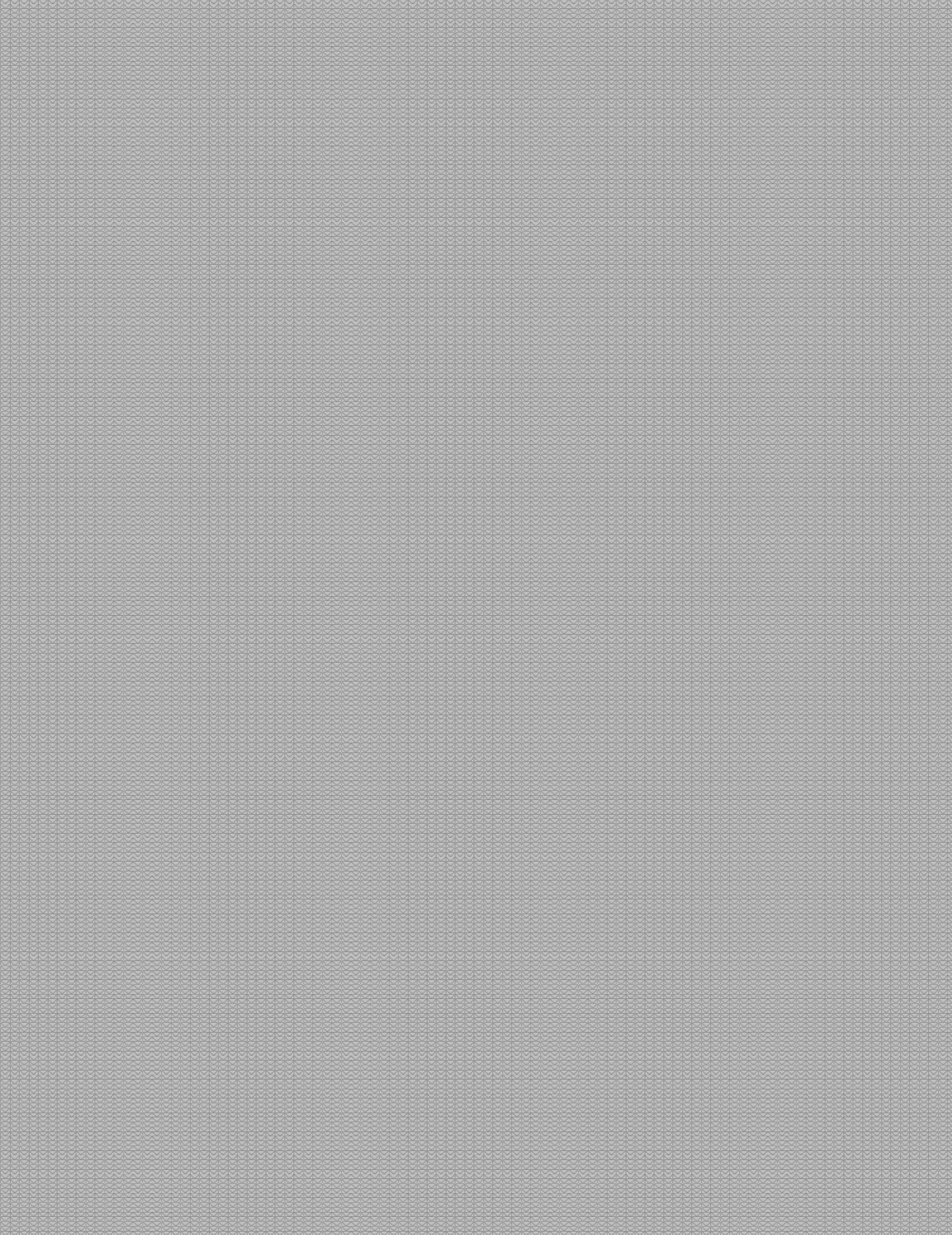
2010



Standard Operating

Procedures

PUBLIC WORKS DEPARTMENT

CITY OF HARLINGEN

11/24/2010

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**1.0 Introduction**

Stormwater runoff is part of a natural hydrologic process. Stormwater runoff contains pollutants that can harm human health, degrade water quality and aquatic habitat, and impair ecosystem functions. On its way to streams, estuaries, and other receiving water bodies, stormwater runoff accumulates pollutants such as oil, gas, and other hydrocarbons, heavy metals, deicers, pesticides, fine sediment, fertilizers, and bacteria, all of which can impair water quality.

The purpose of this handbook is to provide general guidance for selecting and implementing Best Management Practices (BMPs) to reduce pollutants in runoff from municipal operations. This handbook is primarily designed to assist municipal staff with incorporating pollution prevention controls into their overall stormwater management program.

**1.1 Objective of the Manual**

The specific objectives of this manual are to:

 Provide a commonly accepted set of technical standards and guidance on stormwater management measures that will control the quality and quantity of stormwater produced by municipal activities, new development and redevelopment

 Assist the municipality in meeting Stormwater Phase II requirements

 Encourage the use of targeted best management practices (BMPs) within the watershed with long-term goal of consistent application by all regulated entities within the watershed

 Promote behavior that will improve the water quality of the Arroyo Colorado and

Laguna Madre

 Encourage cost-savings for MS4s through proper and timely maintenance of stormwater systems

**Description of SOP:**

Everyday activities performed at municipal facilities is a potentially a source of stormwater pollution due to improper maintenance of facilities. Untidy work areas can lead to windblown trash, wash water, and sediments contaminating the Arroyo Colorado.

**Purpose of SOP:**

The following procedures outlined below will promote efficient and safe housekeeping practices.

**Suggested Protocols:**

*General*

 A working facility should be kept clean and free of unnecessary clutter.

 All shop floors/work areas should be swept and made free of dirt, shavings, etc.

 Dispose of wash water, sweepings, and sediments properly

 All hazardous materials should be stored as specified by the manufacturer

 Container storage areas should be kept clean and free of trash or debris

 Any unused chemicals used on a daily basis shall be restored to original storage/container

 Recycle or dispose of fluids properly

*Garbage Disposal*

 Daily garbage should be disposed of in a designated container

 Container should be one that is adequate in size to properly store garbage or debris until emptied and not to appear as a nuisance to the general public

 Large containers should be located on a concrete pad

 Lids should be in good working order to keep debris from falling out or being blown out by high winds

 Repairs should be done immediately should leak develop in the containers

 Daily garbage should be disposed of on a daily basis (small containers). Large containers should be disposed of once capacity has been reached

*Fabrication Facility*

 Worktables should be free of clutter and dusted daily

 Power cords, electrical cords, air cords should be properly stored with their designated machinery or designated area

 Return all tools to tool box or return to shadow board if one is available

 Return all roller tables to their designated area

 A walk around of the work facility should be done daily and any unsightly clutter or debris will be removed and disposed accordingly

 Trash containers for citizen/commercial distribution are to be stored by size and be kept well organized

 Containers that are no longer usable are to be cannibalized for spare parts and remains disposed of in a timely manner

**Training:**

 All employees will be trained on proper housekeeping procedures

 Employees will be trained in the proper spill containment and cleanup procedures

**Spill Response and Prevention:**

 Refer to SOP 11.0 Spill Prevention, Control, and Cleanup

 Have spill cleanup materials readily available and in a known location

 Clean up spills immediately and use dry methods (absorbents) if possible

 Properly dispose of spill cleanup material

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 Containers that are no longer usable are to be cannibalized for spare parts and remains disposed of in a timely manner

*Fueling*

 Drip pans or absorbent pads shall be used under all hose and pipe connections and other leak prone areas during bulk fueling or small equipment fueling

 Absorbent spill clean-up material and spill kits shall be available in the fueling areas and in mobile fueling units

 It shall be posted in a prominent area of the facility instruction for safe operation of fueling equipment, and appropriate contact information for person(s) responsible for spill response

**Training:**

 All employees will be trained on proper housekeeping procedures

 Employees will be trained in the proper spill containment and cleanup procedures

**Spill Response and Prevention:**

 Have spill cleanup materials readily available and in a known location

 If a spill occurs, notify key personnel immediately. If the material is unknown or hazardous, the local fire department may also need to be contacted

 If it is safe to do so, attempt to contain the material and block the nearby storm drains so that the area impacted is minimized. If the material is unknown or hazardous wait for properly trained personnel to contain the materials.

 Perform an assessment of the area where the spill occurred and the downstream area that it could impact. Relay the information to key personnel.

**Spill Cleanup Procedures:**

 Small non-hazardous spills

o Use a rag, damp cloth or absorbent materials for general clean up of liquids

o Use brooms or shovels for the general clean up of dry material

o If water is used, it must be collected and properly disposed of. The waste water cannot be allowed to enter the storm drain

o Dispose of any waste materials properly

o Clean and dispose of any equipment used to clean the spill properly

 Large non-hazardous spills

o Use absorbent materials for general clean up of liquids

o Use brooms, shovels or street sweepers for the general clean up of dry materials

o If water is used, it must be collected and properly disposed of. The wash water cannot be allowed to enter the storm drain

o Dispose of any waste material properly

o Clean and dispose of any equipment used to clean the spill properly

 For hazardous or very large spills, a private cleanup company, Hazmat team, or Fire Department may be need to be contacted to assess the situation and conduct the cleanup and disposal of materials

 Chemical cleanups of materials can be achieved with the use of absorbents, gels, and foams. Remove the absorbent materials promptly and dispose of according to regulations

 If the spilled material is hazardous, then the used cleanup materials are also hazardous

and must be disposed of as hazardous waste.

**Description of SOP:**

Improper fueling of vehicles and equipment can contribute to contamination of stormwater by introducing hydrocarbons, oil and grease, and heavy metals to the Arroyo Colorado. Vehicle and equipment fueling procedures and practices are designed to minimize pollution to surface or ground waters. Safety is always a priority when delivering fuel into vehicles, mobile fuel tanks, and/or storage tanks.

**Purpose of SOP:**

The following procedures are to be implemented at all maintenance yards with fueling, including mobile vehicle and small equipment fueling operations.

**Suggested Protocols:**

*General*

 Shut engine off before fueling vehicles/equipment

 Make sure that the fuel is the proper type

 Do not smoke in the fueling area

 Fuel tanks should not be “**topped off**”

 Vehicles and equipment shall not be left unattended while fueling

 No foreign object shall used to depress gas nozzles while fueling

 Absorbent spill clean-up material and spill kits shall be available in the fueling areas

 It shall be posted in a prominent area of the facility instruction for safe operation of fueling equipment, and appropriate contact information for person(s) responsible for spill response

*Mobile Fueling*

 Mobile fueling shall be minimized and whenever practical, vehicles and equipment shall be transported to the designated fueling areas in the facility

 If mobile fueling must occur a spill kit shall be readily available and a drip pan shall be placed under the nozzle to prevent any spillage

 The mobile fueling tank shall be inspected frequently for leaks

*Small Equipment Fueling*

 Small equipment refers to lawn mowers, small sweepers, weed eaters, blowers, portable generators, etc.

 All small equipment must be turned off while fueling

 Fueling of small equipment should be done over a paved (concrete) area away from storm drains or ditches

 When fueling from a jerry can a funnel will always be used

*Bulk Fueling*

 A trained employee must always be present to supervise during bulk transfer

 Drip pans or absorbent pads shall be used under all hose and pipe connections and other leak prone areas during bulk fueling

 Block storm sewer inlets, or contain tank trucks used for bulk transfer, with temporary berms or temporary absorbent booms during bulk transfer

 Protect fueling area with berms and/or dikes to prevent run on, run off, and to contain

spills

*Maintenance and Inspection*

 Vehicles and equipment shall be inspected on a regular basis for fuel leaks

 Any equipment, tanks, pumps, and fuel dispensing equipment found to be leaking or in disrepair must be repaired or replace immediately

 Fueling areas and storage tanks shall be inspected monthly

**Training:**

 All employees shall be trained upon hiring and annually thereafter on proper methods for handling and disposing of waste.

 All employees shall understand stormwater discharge prohibitions, wastewater

discharge requirements, and the best management practices (BMPs).

 All employees shall be trained on the proper fueling and cleanup procedures

 A training log/sign-in sheet will be used to document training

 Employees will be familiar with the sites spill control plan and/or proper spill cleanup procedures

**Spill Response and Prevention:**

 Refer to SOP 11.0 Spill Prevention, Control, and Cleanup

 Have spill cleanup materials readily available and in a known location

 Clean up spills immediately and use dry methods (absorbents)

 Properly dispose of spill cleanup material (absorbents)

 Collected waste shall be disposed of properly

Wash water from vehicle and equipment cleaning activities performed outdoors where water can flow into surface water or ground waters can contribute to contamination of the Arroyo Colorado. Good housekeeping practices can minimize the risk of contamination from wash water discharges.

**Purpose of SOP:**

The following procedures outlined below will prevent or reduce the discharge of pollutants to stormwater during vehicle and equipment cleaning.

**Suggested Protocols:**

*General*

 All vehicles shall be taken off-site to a commercial carwash facility better equipped to handle and properly dispose of the wash waters

 In the event that vehicle and equipment washing must be performed on-site the

following procedures apply:

o Use biodegradable, phosphate-free detergents

o Use designated paved wash areas which are well marked with instructions on where and how washing must be done

o Use hoses with nozzles that automatically turn off when left unattended

o A covered trash container should be provided in the wash area

o Discharge of equipment or vehicle wash water should be done to the sanitary sewer system, oil/water separators, sand/grit traps or on-site treatment/recycling units.

o Washing area should be swept to remove solid debris

**Training:**

 All newly hired employees will be trained on proper cleaning and wash water disposal procedures and refresher courses will be conducted on a regular schedule

 Employees will be trained on proper maintenance measures for the wash area

 Employees will be trained in the proper spill containment and cleanup procedures.

**Spill Response and Prevention:**

 Refer to SOP 11.0 Spill Prevention, Control, and Cleanup

 Have spill cleanup materials readily available and in a known location

 Clean up spills immediately and use dry methods (absorbents) if possible

 Properly dispose of spill cleanup material

**Description of SOP:**

Vehicle or equipment maintenance and repair is potentially a significant source of stormwater pollution, due to the use of materials and wastes created that are harmful to humans and the environment. Engine repair and service (parts cleaning), replacement of fluids (oil changes), and outdoor equipment storage and parking (dripping engines) can impact water quality.

**Purpose of SOP:**

Implementation of the following activities will prevent or reduce the discharge of pollutants to stormwater from vehicle and equipment maintenance and repair activities.

**Suggested Protocols:**

*General*

 Maintenance and repair activities will be done indoors or under roof cover whenever feasible

 Work areas should not be hosed down. Instead dry sweeping will be used.

 If work areas must be hosed down, waste water will be collected or directed towards the sanitary sewer/grit/sand traps

 Signs will be posted at sinks to remind employees not to pour hazardous wastes down the drains

 Leaking or dripping fluids shall be collected in drip pans or containers

 All waste material shall be disposed of according to the applicable laws and regulations.

*Mobile Repair Units*

 Field repair of vehicles and equipment shall be minimized. Vehicles and equipment shall be transported to the designated repair area.

 If field repairs are required then the following shall be implemented:

o If repair is near storm inlets/manholes will be protected

o Use a drip pan/trap/ ground cloth beneath the vehicle or equipment to capture all spills and drips. The collected material will be disposed, reused, or recycled properly

*Parts Cleaning*

 Cleaning agents which are able to be recycled shall be give priority in shop applications

 The use of solvents will be minimized. Parts will be cleaned without the use of solvents whenever possible

 Non-Toxic chemicals will be used whenever possible

 All part cleaning will be performed in the parts cleaning tank with the proper personal safety equipment (safety glasses, gloves, etc.)

 The parts cleaning solution will be stored in the cleaning tank and shall be properly labeled

 When the cleaning solution is unserviceable it shall be disposed of in the used oil tank

 The use oil tank shall be clearly labeled - “Used Oil/Chemicals”

 Do not dispose of left over cleaning solutions, solvents, and automotive fluids and oils in sanitary sewer

*Maintenance and Repair Activities*

 Keep a drip pan under the vehicles and equipment while you unclip hoses, unscrew filter, or remove other parts.

 Use a drip pan under any vehicle that might leak while you work on it to prevent splatters or drips off the shop floor

 Promptly transfer used fluids to the proper waste or recycling drums. Don’t leave drip

pans or other containers lying around

 Do not change motor oil or perform equipment maintenance in non-appropriate areas

 If equipment (e.g. radiators, axles) are to be stored outdoors, oil and other fluids should be drained first. This also applies to vehicles being stored and not used on a regular basis.

*Oil Disposal*

 Oil/chemical solutions will be disposed of in a designated container marked – “Used

Oil/Chemicals”

 Used oil/fluid filters will be disposed of in a designated container marked – “Used

Filters”

 Disposal of used filters and oil/chemical tanks shall be done by a licensed transporter

*Inspection*

 Regularly inspect vehicles and equipment for leaks, and repair immediately

 All incoming vehicles and equipment shall be checked for leaking oil and fluids.

**Training:**

 All employees shall be trained upon hiring and annually thereafter on proper methods for handling and disposing of waste.

 All employees shall understand stormwater discharge prohibitions, wastewater

discharge requirements, and the best management practices (BMPs).

 Employees will be familiar with the site spill control plan and/or proper spill cleanup procedures

**Spill Response and Prevention:**

 Refer to SOP 11.0 Spill Prevention, Control, and Cleanup

 Have spill cleanup materials readily available and in a known location

 Clean up spills immediately and use dry methods (absorbents) if possible

 Properly dispose of spill cleanup material

**Description of SOP:**

Storage areas for equipment and fleet parking can contribute a number of substances, such as trash, suspended solids, hydrocarbons, oil and grease, and heavy metals that can enter the Arroyo Colorado through stormwater runoff.

**Purpose of SOP:**

The following procedures are to reduce the discharge of pollutants from vehicle and equipment storage areas to surface and ground waters.

**Suggested Protocols:**

*General*

 All vehicles and equipment shall be parked in the designated parking areas and when possible under a covered area.

 Vehicles and equipment can be stored on pervious (unpaved) surfaces as long as vehicles and equipment are inspected on a regular basis for leaks.

 Drip pans shall be used to collect leaking fluids. Absorbent materials shall be used to collect any fluids that have leaked on to parking areas.

 Leaking vehicles shall be reported to Supervisor and the leaks shall be addressed immediately

 Vehicles and equipment shall not be parked over a storm drain

*Surface Cleaning*

 Dry cleaning methods (sweepers or vacuuming) shall be used on paved parking areas with frequency of cleaning to be based on usage and field observations of waste accumulation

 All parking areas shall be cleaned at least once prior to the wet season

 If water is used to clean parking areas then the following procedures apply:

o Block storm drains or contain runoff

o Wash water will be collected and pumped to the sanitary sewer or discharged to a pervious surface, do not allow wash water to enter storm drains

o Dispose of parking lot sweeping debris and dirt at a landfill/transfer station

*Vehicle & Equipment Inspection/Maintenance*

 Visual inspections of all City vehicles and equipment should be conducted before driving the vehicle and at the end of the day.

 Inspection of vehicles and equipment should consist of, but not limited to, the follow:

o Check all safety lighting

o Check all fluid levels

o Check tires for proper inflation and thread wear

o Check brakes

o Check for broken or missing mirrors, side windows, rear windows, and front windshields

o Fluid leaks

 Any items found to be defective from routine inspection preformed on the vehicles and equipment shall be reported to the Supervisor immediately

 Fleet maintenance shall be notified immediately to repair/correct the problem(s).

 Operators assigned to a vehicle or equipment shall leave the equipment clean before the end on their scheduled shift

 Preventive maintenance shall be done on all vehicles on a scheduled basis to prevent

any mechanical problems

*Inspection*

 Parking areas shall be inspected by designated employee(s) for staining/leaking on a daily basis

 Cleaning equipment (sweepers, vacuums) shall be inspected for leaks on a regular basis

*Surface Repair*

 Apply concrete, asphalt, and seal coat for parking lot repairs during dry weather

 Cover and seal nearby storm inlets and manholes before applying seal coat, slurry seal, etc., where applicable. Leave covers in place until job is complete and emulsified oil sealants have dried.

**Training:**

 All employees shall be trained upon hiring and annually thereafter on proper methods regarding cleaning of paved areas and proper operation of equipment.

 Employees will be familiar with the site spill control plan and/or proper spill cleanup procedures

**Spill Response and Prevention:**

 Refer to SOP 11.0 Spill Prevention, Control, and Cleanup

 Have spill cleanup materials readily available and in a known location

 Clean up spills immediately and use dry methods (absorbents) if possible

 Properly dispose of spill cleanup material

**Description of SOP:**

Loading/unloading of materials usually takes place outside on docks or terminals. Materials spilled; leaked, or lost during loading/unloading may collect in the soil or on other surfaces and have the potential to be carried away by stormwater runoff or when area is clean. Loading and unloading of material may include package products, barrels, and bulk products.

**Purpose of SOP:**

The following procedures will prevent or reduce the discharge of pollutants to stormwater from outdoor loading/unloading of materials.

**Suggested Protocols:**

*Loading and Unloading – General Guidelines*

 Do not conduct loading and unloading during wet weather, whenever possible

 Cover designated loading/unloading areas to reduce exposure of materials to rain

 A seal or door skirt between delivery vehicles and buildings can reduce or prevent exposure to rain

 If feasible, load and unload material and equipment in covered areas such as building overhangs at loading docks

 Load/unload only at designated loading areas

 Use drip pans underneath hose and pipe connections and other leak-prone spots during liquid transfer operations, and when making and breaking connections. Several drip pans should be stored in a covered location near the liquid transfer area so that they are always available, yet protected from precipitation when not in use. Drip pans must be cleaned periodically, and drip collected materials must be disposed of properly.

*Inspection*

 Check loading and unloading equipment regularly for leaks

 Look for dust or fumes during loading or unloading operations

**Training:**

 Train employees on the proper loading and unloading procedures

 All employees shall understand stormwater discharge prohibitions, wastewater discharge requirements, and the best management practices (BMPs).

 A training log/sign-in sheet will be used to document training

 Employees will be familiar with the sites spill control plan and/or proper spill cleanup procedures

**Spill Response and Prevention:**

 Refer to SOP 11.0 Spill Prevention, Control, and Cleanup

 Have spill cleanup materials readily available and in a known location

 Clean up spills immediately and use dry methods (absorbents)

 Properly dispose of spill cleanup material (absorbents)

 Collected waste shall be disposed of properly

**Description of SOP:**

Accidental release of materials from above ground liquid storage tanks, drums, and dumpsters present the potential for contaminating storm waters with many different pollutants. Materials spilled, leaked, or lost from storage tanks may accumulate in soils or on other surfaces and be carried away by rainfall runoff.

**Purpose of SOP:**

The following procedures are for containers located outside of a building used to temporarily store liquid materials

**Suggested Protocols:**

*General*

 Protect materials from rainfall, run on, runoff, and wind dispersal by covering the storage area with a roof, enclosing the area or building a berm around it, or use covered dumpsters for waste product containers

 Employ safeguards against accidental release by providing protection guards (bollards)

around tanks and piping to prevent vehicle or forklift damage

 Berm or surround tank or container with secondary containment systems using dikes, liners, vaults, or double walled tanks.

*Storage Areas*

 Provide barriers such as post or guardrails, where tanks are exposed, to prevent collision damage with vehicles

 Provide secure storage to prevent vandalism

 Place tight-fitting lids on all containers

 Enclose or cover the containers where they are stored.

 Raise the containers off the ground by use of pallet or similar method, with provisions for spill control and secondary containment

 Contain the material on such a manner that is the container leaks or spills, the contents will not discharge, flow, or be washed into the storm drain system, surface waters or ground water

 Place drip pans or absorbent material beneath all mounted container taps, and at all potential drip and spill locations during filling and unloading of containers. Drip pans must be cleaned periodically, and shall collect liquids and soiled absorbent materials must be reused/recycled or properly disposed.

*Container Management*

 Keep containers in good condition without corrosion or leaky seams

 Place containers in a lean-to structure or otherwise covered to keep rainfall from reaching the drums

 Replace containers if they are deteriorating to the point where leakage is occurring.

Keep all containers undercover to prevent the entry of stormwater.

 Keep waste container drums in an area such as a service bay. Drums stored outside must be stored in a lean-to type structure, shed or walk-in container

*Storage of Hazardous Materials*

 Storage of reactive, ignitable, or flammable liquids must comply with the fire and hazardous waste codes.

 Place containers in a designated area that is paved, free of cracks and gaps, and impervious in order to contain leaks and spills. The area should also be covered.

*Inspection*

 Conduct regular inspections of storage areas so that leaks and spills are detected as soon as possible

 Conduct routine inspections and check for external corrosion of material containers.

Also check for structural failure, spills and overfills due to operator error, or failure of piping systems

 Visually inspect new tank or containers for damages

 Label new or secondary containers with the product name and hazards

 Replace containers that are leaking, corroded, or otherwise deteriorating with ones in good condition.

**Training:**

 Train crews in proper material storage

 All employees shall understand stormwater discharge prohibitions, wastewater discharge requirements, and the best management practices (BMPs).

 A training log/sign-in sheet will be used to document training

 Employees will be familiar with the sites spill control plan and/or proper spill cleanup procedures

**Spill Response and Prevention:**

 Refer to SOP 11.0 Spill Prevention, Control, and Cleanup

 Have spill cleanup materials readily available and in a known location

 Clean up spills immediately and use dry methods (absorbents)

 Properly dispose of spill cleanup material (absorbents)

 Collected waste shall be disposed of properly

**Description of SOP:**

Raw materials, by products, finished products, containers, and material storage areas exposed to rain and/or runoff can pollute stormwater. Stormwater can become contaminated when materials wash off or dissolved into water or are added to runoff by spills and leaks. Improper storage of these materials can result in accidental spills and release of the materials.

**Purpose of SOP:**

The following procedures are to prevent or reduce the discharges of pollutants to stormwater from material delivery and storage.

**Suggested Protocols:**

*General*

 Store all materials inside when possible. If it is not feasible, than all outside storage materials areas should be covered with a roof, and bermed, or enclosed to prevent stormwater contact. As the very minimum, a temporary waterproof covering made of polyethylene; polypropylene or hypalon should be used over all materials stored outside.

 Cover and contain all stockpiles of raw materials to prevent stormwater from running

into the covered piles. The covers must be in place at all times when work with the stockpiles is not occurring.

 If the stockpiles are so large that they cannot feasibly be covered and contained, implement erosion control practices at the perimeter of the site and at any catch basins to prevent erosion of the stockpiled material off site

 Keep liquids in a designated area on a paved impervious surface within a secondary

containment

 Keep outdoor storage containers in good condition

 Keep storage areas clean and dry

 Secure drums stored in an area where unauthorized persons may gain access to prevent accidental spillage, pilferage, or any unauthorized use

 Cover wood products treated with chromate copper arsenate, ammonical copper zinc arsenate, creosote, or pentachlorophenol with tarps or store indoors

*Raw Material Containment*

 Do not store chemicals, drums, or bagged materials directly on the ground. Place these items in secondary containers if applicable.

 Tanks should be bermed or surrounded by a secondary containment system

*Inspection*

 Conduct regular inspections of storage areas so that leaks and spills are detected as soon as possible

 Conduct routine inspections and check for external corrosion of material containers.

Also check for structural failure, spills and overfills due to operator error, or failure of piping systems

 Visually inspect new tank or containers for damages

**Training:**

 Train crews in proper material storage

 All employees shall understand stormwater discharge prohibitions, wastewater discharge requirements, and the best management practices (BMPs).

 A training log/sign-in sheet will be used to document training

 Employees will be familiar with the sites spill control plan and/or proper spill cleanup procedures

**Spill Response and Prevention:**

 Refer to SOP 11.0 Spill Prevention, Control, and Cleanup

 Have spill cleanup materials readily available and in a known location

 Clean up spills immediately and use dry methods (absorbents)

 Properly dispose of spill cleanup material (absorbents)

 Collected waste shall be disposed of properly

**Description of SOP:**

Improper storage and handling of solid wastes can allow toxic compounds, oil and greases, heavy metals, nutrients, suspended solids, and other pollutants to enter stormwater runoff.

**Purpose of SOP:**

The following procedures are for the use of waste handling and disposal to reduce the discharges of pollutants to the stormwater and Arroyo Colorado.

**Suggested Protocols:**

*General*

 Cover storage containers with leak proof lids or some other means. If waste is not in containers, cover all waste piles with plastic tarps and prevent stormwater runoff with a berm. Waste containers and piles must be covered except when in use

 Use drip pans or absorbent materials whenever grease containers are emptied by vacuum trucks or other means. Grease cannot be left on the ground. Collected grease must be properly disposed of as garbage.

 Check storage containers weekly for leaks and to ensure lids are on tightly. Replace any that are leaking, corroded, or otherwise deteriorating

 Sweep and clean the storage area regularly. If it is paved, do not hose down the area to a storm drain

 Transfer waste from damaged containers into safe containers

 Dispose of rinse and wash water from cleaning waste containers into a sanitary sewer if allowed by the local sewer authority. Do not discharge wash water to the street or storm drain.

 Take special care when loading or unloading waste to minimize losses.

*Controlling Litter*

 Post “No Littering” signs

 Provide sufficient number of litter receptacles for the facility

 Clean out and cover litter receptacles frequently to prevent spillage

*Waste Collection*

 Keep waste collection areas clean

 Inspect solid waste containers for structural damage or leaks regularly. Repair or replace damage containers as necessary

 Secure solid waste containers; containers must be closed tightly when not in use

 Place waste containers under cover if possible

 Do not fill waste containers with washout water or any other liquid

 Ensure that only appropriate solid wastes are added to the solid waste container.

Certain wastes such as hazardous wastes may not be disposed of in solid waste containers

 Do not mix waste; this can cause a chemical reaction, make recycling impossible, and

complicate disposal

*Good Housekeeping*

 Use all of the product before disposing if the container

 Keep the waste management area clean at all times by sweeping and cleaning spills immediately

 Use dry methods when possible (e.g. sweeping, using absorbents) when cleaning around dumpster areas. If water must be used after sweeping, using absorbents, collect water and discharge through grease interceptors or sanitary sewer drains.

 Stencil storm drains on the facility property with prohibitive message regarding waste disposal

*Chemical/Hazardous Waste*

 Select designated hazardous waste collection area on-site

 Store hazardous materials and wastes in covered containers protected from vandalism, and compliance with fire and hazardous waste codes

 Place hazardous waste containers in secondary containment

 Make sure that hazardous waste is collected, removed, and disposed of only at authorized disposal areas.

*Run on/Runoff Prevention*

 Prevent stormwater run on from entering the waste management area by enclosing the area or building a berm around the area

 Prevent the waste materials from directly contacting rain

 Cover waste piles with temporary covering materials such as reinforced tarpaulin, polyethylene, polyurethane, polypropylene or hypalon.

 Cover the area with a permanent roof if feasible.

 Cover dumpsters to prevent rain from washing waste out of holes or cracks in the bottom of the dumpster

 Move the activity indoor after ensuring all safety concerns such as fire hazard and ventilation are addressed.

**Training:**

 Train crews in proper use of pollution prevention measures and proper disposal methods

 Train employees in proper hazardous waste management

 All employees shall understand stormwater discharge prohibitions, wastewater discharge requirements, and the best management practices (BMPs).

 A training log/sign-in sheet will be used to document training

 Employees will be familiar with the sites spill control plan and/or proper spill cleanup procedures

**Spill Response and Prevention:**

 Refer to SOP 11.0 Spill Prevention, Control, and Cleanup

 Have spill cleanup materials readily available and in a known location

 Clean up spills immediately and use dry methods (absorbents)

 Properly dispose of spill cleanup material (absorbents)

 Collected waste shall be disposed of properly

**Description of SOP:**

Street and roads are a significant source of pollutants in stormwater discharges. Operation and Maintenance (O & M) practice if not conducted properly can contribute to the problem. Stormwater pollution from roadway and bridge maintenance should be addressed on a site- specific basis.

**Purpose of SOP:**

The following procedures outlined below which address street sweeping and repair, bridge and structure maintenance, and unpaved roads will reduce pollutants in stormwater.

**Suggested Protocols:**

*Street Sweeping and Cleaning*

 Maintain a consistent sweeping schedule

 Perform street cleaning during dry weather if possible

 Maintain cleaning equipment in good working condition and purchase replacement equipment as needed.

 Operate sweepers at manufacturer requested optimal speed levels to increase effectiveness.

 Keep accurate logs of the number of curb-miles swept and the amount of waste collected

 Dispose of street sweeping debris and dirt at the transfer station.

 Do not store swept material along the side of the street or near a storm drain inlet

*Street Repair and Maintenance – Pavement Marking*

 Schedule pavement marking activities for dry weather

 Transfer and load paint and hot thermoplastic away from storm drain inlets

 Provide drop cloths and drip pans in paint mixing areas

 Properly maintain application equipment

 Street sweep thermoplastic grindings. Yellow thermoplastic grindings may require special handling as they may contain lead.

 Paints containing lead or *tributyltin* are considered a hazardous waste and must be

disposed of properly

 Use water based paints whenever possible. If using water based paints, clean the application equipment in a sink that is connected to the sanitary sewer

 Properly store leftover paints if they are to be kept for the next job, or dispose of properly

*Concrete Installation and Repair*

 Schedule asphalt and concrete activities for dry weather

 Take measures to protect any nearby storm drain inlets and adjacent watercourses, prior to breaking up asphalt or concrete (e.g. place sand bags around inlets or work areas)

 Limit the amount of fresh concrete or cement mortar mixed, mix only what is needed for the job

 Store concrete material under cover, away from drainage areas. Secure bags of concrete after they are open. Be sure to keep wind-blown cement powder away form from the street, gutters, storm drains, rainfall, and runoff.

 Return leftover materials to the transit mixer. Dispose of small amounts of hardened excess concrete, gout, mortar in the trash.

 Do not wash sweepings from exposed aggregate concrete into the street or storm drain.

Collect and return sweepings to aggregate stockpile, or dispose in the trash.

 When making saw cuts in pavement, use as little water as possible and perform during dry weather. Cover each storm drain inlet completely with filter fabric or place plastic during the sawing operation and contain the slurry by placing straw bales, sandbags, or gravel dams around the inlets. After the liquid drains or evaporates, shovel or vacuum the slurry residue from the pavement or gutter and remove from site. Alternatively, a small on site vacuum may be used to pick up the slurry as this will prohibit slurry from reaching storm drain inlets.

 Wash concrete trucks offsite or in designated areas on site designed to preclude discharge of water to drainage system

*Patching, resurfacing, and surface sealing*

 Schedule patching, resurfacing and surface sealing for dry weather

 Stockpile material away from streets, gutter areas, storm drain inlets or watercourses.

During wet weather, cover stockpiles with plastic tarps or berms around them if necessary to prevent transport of materials in runoff.

 Pre-heat, transfer or load hot bituminous material away from drainage systems or watercourses.

 Where applicable, cover and seal nearby storm drain inlets (with waterproof material or mesh) and maintenance holes before applying seal coat, slurry seal, etc. Leave covers in place until job is complete and until all water from emulsified oil sealants has drained or evaporated. Clean any debris from covered maintenance holes and storm drain inlet when the job is complete.

 Prevent excess material from exposed aggregate concrete or similar treatment s from entering street or storm drain inlets. Designate an area for clean up and proper disposal of excess materials.

 Use only as much water as necessary for dust control, to avoid runoff.

 Sweep, never hose down streets to clean up tracked dirt. Use a street sweeper or vacuum truck. Do not dump vacuumed liquid in storm drains.

 Catch drips from paving equipment that is not in use with pans or absorbent material

placed under the machines. Dispose of collected material and absorbents properly.

*Equipment Cleaning Maintenance and Storage*

 Inspect equipment daily and repair and leaks. Place drip pans or absorbent materials under heavy equipment when not in use.

 Perform major equipment repairs at the public works complex, when practical.

 If refueling or repairing vehicles and equipment must be done onsite, use a location away from storm drain inlets and watercourses.

 Clean equipment including sprayers, sprayer paint supply lines, patch and paving equipment, and mud jacking equipment at the end of each day. Clean in a sink or other area (e.g. vehicle wash area) that is connected to the sanitary sewer.

*Bridge and Structure Maintenance Paint and Paint Removal*

 Transport paint and materials to and from job sites in containers with secure lids and tied down to the transport vehicle.

 Do not transfer or load paint near storm drain inlets or watercourses.

 Test and inspect spray equipment prior to starting to paint. Tighten all hoses and connections and do not overfill paint container.

 Plug nearby storm drain inlets prior to starting painting where there is significant risk of a spill reaching storm drains. Remove plugs when the job is completed.

 If sand blasting is used to remove paint, cover nearby storm drains inlets prior to

starting work.

 Dispose of unused paint at appropriate waste facilities.

*Repair Work*

 Prevent concrete, steel, wood, metal parts, tools, or other work materials from entering storm drains or watercourses.

 Thoroughly clean up the job site when the repair work is completed.

 When cleaning guardrails or fences follow the appropriate surface cleaning methods

*Unpaved Roads and Trails*

 Stabilize the exposed soil areas to prevent soil form eroding during rain events. This is particularly important on steep slopes

 For roadside areas with exposed soils, the most cost-effective choice is to vegetate the

area, preferably with a mulch or binder that will hold the soils in place while the vegetation is establishing. Native vegetation should be used if possible.

 If vegetation cannot be established immediately, apply temporary erosion control

mats/blankets; straw or gravel as appropriate.

 If sediment is already eroded and mobilized in the roadside areas, temporary control should be installed. These may include: sediment control fences, fabric-covered triangular dikes, gravel-filled burlap bags, bio-bags, or hay bales staked in place

**Training:**

 All employees shall be trained regarding proper street sweeping operation and street repair and maintenance

 All employees and subcontractors shall be instructed on measures to reduce the

stormwater impacts of roadway/bridge maintenance are being followed.

 Engineering staff and/or consulting A/E firms will be required to address storm water quality in new bridge designs or existing bridge retrofits

 All employees shall be trained on the proper procedures

 A training log/sign-in sheet will be used to document training

 Employees will be familiar with the sites spill control plan and/or proper spill cleanup procedures

**Spill Response and Prevention:**

 Refer to SOP 11.0 Spill Prevention, Control, and Cleanup

 Have spill cleanup materials readily available and in a known location

 Clean up spills immediately and use dry methods (absorbents)

 Properly dispose of spill cleanup material (absorbents)

 Collected waste shall be disposed of properly

**Description of SOP:**

The stormwater conveyance system collects and transports urban runoff that may contain pollutants. Maintaining catch basins, stormwater inlets, and other stormwater conveyance structures on a regular basis will remove pollutants, prevent clogging, of the downstream conveyance system, restore catch basin’s sediment trapping capacity, and ensure the system functions properly hydraulically to avoid flooding.

**Purpose of SOP:**

The following procedures are to be implemented for the stormwater conveyance systems within the City of Harlingen.

**Suggested Protocols:**

*Catch Basins/Inlet Structures*

 Municipal staff should regularly inspect facilities to ensure the following:

o Immediate repair of any deterioration threatening structural integrity

o Catch basins should be cleaned as frequently as needed

o Stenciling of catch basins and inlets

 Clean catch basins, storm drain inlets and other conveyance structures in high pollutant load areas just before the wet season to remove sediments and debris accumulated during the summer.

 Conduct inspections more frequently during the wet season for the problem areas

where sediment or trash accumulates more often. Clean and repair as needed.

 Keep accurate logs of the number of catch basins cleaned and record the amount of waste collected.

 Dewater the wastes with outflow into the sanitary sewer. If discharge to the sanitary

sewer is not allowed, water should be pumped or vacuumed to a tank and properly disposed of.

*Storm Drain Conveyance System*

 Create an inspection and cleaning schedule for the municipal storm drain system, including storm water detention ponds, energy dissipaters, weir and spillway.

 Preventive maintenance and inspection will be conducted at least one time per year for cracks, leaks, and other conditions that could cause breakdowns in the system.

 Locate reaches of storm drain with deposit problems and develop a flushing schedule that keeps the pipes clear of excessive buildup

 Collect flushed effluent and pump to the sanitary sewer for treatment or dispose of at

transfer station.

 Document inspections, cleanings and repairs and maintain complete records in a record keeping system

 Proper erosion and sediment control practices shall be used when performing repairs and maintenance

*Open Channels and Outfalls*

 Locate all outfalls in the municipality and create an inspection schedule

 Preventive maintenance practices for outfalls shall be done with inspections at least one time per year for cracks leaks, and other conditions that could cause a breakdown in the system.

 Repair of defective structures identified during inspections shall be done as soon as possible

 Document inspections and repairs at outfalls in a record keeping system.

 Where excessive erosion is evident at outfalls measures will be taken to correct the problem

 Open Channels shall be inspected for illegal dumping, trash, debris, and overgrown grass on a regular basis

 Post “No Dumping” signs in problem areas with a phone number for reporting dumping

and disposal. Signs should also indicate fines and penalties for illegal dumping.

 Document inspections for open channels in a record keeping system

*Maintenance and Inspection*

 Two person teams may be required to clean and inspect catch basins, storm inlets, etc.

The use of Vactor trucks may be required for cleaning of catch basins and inlets.

 Arrangements must be made for proper disposal of collected wastes.

**Training:**

 Train crews in proper maintenance activities, including record keeping and disposal

 Only properly trained individuals are allowed to handle hazardous materials/wastes

 All employees shall understand stormwater discharge prohibitions, wastewater discharge requirements, and the best management practices (BMPs).

 A training log/sign-in sheet will be used to document training

 Employees will be familiar with the sites spill control plan and/or proper spill cleanup procedures

**Spill Response and Prevention:**

 Refer to SOP 11.0 Spill Prevention, Control, and Cleanup

 Have spill cleanup materials readily available and in a known location

 Clean up spills immediately and use dry methods (absorbents)

 Properly dispose of spill cleanup material (absorbents)

 Collected waste shall be disposed of properly

**Description of SOP:**

Landscape maintenance activities include vegetation removal; herbicide and insecticide application; fertilizer application; mowing, trimming, and weeding. Vegetation control typically involves a combination of chemical (herbicide) applications and mechanical methods (mowing). All of these maintenance practices have the potential to contribute pollutants to the storm drain system.

**Purpose of SOP:**

The following procedures are to minimize the discharges of pesticides, herbicide and fertilizers to the storm drain system and the Arroyo Colorado and prevent the disposal of landscape waste into the storm drain system by collecting and properly disposing of clippings and cuttings.

**Suggested Protocols:**

*Mowing, Trimming, and Weeding*

 Whenever possible use mechanical methods of vegetation removal (e.g. mowing with tractor-type or push mowers, hand cutting with gas or electric powered weed trimmers) rather than applying herbicides. Use hand weeding where practical.

 Avoid loosening the soil when conducting mechanical or manual weed control, this

could lead to erosion. Use mulch or other erosion control measures when soils are exposed.

 Performing mowing at optimal times. Mowing should not be performed if significant rain events are expected.

 Mulching mowers may be recommended for certain flat areas.

 Collect lawn and garden clippings, pruning waste, tree trimmings, and weeds. Chip if necessary, and compost or dispose of at transfer station.

 Use a street sweeper or blowers to collect clippings and debris instead of leaving it on the street or allow it to enter storm drainage systems.

 Clippings should be blown back onto the grass and kept off of streets and waterways.

 Never refuel or change the mower oil near storm drains or waterways.

*Herbicides, Fertilizers, and Pesticides*

 Follow all federal, state, and local laws and regulations governing the use, storage, and disposal of fertilizers, herbicides, and pesticides.

 Use pesticides and herbicides if there is an actual need not on a regular preventive schedule

 Do not use pesticides, herbicides, and fertilizers if rain is expected. Apply pesticides and herbicides only when wind speed are low (less than 5 mph)

 Do not mix or prepare pesticides or herbicides for application near storm drains

 Prepare the minimum amount of pesticides and herbicides needed for the job and use the lowest rate that will effectively control the problem

 Calibrate fertilizer and pesticide application equipment to avoid excess application

 Sweep pavement and sidewalk if fertilizer is spilled on the these surfaces before applying irrigation water

 Triple rinse containers, and use rinse water as product. Dispose of unused pesticides

and herbicides as hazardous waste

 Dispose of empty pesticide and herbicide containers according to the instruction on the container label.

**Training:**

 Train crews in proper use of pesticides, herbicides, and fertilizer application techniques to prevent pollution

 All employees that handle pesticides, herbicides, and fertilizers shall be familiar with the

most recent material safety data sheet (MSDS) files

 All employees shall understand stormwater discharge prohibitions, wastewater discharge requirements, and the best management practices (BMPs).

 A training log/sign-in sheet will be used to document training

 Employees will be familiar with the sites spill control plan and/or proper spill cleanup procedures

**Spill Response and Prevention:**

 Refer to SOP 11.0 Spill Prevention, Control, and Cleanup

 Have spill cleanup materials readily available and in a known location

 Clean up spills immediately and use dry methods (absorbents)

 Properly dispose of spill cleanup material (absorbents)

 Collected waste shall be disposed of properly

**Description of SOP:**

Erosion and sediment control are an important part of any construction when soils will be disturbed. Lack or improper use of erosion and sediment control techniques can lead to tracking of sediments on to roadways and into waterways such as the Arroyo Colorado.

**Purpose of SOP:**

The following procedures are for the use of erosion and sediment control devices.

**Suggested Protocols:**

 Use erosion control techniques or devices to stabilize disturbed areas

 Use effective site planning to avoid sensitive areas

 Keep land disturbance to a minimum

 Inspect and maintain erosion control devices

 Ensure that all erosion control devices are installed properly

 Install erosion control blankets when seeding drainage ways

 Protect disturbed areas from storm water runoff by using stabilizers such as mulch.

 Assign responsibility for maintaining erosion control devices

 Stabilize soils by mulching and/or seeding when soils are exposed for more than one week during the dry season, and two days during the rainy season.

**Training:**

 Train crews in proper use of erosion and sediment control techniques

 All employees shall understand stormwater discharge prohibitions, wastewater discharge requirements, and the best management practices (BMPs).

 A training log/sign-in sheet will be used to document training

 Employees will be familiar with the sites spill control plan and/or proper spill cleanup procedures

**Spill Response and Prevention:**

 Refer to SOP 11.0 Spill Prevention, Control, and Cleanup

 Have spill cleanup materials readily available and in a known location

 Clean up spills immediately and use dry methods (absorbents)

 Properly dispose of spill cleanup material (absorbents)

 Collected waste shall be disposed of properly