and cover with soil in your yard or garden. Avoid burying in food-growing areas.
  - If your home is on a sanitary sewer, flush pet waste down the toilet, but don't flush plastic bags or cat litter. Septic systems are not designed to accommodate the high pollutant load in pet waste and can cause premature failure.

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R8. Home Improvements, Maintenance and Repairs

TARGETED POLLUTANTS

- [x] Sediment
- [ ] Nutrients
- [ ] Bacteria
- [ ] Organic Matter
- [x] Oil & Grease
- [x] Heavy Metals / Toxic Chemicals
- [x] Abnormal pH
- [x] Trash & Debris

POLLUTION CONTROL APPROACH

Reduce the potential for contamination of stormwater and pollutants from reaching the storm drainage system during home improvement, maintenance and repair activities

Overview

There are a variety of home improvement, maintenance and repair activities routinely carried out by homeowners that have the potential to adversely affect water quality in streams, rivers, lakes and coastal waters. Painting, outdoor repairs, remodeling and renovations, and pavement/concrete maintenance are a few examples of activities that can result in pollutants being discharged to stormwater drainage systems and surface water. Pollutants can include toxic chemicals, suspended solids, organic compounds, detergents, solvents, and abnormal pH which can harm water quality.

Always follow the pollution prevention practices and protocols below to be a solution to stormwater pollution!

Pollution Prevention and Control Measures

- Store all home improvement/repair materials indoors, or under a secure waterproof tarp or cover, wherever possible.
- Store treated lumber, paints, solvents, and other similar materials in a covered area (if left outdoors) and raise materials off the ground by using pallets or similar methods to avoid contact with stormwater runoff.
- Use ground cloths, tarps or plastic sheeting in locations where any work is taking place outdoors and where paints or stains are being applied.
- Mix and pour paints, stains, thinners solvents and other liquids being used over drip trays, and indoors if possible.
- Do not dispose of washwater from cleaning brushes, paint rollers, paint buckets or containers to a stormwater drain, drainage ditch, surface water or paved area.

- Sweep outdoor work areas regularly. Do not hose down or wash off debris and pollutants to a stormwater drain, drainage ditch or surface water.

- Wipe up spills with rags and other absorbent materials immediately.

- Do not dump any solid or liquid waste materials onto the ground or pavement, down a stormwater drain, or into a drainage ditch or surface water.

- Concrete and cement washwater has a pH (measure of acidity/alkalinity) that is toxic to aquatic life. Do not allow water from mixing or washing concrete or cement to discharge into to a stormwater drain, drainage ditch, surface water or paved area. Direct the washwater instead to vegetated areas or dig a hole where the washwater can settle and infiltrate slowly into the ground.

- Remove debris and trash in a timely fashion. Properly dispose of home improvement and renovation debris and waste materials.
    - Empty containers of latex paint can be left open to dry out, or mixed with kitty litter, and disposed of in the garbage
    - Oil-based paint, paint thinners, solvents and other hazardous chemicals must be disposed of as household hazardous waste

- Recycle residual home improvement/repair materials and supplies, whenever possible.

R9. Swimming Pool & Spa Maintenance

TARGETED POLLUTANTS

- [x] Sediment
- [x] Nutrients
- [x] Bacteria
- [ ] Organic Matter
- [ ] Oil & Grease
- [x] Heavy Metals / Toxic Chemicals
- [x] Abnormal pH
- [ ] Trash & Debris

POLLUTION CONTROL APPROACH

Properly discharge swimming pool and spa water and wastes to avoid chlorinated water and other chemicals from contaminating surface waters

Overview

Improper drainage or discharge of pool and spa water to can lead to nutrients, suspended solids, chlorine, abnormal pH, and other chemicals entering our streams, rivers, and lakes. Chemicals used in pool and spa maintenance can contaminate stormwater and surface water if they are not stored, used, and disposed of correctly.

Always follow the pollution prevention practices and protocols below to be a solution to stormwater pollution!

Pollution Prevention and Control Measures

- Never discharge pool or spa water to the street, stormwater drain, drainage ditch or surface water.
- All pool and spa drainage must be drained to a sanitary sewer or collected by a pool maintenance company if it cannot be dechlorinated sufficiently or contains any other harmful chemicals or algaecides. Notify your wastewater service provider to ensure they are aware of the volume of discharge and potential effects of chlorine levels. Never discharge pool or spa water to a septic system.
- When draining a pool to the sanitary sewer, prevent backflow by maintaining an “air gap” between the discharge line and sewer line (i.e. do not seal the connection between the hose and sewer line).
- If the only option is to drain pool, spa and fountain water to the ground, the water should be dechlorinated to 0.1 mg/L (ppm) of chlorine or less with a pH between 6.5 and 8.5. Contact a pool chemical supplier to obtain the neutralizing chemicals you will need. Letting it “sit” for a period of time may reduce chlorine levels without the need for chemicals.

- All waters should be discharged only to vegetated or permeable areas and done so in a manner to maximize infiltration and prevent erosion and runoff to a stormwater drain, drainage ditch or surface water.

- Water that has been treated with copper or silver-based algaecides may not be discharged to the ground.

- Drip pans or buckets should be placed beneath drain pipe connections to catch leaks. This is especially necessary if the pool or spa water that has not been dechlorinated.

- Pool chemicals should be stored out indoors, in a covered area such as a garage or shed, or under cover and off the ground outdoors. Always keep pool chemicals and cleaning products out of the reach of children.

- Never pour pool chemicals or products outdoors on the ground, into a stormwater drain or drainage ditch, into surface waters—or into sinks, toilets or drains.

- Diatomaceous earth, which is commonly used as a filtering agent in pools, may not be discharged to stormwater drainage systems, drainage ditches, surface waters, septic systems, or onto the ground. Dry it out as much as possible, place in a plastic bag and dispose of in the trash.

- Consider using a professional pool maintenance company to service your pool or spa.

R10. Septic Systems

TARGETED POLLUTANTS

- [x] Sediment
- [x] Nutrients
- [x] Bacteria
- [x] Organic Matter
- [ ] Oil & Grease
- [ ] Heavy Metals / Toxic Chemicals
- [ ] Abnormal pH
- [ ] Trash & Debris

POLLUTION CONTROL APPROACH

Proper use of household septic systems, including regular inspection and maintenance, to ensure that the system functions properly and reduce the potential for failure

Overview

A potential source of water pollution is poorly functioning and failing septic systems. Contaminated water from a septic system can come into contact with and pollute groundwater and stormwater and eventually reach streams, rivers, lakes and coastal waters. Septic system discharges can use up dissolved oxygen in water and release compounds that are harmful to fish and other aquatic life. The contaminated water also contains nutrients that can cause excessive algae growth in a pond or lake, as well as bacteria and other pathogens which can make water dangerous for swimming and other recreation, lead to beach closures and affect shellfish harvesting areas.

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Always follow the pollution prevention practices and protocols below to be a solution to stormwater pollution!

Pollution Prevention and Control Measures

- Flush only human waste and toilet paper into toilets connected to a septic system.
- Do not use your toilet as a trash can by dumping non-biodegradable items (including baby wipes, diapers, sanitary napkins, tampons, condoms, kitty litter, cigarette butts, coffee grounds and fats, oils and grease).
- Never dispose of household hazardous materials or chemicals down a sink, toilet or drain connected to a septic system.
- Reduce and spread water use out over the day. Limit water-using appliances to one at a time and practice water conservation in your home. Septic systems are limited in their ability to handle large increases in the amount of water discharged to them. Excess flow can cause turbulence in the tank flushing accumulated solids into the drain field, which can impair its ability to function long-term.

- Fix water leaks to avoid flooding your septic tank. Leaking toilets are a major cause of septic system failure. One simple way to test for toilet leaks is to drop food coloring in the tank—if you see color in the bowl, then you have a leak.

- Eliminate or restrict the use of your garbage disposal. Use of garbage disposals can significantly increase the amount of solids and sludge in the septic tank. Instead, dispose of food wastes in the trash.

- Septic systems require regular inspection and maintenance. Have your septic system inspected at least once every three to five years to measure accumulated sludge and check for signs of system failure. Pumping of septic tanks should be performed as needed based on sludge levels. Pumping frequency can vary depending on tank size, household size and garbage disposal use.

- Failure to remove sludge periodically will result in reduced settling capacity and eventual overloading of the drain field, which can be difficult and expensive to remedy and may require a complete replacement of the septic system.

- Contact your local wastewater (sanitary sewer) provider to see if your home can be connected to the sanitary sewer system.

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APPENDIX

A

WORKSHEETS FOR POLLUTION PREVENTION PLANNING

This appendix contains the following worksheets for pollution prevention planning:

- **Worksheet 1 – Activities Assessment Checklist**
- **Worksheet 2a – Material Inventory (Part 1)**
- **Worksheet 2b – Material Inventory (Part 2)**

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WORKSHEET 1: ACTIVITIES ASSESSMENT CHECKLIST

Facility Name / Location: _____

CATEGORY	ACTIVITY
A. Materials Storage	❑ Storage of Bulk Materials ❑ Storage of Liquid Materials ❑ Storage of Scrap and Recyclable Materials
B. Materials Transfer and Disposal	❑ Loading and Unloading Operations ❑ Fueling Operations ❑ Solid Waste Handling and Transfer ❑ Hazardous Material / Waste Management
C. Production and Construction	❑ Outdoor Manufacturing Operations ❑ Outdoor Painting and Finishing ❑ Construction, Remodeling, Repair & Demolition ❑ Concrete and Asphalt Production & Installation ❑ Chemical Application
D. Washing and Cleaning	❑ Interior Washing and Cleaning Activities ❑ Pressure Washing and Surface Cleaning ❑ Tool and Equipment Cleaning ❑ Vehicle and Heavy Equipment Washing & Cleaning
E. Facilities Maintenance	❑ Landscaping, Lawn Care & Vegetation Management ❑ Street and Highway Repair & Maintenance ❑ Street and Parking Area Sweeping & Cleaning
F. Other Activities	❑ Restaurants and Food Service ❑ Vehicle and Heavy Equipment Repair & Maintenance ❑ Marina and Boat Operation & Maintenance ❑ Swimming Pool and Spa Maintenance

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WORKSHEET 2a: MATERIAL INVENTORY - Part 1	**Facility Name / Location:** **Date:**

INSTRUCTIONS: List all of the materials used, stored or produced on site. Assess and evaluate these materials for their potential to contribute pollutants to stormwater runoff. Complete Worksheet 2b if the material has been exposed in the last 3 years.

Material	Purpose / Location	Quantity (units)		Quantity Exposed	Likelihood of contact with stormwater	Past Spill or Leak?
		Used	Produced			
						❑Yes ❑No
						❑Yes ❑No
						❑Yes ❑No
						❑Yes ❑No
						❑Yes ❑No
						❑Yes ❑No
						❑Yes ❑No
						❑Yes ❑No
						❑Yes ❑No
						❑Yes ❑No

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WORKSHEET 2b: MATERIAL INVENTORY - Part 2	**Facility Name / Location:** **Date:**

INSTRUCTIONS: Based on your material inventory from Worksheet 2a, describe the materials that were exposed to stormwater during the past three years and/or are currently exposed.

Material	Period of Exposure	Quantity Exposed (units)	Location on Site Map	Method of Material Storage	Description of Materials Management Practices

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APPENDIX

B

FACILITIES AND ACTIVITIES COVERED UNDER THE GEORGIA IGP

This Appendix contains the regulated industrial facilities and activities that are covered under the Georgia NPDES Industrial Stormwater General Permit (Georgia IGP):

- Appendix B1 lists the facilities and activities required to have coverage under the Georgia IGP by industrial sector and provides the relevant SIC or Industrial Activity codes for each sector.

- Appendix B2 lists the facilities and activities required to have coverage under the Georgia IGP by ascending SIC codes and provides the associated subsector for each SIC code.

A facility can determine its SIC code by using the SIC manual found on the U.S. Department of Labor's Occupational Safety and Health Administration's (OSHA) website[1].

[1] A complete list of SIC Codes can be found at: **http://www.osha.gov/pls/imis/sic_manual.html** Conversions to and from the newer North American Industry Classification System" (NAICS)) can be obtained from the internet at: http://www.census.gov/eos/www/naics/concordances/concordances.html or in paper form from various locations in the document titled *Handbook of Standard Industrial Classifications*, Office of Management and Budget, 1987.

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APPENDIX B1 – FACILITIES AND ACTIVITIES COVERED BY THE GEORGIA IGP BY INDUSTRIAL SECTOR

Permit eligibility under the Georgia IGP is limited to discharges from facilities in the "sectors" of industrial activity summarized in Table B-1 below. These sector descriptions are based on SIC Codes and Industrial Activity Codes. References to "sectors" in the Georgia IGP refer to these groupings.

Note that a facility may be subject to more than one sector or subsector.

Table B-1. Facilities and Activities Covered by the Georgia IGP by Industrial Sector		
Subsector	**SIC Code or Activity Code**	**Activity Represented**
SECTOR A: TIMBER PRODUCTS		
A1	2421	General Sawmills and Planing Mills
A2	2491	Wood Preserving
A3	2411	Log Storage and Handling
A4	2426	Hardwood Dimension and Flooring Mills
	2429	Special Product Sawmills, Not Elsewhere Classified
	2431-2439 (except 2434)	Millwork, Veneer, Plywood, and Structural Wood (see Sector W)
	2448	Wood Pallets and Skids
	2449	Wood Containers, Not Elsewhere Classified
	2451, 2452	Wood Buildings and Mobile Homes
	2493	Reconstituted Wood Products
	2499	Wood Products, Not Elsewhere Classified
A5	2441	Nailed and Lock Corner Wood Boxes and Shook
SECTOR B: PAPER AND ALLIED PRODUCTS		
B1	2631	Paperboard Mills
B2	2611	Pulp Mills
	2621	Paper Mills
	2652-2657	Paperboard Containers and Boxes
	2671-2679	Converted Paper and Paperboard Products, Except Containers and Boxes
SECTOR C: CHEMICALS AND ALLIED PRODUCTS		
C1	2873-2879	Agricultural Chemicals
C2	2812-2819	Industrial Inorganic Chemicals
C3	2841-2844	Soaps, Detergents, and Cleaning Preparations; Perfumes, Cosmetics, and Other Toilet Preparations
C4	2821-2824	Plastics Materials and Synthetic Resins, Synthetic Rubber, Cellulosic and Other Manmade Fibers Except Glass

Table B-1. Facilities and Activities Covered by the Georgia IGP by Industrial Sector		
Subsector	**SIC Code or Activity Code**	**Activity Represented**
C5	2833-2836	Medicinal Chemicals and Botanical Products; Pharmaceutical Preparations; in vitro and in vivo Diagnostic Substances; and Biological Products, Except Diagnostic Substances
	2851	Paints, Varnishes, Lacquers, Enamels, and Allied Products
	2861-2869	Industrial Organic Chemicals
	2891-2899	Miscellaneous Chemical Products
	3952 (limited to list of inks and paints)	Inks and Paints, Including China Painting Enamels, India Ink, Drawing Ink, Platinum Paints for Burnt Wood or Leather Work, Paints for China Painting, Artist's Paints and Watercolors
	2911	Petroleum Refining
SECTOR D: ASPHALT PAVING AND ROOFING MATERIALS AND LUBRICANTS		
D1	2951, 2952	Asphalt Paving and Roofing Materials
D2	2992, 2999	Miscellaneous Products of Petroleum and Coal
SECTOR E: GLASS, CLAY, CEMENT, CONCRETE, AND GYPSUM PRODUCTS		
E1	3251-3259	Structural Clay Products
	3261-3269	Pottery and Related Products
E2	3271-3274	Concrete and Plaster Products
E3	3211	Flat Glass
	3221, 3229	Glass and Glassware, Pressed or Blown
	3231	Glass Products Made of Purchased Glass
	3241	Hydraulic Cement
	3275	Gypsum
	3281	Cut Stone and Stone Products
	3291-3299	Abrasive, Asbestos, and Miscellaneous Nonmetallic Mineral Products
SECTOR F: PRIMARY METALS		
F1	3312-3317	Steel Works, Blast Furnaces, and Rolling and Finishing Mills
F2	3321-3325	Iron and Steel Foundries
F3	3351-3357	Rolling, Drawing, and Extruding of Nonferrous Metals
F4	3363-3369	Nonferrous Foundries (Castings)
F5	3331-3339	Primary Smelting and Refining of Nonferrous Metals
	3341	Secondary Smelting and Refining of Nonferrous Metals
	3398, 3399	Miscellaneous Primary Metal Products
SECTOR G: TRANSPORTATION EQUIPMENT, INDUSTRIAL OR COMMERCIAL MACHINERY		
G1	3511-3599 (except 3571-3579)	Industrial and Commercial Machinery, Except Computer and Office Equipment (see Sector H)
	3711-3799 (except 3731, 3732)	Transportation Equipment Except Ship and Boat Building and Repairing (see Sector R)

Table B-1. Facilities and Activities Covered by the Georgia IGP by Industrial Sector		
Subsector	**SIC Code or Activity Code**	**Activity Represented**
SECTOR H: ELECTRONIC, ELECTRICAL, PHOTOGRAPHIC, AND OPTICAL GOODS		
H1	3571-3579	Computer and Office Equipment
	3612-3699	Electronic and Electrical Equipment and Components, Except Computer Equipment
	3812-3873	Measuring, Analyzing, and Controlling Instruments; Photographic and Optical Goods, Watches, and Clocks
SECTOR I: OIL AND GAS EXTRACTION		
I1	1311	Crude Petroleum and Natural Gas
	1321	Natural Gas Liquids
	1381-1389	Oil and Gas Field Services
SECTOR J: MINING AND DRESSING		
J1	1011, 1021, 1031, 1041, 1044, 1061, 1081, 1094, 1099, 1411, 1422-1429, 1442, 1446, 1459, 1474-1479, 1481, 1499	Mining
J2	1455	Kaolin and Clay Ball Mining
SECTOR K: HAZARDOUS WASTE TREATMENT, STORAGE, OR DISPOSAL FACILITIES		
K1	HZ	Hazardous Waste Treatment, Storage, or Disposal Facilities, including those that are operating under interim status or a permit under Subtitle C of RCRA
SECTOR L: LANDFILLS, LAND APPLICATION SITES, AND OPEN DUMPS		
L1	LF	All Landfills, Land Application Sites and Open Dumps
L2	LF	All Landfills, Land Application Sites and Open Dumps, except Municipal Solid Waste Landfill (MSWLF) Areas Closed in Accordance with 40 CFR 258.60
SECTOR M: AUTOMOBILE SALVAGE YARDS		
M1	5015	Automobile Salvage Yards
SECTOR N: SCRAP RECYCLING FACILITIES		
N1	5093	Scrap Recycling Facilities and Liquid Recycling Facilities
N2	5093	Source-separated Recycling Facility
SECTOR O: STEAM ELECTRIC GENERATING FACILITIES		
O1	SE	Steam Electric Generating Facilities, including coal handling sites

Table B-1. Facilities and Activities Covered by the Georgia IGP by Industrial Sector		
Subsector	**SIC Code or Activity Code**	**Activity Represented**
SECTOR P: LAND TRANSPORTATION AND WAREHOUSING		
P1	4011, 4013	Railroad Transportation
	4111-4173	Local and Highway Passenger Transportation
	4212-4231	Motor Freight Transportation and Warehousing
	4311	United States Postal Service
	5171	Petroleum Bulk Stations and Terminals
SECTOR Q: WATER TRANSPORTATION: MAINTENANCE/CLEANING		
Q1	4412-4499	Water Transportation Facilities
SECTOR R: SHIP AND BOAT BUILDING AND REPAIRING YARDS		
R1	3731, 3732	Ship and Boat Building or Repairing Yards
SECTOR S: AIR TRANSPORTATION FACILITIES		
S1	4512-4581	Air Transportation Facilities
SECTOR T: TREATMENT WORKS		
T1	TW	Treatment Works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that is located within the confines of the facility, with a design flow of 1.0 mgd or more, or required to have an approved pretreatment program under 40 CFR Part 403. Not included are farm lands, domestic gardens or lands used for sludge management where sludge is beneficially reused and which are not physically located in the confines of the facility, or areas that are in compliance with section 405 of the CWA
SECTOR U: FOOD AND KINDRED PRODUCTS		
U1	2041-2048	Grain Mill Products
U2	2074-2079	Fats and Oils Products
U3	2011-2015	Meat Products
U4	2021-2026	Dairy Products
	2032-2038	Canned, Frozen, and Preserved Fruits, Vegetables, and Food Specialties
	2051-2053	Bakery Products
	2061-2068	Sugar and Confectionery Products
	2082-2087	Beverages
	2091-2099	Miscellaneous Food Preparations and Kindred Products
	2111-2141	Tobacco Products

Table B-1. Facilities and Activities Covered by the Georgia IGP by Industrial Sector		
Subsector	**SIC Code or Activity Code**	**Activity Represented**
SECTOR V: TEXTILE MILLS, APPAREL, AND OTHER FABRIC PRODUCT MANUFACTURING; LEATHER AND LEATHER PRODUCTS		
V1	2211-2299	Textile Mill Products
	2311-2399	Apparel and Other Finished Products Made from Fabrics and Similar Materials
	3131-3199	Leather and Leather Products (note: see Sector Z1 for Leather Tanning and Finishing)
SECTOR W: FURNITURE AND FIXTURES		
W1	2434	Wood Kitchen Cabinets
	2511-2599	Furniture and Fixtures
SECTOR X: PRINTING AND PUBLISHING		
X1	2711-2796	Printing, Publishing, and Allied Industries
SECTOR Y: RUBBER, MISCELLANEOUS PLASTIC PRODUCTS, AND MISCELLANEOUS MANUFACTURING INDUSTRIES		
Y1	3011	Tires and Inner Tubes
	3021	Rubber and Plastics Footwear
	3052, 3053	Gaskets, Packing and Sealing Devices, and Rubber and Plastic Hoses and Belting
	3061, 3069	Fabricated Rubber Products, Not Elsewhere Classified
Y2	3081-3089	Miscellaneous Plastics Products
	3931	Musical Instruments
	3942-3949	Dolls, Toys, Games, and Sporting and Athletic Goods
	3951-3955 (except 3952 – see Sector C)	Pens, Pencils, and Other Artists' Materials
	3961, 3965	Costume Jewelry, Costume Novelties, Buttons, and Miscellaneous Notions, Except Precious Metal
	3991-3999	Miscellaneous Manufacturing Industries
SECTOR Z: LEATHER TANNING AND FINISHING		
Z1	3111 (also see Sector V)	Leather Tanning and Finishing
SECTOR AA: FABRICATED METAL PRODUCTS		
AA1	3411-3499 (except 3479)	Fabricated Metal Products, Except Machinery and Transportation Equipment, and Coating, Engraving, and Allied Services.
	3911-3915	Jewelry, Silverware, and Plated Ware
AA2	3479	Fabricated Metal Coating and Engraving

Table B-1. Facilities and Activities Covered by the Georgia IGP by Industrial Sector		
Subsector	**SIC Code or Activity Code**	**Activity Represented**
SECTOR AB: NON-CLASSIFIED FACILITIES		
AB1	Other storm water discharges designated by the Director as needing a permit (see 40 CFR 122.26(a)(9)(i)(C) and (D)) or any facility discharging storm water associated with industrial activity not described by any of Sectors A-AA. NOTE: Facilities may not elect to be covered under Sector AB. Only the Director may assign a facility to Sector AB.	

APPENDIX B2 – FACILITIES AND ACTIVITIES COVERED BY THE GEORGIA IGP BY SIC CODE

Table B-2 below lists the industrial facilities and activities eligible for coverage under the Georgia IGP by SIC Codes in ascending order. The relevant industrial subsector referenced in the Georgia IGP is provided for each SIC Code.

Note that a facility may be subject to more than one SIC Code.
nec: not elsewhere classified

Table B-2. Facilities and Activities Covered by the Georgia IGP by SIC Code		
SIC Code or Activity Code	**Subsector**	**Activity Represented**
10: METAL MINING		
1011	J1: Mining and Dressing	Iron Ores
1021		Copper Ores
1031		Lead and Zinc Ores
1041		Gold Ores
1044		Silver Ores
1061		Ferroalloy Ores, Except Vanadium
1081		Metal Mining Services
1094		Uranium Radium Vanadium Ores
1099		Metal Ores, nec
13: OIL AND GAS EXTRACTION		
1311	I1: Oil and Gas Extraction	Crude Petroleum and Natural Gas
1321		Natural Gas Liquids
1381		Drilling Oil and Gas Wells
1382		Oil and Gas Exploration Services
1389		Oil and Gas Field Services, nec
14: NONMETALLIC MINERALS, EXCEPT FUELS		
1411	J1: Mining and Dressing	Dimension Stone
1422		Crushed and Broken Limestone
1423		Crushed and Broken Granite
1429		Crushed and Broken Stone, nec
1442		Construction Sand and Gravel
1446		Industrial Sand
1455	J2: Mining and Dressing	Kaolin and Ball Clay
1459	J1: Mining and Dressing	Clay and Related Materials, nec
1474		Potash, Soda and Borate Minerals
1475		Phosphate Rock
1479		Chemical and Fertilizer Mining, nec

Table B-2. Facilities and Activities Covered by the Georgia IGP by SIC Code		
SIC Code or Activity Code	**Subsector**	**Activity Represented**
1481	J1: Mining and Dressing	Nonmetallic Minerals Services
1499		Miscellaneous Nonmetallic Minerals
20: FOOD and KINDRED PRODUCTS		
2011	U3: Food and Kindred Products	Meat Packing Plants
2013		Sausages and Other Prepared Meats
2015		Poultry Slaughtering and Processing
2021	U4: Food and Kindred Products	Creamer Butter
2022		Cheese, Natural and Processed
2023		Dry, Condensed and Evaporated Products
2024		Ice Cream and Frozen Desserts
2026		Fluid Milk
2032		Canned Specialties
2033		Canned Fruits and Vegetables
2034		Dehydrated Fruits, Vegetables and Soups
2035		Pickles, Sauces and Salad Dressings
2037		Frozen Fruits and Vegetables
2038		Frozen Specialties, nec
2041	U1: Food and Kindred Products	Flour and Other Grain Mill Products
2043		Cereal Breakfast Foods
2044		Rice Milling
2045		Prepared Flour Mixes and Doughs
2046		Wet Corn Milling
2047		Dog and Cat Food
2048		Prepared Feeds, nec
2051	U4: Food and Kindred Products	Bread, Cake and Related Products
2052		Cookies and Crackers
2053		Frozen Bakery Products, Except Bread
2061		Raw Cane Sugar
2062		Cane Sugar Refining
2063		Beet Sugar
2064		Candy and Other Confectionery Products
2066		Chocolate and Cocoa Products
2067		Chewing Gum
2068		Salted and Roasted Nuts and Seeds
2074	U2: Food and Kindred Products	Cottonseed Oil Mills
2075		Soybean Oil Mills
2076		Vegetable Oil Mills, nec
2077		Animal and Marine Fats and Oils

Table B-2. Facilities and Activities Covered by the Georgia IGP by SIC Code		
SIC Code or Activity Code	**Subsector**	**Activity Represented**
2079	U2: Food and Kindred Products	Edible Fats and Oils, nec
2082	U4: Food and Kindred Products	Malt Beverages
2083		Malt
2084		Wines, Brandy and Brandy Spirits
2085		Distilled and Blended Liquors
2086		Bottled and Canned Soft Drinks
2087		Flavoring Extracts and Syrups, nec
2091		Canned and Cured Fish and Seafoods
2092		Fresh or Frozen Prepared Fish
2095		Roasted Coffee
2096		Potato Chips and Similar Snacks
2097		Manufactured Ice
2098		Macaroni and Spaghetti
2099		Food Preparations, nec
2111		Cigarettes
2121		Cigars
2131		Chewing and Smoking Tobacco
2141		Tobacco Stemming and Redrying
22: TEXTILE MILL PRODUCTS		
2211	V1: Textile Mills, Apparel, and Other Fabric Product Manufacturing; Leather and Leather Products	Broadwoven Fabric Mills, Cotton
2221		Broadwoven Fabric Mills, Manmade
2231		Broadwoven Fabric Mills, Wool
2241		Narrow Fabric Mills
2251		Women's Hosiery, Except Socks
2252		Hosiery, nec
2253		Knit Outerwear Mills
2254		Knit Underwear Mills
2257		Weft Knit Fabric Mills
2258		Lace and Warp Knit Fabric Mills
2259		Knitting Mills, nec
2261		Finishing Plants, Cotton
2262		Finishing Plants, Manmade
2269		Finishing Plants, nec
2273		Carpets and Rugs
2281		Yarn Spinning Mills
2282		Throwing and Winding Mills

Table B-2. Facilities and Activities Covered by the Georgia IGP by SIC Code		
SIC Code or Activity Code	**Subsector**	**Activity Represented**
2284	V1: Textile Mills, Apparel, and Other Fabric Product Manufacturing; Leather and Leather Prod.	Thread Mills
2295		Coated Fabrics, Not Rubberized
2296		Tire Cord and Fabrics
2297		Nonwoven Fabrics
2298		Cordage and Twine
2299		Textile Goods, nec
23: APPAREL AND OTHER TEXTILE PRODUCTS		
2311	V1: Textile Mills, Apparel, and Other Fabric Product Manufacturing; Leather and Leather Products	Men's and Boys' Suits and Coats
2321		Men's and Boys' Shirts
2322		Men's and Boys' Underwear and Nightwear
2323		Men's and Boys' Neckwear
2325		Men's and Boys' Trousers and Slacks
2326		Men's and Boys' Work Clothing
2329		Men's and Boys' Clothing, nec
2331		Women's and Misses' Blouses and Shirts
2335		Women's and Misses' and Junior's Dresses
2337		Women's and Misses' Suits and Coats
2339		Women's and Misses' Outerwear, nec
2341		Women's and Children's Underwear
2342		Bras, Girdles and Allied Garments
2353		Hats, Caps and Millinery
2361		Girls and Children's Dresses and Blouses
2369		Girls and Children's Outerwear, nec
2371		Fur Goods
2381		Fabric Dress and Work Gloves
2384		Robes and Dressing Gowns
2385		Waterproof Outerwear
2386		Leather and Sheep-Lined Clothing
2387		Apparel Belts
2389		Apparel and Accessories, nec
2391		Curtains and Draperies
2392		House Furnishings, nec
2393		Textile Bags
2394		Canvas and Related Products
2395		Pleating and Stitching
2396		Automotive and Apparel Trimmings
2397		Schiffli Machine Embroideries
2399		Fabricated Textile Products, nec

Table B-2. Facilities and Activities Covered by the Georgia IGP by SIC Code		
SIC Code or Activity Code	**Subsector**	**Activity Represented**
24: LUMBER AND WOOD PRODUCTS		
2411	A3: Timber Products	Logging
2421	A1: Timber Products	Sawmills and Planing Mills, General
2426	A4: Timber Products	Hardwood Dimension and Flooring Mills
2429		Special Product Sawmills, nec
2431		Millwork
2434	W1: Furniture and Fixtures	Wood Kitchen Cabinets
2435	A4: Timber Products	Hardwood Veneer and Plywood
2436		Softwood Veneer and Plywood
2439		Structural Wood Members, nec
2441	A5: Timber Products	Nailed Wood Boxes and Shook
2448	A4: Timber Products	Wood Pallets and Skids
2449		Wood Containers, nec
2451		Mobile Homes
2452		Prefabricated Wood Buildings
2491	A2: Timber Products	Wood Preserving
2493	A4: Timber Products	Reconstituted Wood Products
2499		Wood Products, nec
25: FURNITURE AND FIXTURES		
2511	W1: Furniture and Fixtures	Wood Household Furniture
2512		Upholstered Household Furniture
2514		Metal Household Furniture
2515		Mattresses and Bedsprings
2517		Wood TV and Radio Cabinets
2519		Household Furniture, nec
2521		Wood Office Furniture
2522		Office Furniture, Except Wood
2531		Public Building and Related Furniture
2541		Wood Partitions and Fixtures
2542		Partitions and Fixtures, Except Wood
2591		Drapery Hardware and Blinds and Shades
2599		Furniture and Fixtures, nec

Table B-2. Facilities and Activities Covered by the Georgia IGP by SIC Code		
SIC Code or Activity Code	**Subsector**	**Activity Represented**
26: PAPER AND ALLIED PRODUCTS		
2611	B2: Paper and Allied Products	Pulp Mills
2621		Paper Mills
2631	B1: Paper and Allied Products	Paperboard Mills
2652	B2: Paper and Allied Products	Setup Paperboard Boxes
2653		Corrugated and Solid Fiber Boxes
2655		Fiber Cans, Drums and Similar Products
2656		Sanitary Food Containers
2657		Folding Paperboard Boxes
2671		Paper Coated and Laminated, Packaging
2672		Paper Coated and Laminated, nec
2673		Bags: Plastic, Laminated and Coated
2674		Bags: Uncoated Paper and Multiwall
2675		Die-Cut Paper and Board
2676		Sanitary Paper Products
2677		Envelopes
2678		Stationery Products
2679		Converted Paper Products, nec
27: PRINTING AND PUBLISHING		
2711	X1: Printing and Publishing	Newspapers
2721		Periodicals
2731		Book Publishing
2732		Book Printing
2741		Miscellaneous Publishing
2752		Commercial Printing, Lithographic
2754		Commercial Printing, Gravure
2759		Commercial Printing, nec
2761		Manifold Business Forms
2771		Greeting Cards
2782		Blankbooks and Looseleaf Binders
2789		Bookbinding and Related Work
2791		Typesetting
2796		Platemaking Services
28: CHEMICALS AND ALLIED PRODUCTS		
2812	C2: Chemicals and Allied Products	Alkalies and Chlorine
2813		Industrial Gases
2816		Inorganic Pigments

Table B-2. Facilities and Activities Covered by the Georgia IGP by SIC Code		
SIC Code or Activity Code	**Subsector**	**Activity Represented**
2819	C2: Chemicals & Allied Products	Industrial Inorganic Chemicals, nec
2821	C4: Chemicals and Allied Products	Plastics Materials and Resins
2822		Synthetic Rubber
2823		Cellulosic Manmade Fibers
2824		Organic Fibers, Noncellulosic
2833	C5: Chemicals and Allied Products	Medicinals and Botanicals
2834		Pharmaceutical Preparations
2835		Diagnostic Substances
2836		Biological Products, Except Diagnostic
2841	C3: Chemicals and Allied Products	Soap and Other Detergents
2842		Polishes and Sanitation Goods
2843		Surface Active Agents
2844		Perfumes and Cosmetics -Toilet Preparations
2851	C5: Chemicals and Allied Products	Paints and Allied Products
2861		Chemicals Gum and Wood Manufacturers
2861		Gum and Wood Chemicals
2865		Cyclic Crudes and Intermediates
2869		Industrial Organic Chemicals, nec
2873	C1: Chemicals and Allied Products	Nitrogenous Fertilizers
2874		Phosphatic Fertilizers
2875		Fertilizers, Mixing Only
2879		Agricultural Chemicals, nec
2891	C5: Chemicals and Allied Products	Adhesives and Sealants
2892		Explosives
2893		Printing Ink
2895		Carbon Black
2899		Chemical Preparations, nec
29: PETROLEUM AND COAL PRODUCTS		
2911	C5: Chemicals and Allied Products	Petroleum Refining
2951	D1: Asphalt Paving/Roofing Materials and Lubricants	Asphalt Paving Mixtures and Blocks
2952		Asphalt Felts and Coatings
2992	D2: Asphalt Paving/Roofing Materials and Lubricants	Lubricating Oils and Greases
2999		Petroleum and Coal Products, nec

Table B-2. Facilities and Activities Covered by the Georgia IGP by SIC Code		
SIC Code or Activity Code	**Subsector**	**Activity Represented**
30: RUBBER AND MISCELLANEOUS PLASTICS PRODUCTS		
3011	Y1: Rubber, Miscellaneous Plastic Products, and Misc. Manufacturing Industries	Tires and Inner Tubes
3021		Rubber and Plastics Footwear
3052		Rubber and Plastics Hose and Belting
3053		Gaskets, Packing and Sealing Devices
3061		Mechanical Rubber Goods
3069		Fabricated Rubber Products, nec
3081	Y2: Rubber, Miscellaneous Plastic Products, and Misc. Manufacturing Industries	Unsupported Plastics Film and Sheet
3082		Unsupported Plastics Profile Shapes
3083		Plastics-High Pressure Laminates
3083		Laminated Plastics Plate and Sheet
3084		Plastics Pipe
3085		Plastics Bottles
3086		Plastics Foam Products
3087		Custom Compound Purchased Resins
3088		Plastics Plumbing Fixtures
3089		Plastics Products, nec
31: LEATHER AND ALLIED PRODUCTS		
3111	Z1: Leather Tanning and Finishing	Leather Tanning and Finishing
3131	V1: Textile Mills, Apparel, and Other Fabric Product Manufacturing; Leather and Leather Products	Footwear Cut Stock
3142		House Slippers
3143		Men's Footwear, Except Athletic
3144		Women's Footwear, Except Athletic
3149		Footwear, Except Rubber, nec
3151		Leather Gloves and Mittens
3161		Luggage
3171		Women's Handbags and Purses
3172		Personal Leather Goods, nec
3199		Leather Goods, nec
32: STONE, CLAY AND GLASS PRODUCTS		
3211	E3: Glass, Clay, Cement, Concrete and Gypsum Products	Flat Glass
3221		Glass Containers
3229		Pressed and Blown Glass, nec
3231		Products of Purchased Glass
3241		Cement, Hydraulic

Table B-2. Facilities and Activities Covered by the Georgia IGP by SIC Code		
SIC Code or Activity Code	**Subsector**	**Activity Represented**
3251	E1: Glass, Clay, Cement, Concrete and Gypsum Products	Brick and Structural Clay Tile
3253		Ceramic Wall and Floor Tile
3255		Clay Refectories
3259		Structural Clay Products, nec
3261		Vitreous Plumbing Fixtures
3262		Vitreous China Table and Kitchenware
3263		Semivitreous Table and Kitchenware
3264		Porcelain Electrical Supplies
3269		Pottery Products, nec
3271	E2: Glass, Clay, Cement, Concrete and Gypsum Products	Concrete Block and Brick
3272		Concrete Products, nec
3273		Ready-Mixed Concrete
3274		Lime
3275	E3: Glass, Clay, Cement, Concrete and Gypsum Products	Gypsum Products
3281		Cut Stone and Stone Products
3291		Abrasive Products
3292		Asbestos Products
3295		Minerals, Ground or Treated
3296		Mineral Wool
3297		Nonclay Refractories
3299		Nonmetallic Mineral Products, nec
33: PRIMARY METAL INDUSTRIES		
3312	F1: Primary Metals	Blast Furnaces and Steel Mills
3313		Electrometallurgical Products
3315		Steel Wire and Related Products
3316		Cold Finishing of Steel Shapes
3317		Steel Pipe and Tubes
3321	F2: Primary Metals	Gray and Ductile Iron Foundries
3322		Malleable Iron Foundries
3324		Steel Investment Foundries
3325		Steel Foundries, nec
3331	F5: Primary Metals	Primary Copper
3334		Primary Aluminum
3339		Primary Nonferrous Metals, nec
3341		Secondary Nonferrous Metals
3351	F3: Primary Metals	Copper Rolling and Drawing
3353		Aluminum Sheet, Plate and Foil
3354		Aluminum Extruded Products

Table B-2. Facilities and Activities Covered by the Georgia IGP by SIC Code		
SIC Code or Activity Code	**Subsector**	**Activity Represented**
3355	F3: Primary Metals	Aluminum Rolling and Drawing, nec
3356		Nonferrous Rolling and Drawing, nec
3357		Nonferrous Wiredrawing and Insulating
3363	F4: Primary Metals	Aluminum Die Castings
3364		Nonferrous Die Castings, Except Aluminum
3365		Aluminum Foundries
3366		Copper Foundries
3369		Nonferrous Foundries, nec
3398	F5: Primary Metals	Metal Heat Treating
3399		Primary Metal Products, nec
34: FABRICATED METAL PRODUCTS		
3411	AA1: Fabricated Metal Products	Metal Cans
3412		Metal Barrels, Drums and Pails
3421		Cutlery
3423		Hand and Edge Tools, nec
3425		Saw Blades and Handsaws
3429		Hardware, nec
3431		Metal Sanitary Ware
3432		Plumbing Fixture Fittings and Trim
3433		Heating Equipment, Except Electric
3441		Fabricated Structural Metal
3442		Metal Doors, Sash and Trim
3443		Fabricated Plate Work (Boiler Shops)
3444		Sheet Metal Work
3446		Architectural Metal Work
3448		Prefabricated Metal Buildings
3449		Miscellaneous Metal Work
3451		Screw Machine Products
3452		Bolts, Nuts, Rivets and Washers
3462		Iron and Steel Forgings
3463		Nonferrous Forgings
3465		Automotive Stampings
3466		Crowns and Closures
3469		Metal Stampings, nec
3471		Plating and Polishing
3479	AA2: Fabricated Metal Products	Metal Coating and Allied Services

Table B-2. Facilities and Activities Covered by the Georgia IGP by SIC Code		
SIC Code or Activity Code	**Subsector**	**Activity Represented**
3482	AA1: Fabricated Metal Products	Small Arms Ammunition
3483		Ammunition, Except for Small Arms, nec
3484		Small Arms
3489		Ordnance and Accessories, nec
3491		Industrial Valves
3492		Fluid Power Valves and Hose Fittings
3493		Valves and Pipe Fittings, nec
3495		Wire Springs
3496		Miscellaneous Fabricated Wire Products
3497		Metal Foil and Leaf
3498		Fabricated Pipe and Fittings
3499		Fabricated Metal Products, nec
35: INDUSTRIAL MACHINERY AND EQUIPMENT		
3519	G1: Transportation Equipment, Industrial or Commercial Machinery	Internal Combustion Engines, nec
3523		Farm Machinery and Equipment
3524		Lawn and Garden Equipment
3531		Construction Machinery
3532		Mining Machinery
3533		Oil and Gas Field Machinery
3534		Elevators and Moving Stairways
3535		Conveyors and Conveying Equipment
3536		Hoists, Cranes and Monorails
3537		Industrial Trucks and Tractors
3541		Machine Tools, Metal Cutting Types
3542		Machine Tools, Metal Forming Types
3543		Industrial Patterns
3544		Special Dies, Tools, Jigs and Fixtures
3545		Machine Tool Accessories
3546		Power-Driven Handtools
3547		Rolling Mill Machinery
3548		Welding Apparatus
3549		Metalworking Machinery, nec
3552		Textile Machinery
3553		Woodworking Machinery
3554		Paper Industries Machinery
3555		Printing Trades Machinery
3556		Food Products Machinery
3559		Special Industry Machinery, nec

Table B-2. Facilities and Activities Covered by the Georgia IGP by SIC Code		
SIC Code or Activity Code	**Subsector**	**Activity Represented**
3561	G1: Transportation Equipment, Industrial or Commercial Machinery	Pumps and Pumping Equipment
3562		Ball and Roller Bearings
3563		Air and Gas Compressors
3564		Blowers and Fans
3565		Packaging Machinery
3566		Speed Changers, Drives and Gears
3567		Industrial Furnaces and Ovens
3568		Power Transmission Equipment, nec
3569		General Industrial Machinery, nec
3571	H1: Electronic, Electrical, Photographic and Optical Goods	Electronic Computers
3572		Computer Storage Devices
3575		Computer Terminals
3577		Computer Peripheral Equipment, nec
3578		Calculating and Accounting Equipment
3579		Office Machines, nec
3581	G1: Transportation Equipment, Industrial or Commercial Machinery	Automatic Vending Machines
3582		Commercial Laundry Equipment
3585		Refrigeration and Heating Equipment
3586		Measuring and Dispensing Pumps
3589		Service Industry Machinery, nec
3592		Carburetors, Piston Rings and Valves
3593		Fluid Power Cylinders and Actuators
3594		Fluid Power Pumps and Motors
3596		Scales and Balances, Except Laboratory
3599		Industrial Machinery, nec
36: ELECTRONIC AND OTHER ELECTRIC INDUSTRIES		
3612	H1: Electronic, Electrical, Photographic and Optical Goods	Transformers, Except Electronic
3613		Switchgear and Switchboard Apparatus
3621		Motors and Generators
3624		Carbon and Graphite Products
3625		Relays and Industrial Controls
3629		Electrical Industrial Apparatus, nec
3631		Household Cooking Equipment
3632		Household Refrigerators and Freezers
3633		Household Laundry Equipment
3634		Electric Housewares and Fans
3635		Household Vacuum Cleaners
3639		Household Appliances, nec

Table B-2. Facilities and Activities Covered by the Georgia IGP by SIC Code		
SIC Code or Activity Code	**Subsector**	**Activity Represented**
3641	H1: Electronic, Electrical, Photographic and Optical Goods	Electric Lamps
3643		Current-Carrying Wiring Devices
3644		Noncurrent-Carrying Wiring Devices
3645		Residential Lighting Fixtures
3646		Commercial Lighting Fixtures
3647		Vehicular Lighting Equipment
3648		Lighting Equipment, nec
3651		Household Audio and Video Equipment
3652		Prerecorded Records and Tapes
3661		Telephone and Telegraph Apparatus
3663		Radio and TV Communications Equipment
3669		Communications Equipment, nec
3671		Electron Tubes
3672		Printed Circuit Boards
3674		Semiconductors and Related Devices
3675		Electronic Capacitors
3676		Electronic Resistors
3677		Electronic Coils and Transformers
3678		Electronic Connectors
3679		Electronic Components, nec
3691		Storage Batteries
3692		Primary Batteries, Dry and Wet
3694		Engine Electrical Equipment
3695		Magnetic and Optical Recording Media
3699		Electrical Equipment and Supplies, nec
37: TRANSPORTATION EQUIPMENT		
3711	G1: Transportation Equipment, Industrial or Commercial Machinery	Motor Vehicles and Car Bodies
3713		Truck and Bus Bodies
3714		Motor Vehicle Parts and Accessories
3715		Truck Trailers
3716		Motor Homes
3721		Aircraft
3724		Aircraft Engines and Engine Parts
3728		Aircraft Parts and Equipment, nec
3731	R1: Ship and Boat Building and Repairing Yards	Ship Building and Repairing
3732		Boat Building and Repairing

Table B-2. Facilities and Activities Covered by the Georgia IGP by SIC Code		
SIC Code or Activity Code	**Subsector**	**Activity Represented**
3743	G1: Transportation Equipment, Industrial or Commercial Machinery	Railroad Equipment
3751		Motorcycles, Bicycles and Parts
3761		Missile and Rocket Manufacturers
3761		Guided Missiles and Space Vehicles
3764		Space Propulsion Units and Parts
3769		Space Vehicle Equipment, nec
3792		Travel Trailers and Campers
3795		Tanks and Tank Components
3799		Transportation Equipment, nec
38: INSTRUMENTS AND RELATED PRODUCTS		
3812	H1: Electronic, Electrical, Photographic and Optical Goods	Search and Navigation Equipment
3821		Laboratory Apparatus and Furniture
3822		Environmental Controls
3823		Process Control Instruments
3824		Fluid Meters and Counting Devices
3825		Instruments to Measure Electricity
3826		Analytical Instruments
3827		Optical Instruments and Lenses
3829		Measuring and Controlling Devices, nec
3841		Surgical and Medical Instruments
3842		Surgical Appliances and Supplies
3843		Dental Equipment and Supplies
3844		X-Ray Apparatus and Tubes
3845		Electromedical Equipment
3851		Ophthalmic Goods
3861		Photographic Equipment and Supplies
3873		Watches, Clocks, Watchcases and Parts
39: MISCELLANEOUS MANUFACTURING INDUSTRIES		
3911	AA1: Fabricated Metal Products	Jewelry, Precious Metal
3914		Silverware and Plated Ware
3915		Jewelers' Materials and Lapidary Work
3931	Y2: Rubber, Miscellaneous Plastic Products, and Misc. Manufacturing Industries	Musical Instruments
3942		Dolls and Stuffed Toys
3944		Games, Toys and Children's Vehicles
3949		Sporting and Athletic Goods, nec
3951		Pens and Mechanical Pencils
3952	C5: Chemicals & Allied Products	Lead Pencils and Art Goods

Table B-2. Facilities and Activities Covered by the Georgia IGP by SIC Code		
SIC Code or Activity Code	**Subsector**	**Activity Represented**
3953	Y2: Rubber, Miscellaneous Plastic Products, and Misc. Manufacturing Industries	Marking Devices
3955		Carbon Paper and Inked Ribbons
3961		Costume Jewelry
3965		Fasteners, Buttons, Needles and Pins
3991		Brooms and Brushes
3993		Signs and Advertising Specialties
3995		Burial Caskets
40: RAILROAD TRANSPORTATION		
4011	P1: Land Transportation and Warehousing	Railroads Line-Haul Operating
4013		Switching and Terminal Devices
41: LOCAL AND INTERURBAN PASSENGER TRANSPORT		
4111	P1: Land Transportation and Warehousing	Local and Suburban Transit
4119		Local Passenger Transportation, nec
4121		Taxicabs
4131		Intercity and Rural Bus Transportation
4141		Local Bus Charter Service
4142		Bus Charter Service, Except Local
4151		School Buses
4173		Bus Terminal and Service Facilities
42: TRUCKING AND WAREHOUSING		
4212	P1: Land Transportation and Warehousing	Local Trucking, Without Storage
4213		Trucking, Except Local
4214		Local Trucking With Storage
4215		Courier Service, Except by Air
4221		Farm Product Warehousing and Storage
4222		Refrigerated Warehousing and Storage
4225		General Warehousing and Storage
4226		Special Warehousing and Storage, nec
4231		Trucking Terminal Facilities
43: US POSTAL SERVICE		
4311	P1: Land Transportation and Warehousing	US Postal Service

Table B-2. Facilities and Activities Covered by the Georgia IGP by SIC Code		
SIC Code or Activity Code	**Subsector**	**Activity Represented**
44: WATER TRANSPORTATION		
4412	Q1: Water Transportation: Maintenance/ Cleaning	Deep Sea Foreign Transport of Freight
4424		Deep Sea Domestic Transport of Freight
4432		Freight Transport on The Great Lakes
4449		Water Transportation of Freight, nec
4481		Deep Sea Passenger Transportation, Except Ferry
4482		Ferries
4489		Water Passenger Transportation, nec
4491		Marine Cargo Handling
4492		Towing and Tugboat Service
4493		Marinas
4499		Water Transportation Services, nec
45: TRANSPORT BY AIR		
4512	S1: Air Transportation Facilities	Air Transportation, Scheduled
4513		Air Courier Services
4522		Air Transportation, Nonscheduled
4581		Airports, Flying Fields and Services
50: WHOLESALE TRADE - DURABLE GOODS		
5015	M1: Automobile Salvage Yards	Motor Vehicle Parts, Used
5093	N1/N2: Scrap Recycling Facilities	Scrap and Waste Materials
51: WHOLESALE TRADE - NONDURABLE GOODS		
5171	P1: Land Transportation and Warehousing	Petroleum Bulk Stations and Terminals

APPENDIX

C

GEORGIA COMMUNITIES COVERED BY THE NPDES MS4 STORMWATER PERMIT

Phase I – Large MS4s

Acworth
Alpharetta
Atlanta
Austell
Avondale Estates
Berkley Lake
Buford
Chamblee
Clarkston
College Park
Dacula
Decatur
Duluth
Doraville
East Point
Fairburn
Forest Park
Grayson
Hapeville
Jonesboro
Kennesaw
Lake City
Lawrenceville
Lilburn
Lithonia
Lovejoy
Marietta
Morrow
Norcross
Palmetto
Pine Lake
Powder Springs
Riverdale
Roswell
Smyrna
Snellville
Stone Mountain
Sugar Hill
Suwanee
Union City

Clayton County
Cobb County
DeKalb County
Fulton County
Gwinnett County

Phase I – Medium MS4s

Augusta-Richmond Co.
Bloomingdale
Columbus-Muscogee County
Garden City
Macon
Pooler
Port Wentworth
Savannah
Thunderbolt
Tybee Island

Bibb County
Chatham County
Forsyth County

Phase II – Small MS4s

Athens-Clarke Co.
Barrow County
Bartow County
Catoosa County
Cherokee County
Columbia County
Coweta County
Dougherty County
Douglas County
Fayette County
Floyd County
Glynn County
Hall County
Henry County
Houston County
Jones County
Lee County
Liberty County
Long County
Lowndes County
Newton County
Oconee County
Paulding County
Peach County
Rockdale County
Spalding County
Walker County
Walton County
Whitfield County

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