Municipal Manual

1 Introduction

This *Municipal Urban Runoff Requirements Manual* (Manual) details requirements of City Staff of the City of San Marcos (City) as part of the City's Jurisdictional Runoff Management Program (JRMP).

1.1 How to Use this Manual

This Manual is provided to assist City Staff in complying with the City's Urban Runoff Management and Discharge Control Regulations. Information is provided to assist City Staff in determining their applicability to the City's requirements and it details the requirement that applicable City Staff must comply with.

1.2 What is Urban Runoff and Stormwater?

The terms, urban runoff and stormwater, are commonly used in discussions about the quality of water in urbanized areas. These terms are often used interchangeably and, therefore, are confusing. Urban runoff refers to water that originates in urbanized areas. Sources of urban runoff include precipitation, industry discharges, leaks, washing, irrigation, and natural springs. Stormwater refers to water generated from precipitation during a storm event. However, in some cases inconsistent with its definition, stormwater is used to refer to or to include urban runoff not exclusively resulting from precipitation. Inversely, the definition of non-stormwater is water that is not the direct product of storm precipitation such as water from industry discharges, leaks, washing, irrigation, and springs. Therefore, urban runoff is composed of both stormwater and non-stormwater.

Regardless of the terminology, water located in urbanized areas and the quality of that water is of the utmost importance. The water in urbanized areas drains to the creeks, lakes, lagoons in the City, and ultimately to the ocean. Many people recreate and fish in these waters, and still others enjoy the plants and wildlife that these aquatic habitats support. All water that runs off homes and businesses in the City drain to the water bodies listed above. Spills, trash, and pollutants wash from properties and roads into the public drainage system, which flows directly to these water bodies.

2 Requirements of Municipal Areas and Activities

This Manual establishes tiered BMP requirements for municipal areas and activities. All City owned facilities and activities are subject to meeting the requirements of this Manual. The tier of applicable BMP requirements for a specific municipal area or activity is dependent upon the threat to water quality prioritization of high or low for the area or activity. The method of prioritization determination is described in Section 4.1.

It should be noted that all municipal areas and activities will have the requirements of BMP implementation outlined in this chapter regardless if the operations and maintenance are performed by City staff or by contract services.

2.1 General Requirements

Municipal Dischargers are required to comply with two interrelated sets of directives; (1) compliance with applicable discharge prohibition requirements, and (2) implementation of BMPs to prevent non-stormwater discharges and to reduce contaminants in urban runoff. All municipal facilities are subject to the applicable BMP requirements summarized in this section. Failure to comply with applicable discharge prohibitions is a violation of the San Marcos Municipal Code and may be considered evidence

of an inadequate BMP program, although BMPs can also be determined to be inadequate prior to the occurrence of actual discharges.

2.1.1 Discharge Prohibitions

The City prohibits all non-stormwater discharges unless a discharge is authorized by a separate NPDES permit or qualifies as a conditional discharge. Non-stormwater discharges are runoff flows from any type of activity other than weather caused precipitation or naturally occurring groundwater. Typical non-stormwater discharges include, but are not limited to discharges from:

- Irrigation Runoff
- Washing Activities, including hosing and power-washing sidewalks, plaza areas, driveways, etc.
- Vehicle Washing
- Equipment Washing
- Air Conditioning Condensation
- Sanitary Sewer Overflows

Without exception, discharges of both stormwater and non-stormwater to the Stormwater Conveyance System or Receiving Waters are prohibited if the discharge contains pollutants that have not been reduced to the Maximum Extent Practicable (MEP). This prohibition establishes a general BMP standard that must be met by all dischargers prior to the occurrence of stormwater or allowable non-stormwater discharges. In essence, it requires the application of BMPs to prevent discharges in violation of the Municipal Code.

2.1.2 Conditional Non-Stormwater Discharges

The following categories of non-stormwater discharges are conditionally allowed by the City of the discharge meets the criteria described below. If a discharge does not meet the criteria, then it is prohibited by the city.

2.1.2.1 Discharges Associated with Separate NPDES Permit

The Regional Water Quality Control Board (RWQCB) may permit a discharger to discharge water to the City's Stormwater Conveyance System, as long as the City does not determine that the discharge is a source of pollutants. For scheduled discharges, the discharger shall notify City Staff at least 30 days prior to the scheduled date of discharge.

Pumping and Groundwater

The following non-stormwater discharges are allowed if the discharge has coverage under NPDES Permit No. CAG919002 (Order No. R9-2008-0002):

- Uncontaminated pumped ground water
- Discharges from foundation drains (i.e., If the system is located at or below the groundwater table to extract groundwater)
- Water from crawl space pumps
- Water from footing drains

Water Line Flushing and Breaks

The City considers non-stormwater discharges associated with water line flushing or breaks as an illicit discharge, unless the discharge has coverage under NPDES Permit No. CAG 679001 (Order No. R9-2010-0003 or subsequent order). In addition, discharges from recycled or reclaimed water lines are illicit, unless covered under a separate NPDES Permit.

2.1.2.2 Discretionary Discharge

The following discharges are not prohibited unless they are identified by the City or the RWQCB as pollutant sources to receiving waters:

- Diverted stream flows
- Rising ground waters
- Uncontaminated ground water infiltration to Stormwater Conveyance System s
- Springs
- Flows from riparian habitats and wetlands
- Direct discharges from potable water sources
- Direct discharges from foundation drains
- Direct discharges from footing drains

2.1.3 BMP Implementation

As previously stated, for all discharges of stormwater and non-stormwater to the City's Stormwater Conveyance System or Receiving Waters, pollutant must be reduced to the MEP.

MEP is a standard that is commonly used by the RWQCB in requiring BMP implementation for municipalities. In general, it is defined as the implementation of all effective, technically and economically feasible BMPs. The BMPs that are generally emphasized to meet MEP are pollution-prevention and source-control BMPs that are proactive BMPs that you implement to avoid discharging or to avoid pollutants ever entering discharge. Treatment BMPs are then implemented, when appropriate, to serve as backups to remove any pollutants from discharges.

Because discharges are prohibited unless MEP is achieved, this general BMP standard must be met by all dischargers in the City, including Residential Dischargers. In general, a discharger can be generalized as any person or entity engaged in activities or operations, or owning or operating facilities that are exposed to precipitation that drains to the City's Stormwater Conveyance System or Receiving Waters, or that discharges any other waters or materials to the City's Stormwater Conveyance System or Receiving Waters. Therefore, basically if you own, rent, or operate any property in the City, or if you conduct any activities outdoors within the City, you are most likely a discharger.

To assist dischargers the City has developed minimum BMP requirements. These requirements are standards themselves and dischargers are required to implement, at a minimum, these BMPs or equivalent measures, methods, or practices. The City recognizes that the proper selection of BMPs depends on numerous factors that are specific to individual sites and activities, and therefore does not advocate or require the use of particular practices. Rather, the City has established these minimum BMP standards that the City has determined are the minimum necessary measures to prevent discharges of pollutants to its Stormwater Conveyance System (including streets, curbs, gutters and channels) and receiving waters. The sole responsibility for selecting and implementing BMPs that are adequate to comply with the requirements of the Ordinance and this Manual lies with the discharger. Therefore, the discharger may select which BMPs are appropriate to implement, in order to meet the City's minimum BMP requirements. Furthermore, if MEP has not been met by meeting the minimum BMP requirements prescribed by the City, the discharger must implement additional BMPs until MEP is achieved.

The City may require the application of specific BMPs, additional BMPs, and/or structural controls, in addition to the minimum BMP requirements for a discharger or a group of discharges, if MEP has not been met.

The remainder of this Manual provides the City's minimum BMP requirements to assist municipal facilities and activities in meeting the MEP standard. The City's requirements applicable to municipal areas and activities consists of the following four main tiers:

- Requirements for all Dischargers
- Requirements for all municipal areas and activities
- Requirements for high priority municipal areas and activities
- Requirements for special areas and activities (e.g. non-emergency firefighting flows, use of pesticides, herbicides and fertilizers, and maintenance of the Stormwater Conveyance System)

2.2 BMP Requirements for All Dischargers

The following are BMP requirements for all discharges in the City. Each discharger, and therefore, all Residential Dischargers, is required to implement these BMPs, or equivalent measures, methods, or practices.

Eroded Soils

Prior to the rainy season, dischargers must remove or secure any significant accumulations of eroded soils from slopes previously disturbed by clearing or grading, if those eroded soils could otherwise enter the Stormwater Conveyance System or Receiving Waters during the rainy season. Pollution Prevention Dischargers shall implement those stormwater pollution prevention practices that are generally recognized in that discharger's industry or business as being effective and economically advantageous.

Prevention of Illegal Discharges

Illicit connections must be eliminated (even if the connection was established pursuant to a valid permit and was legal at the time it was constructed), and illegal discharge practices eliminated.

Slopes

Completed slopes that are more than five feet in height, more than 250 square feet in total area, and steeper than 3:1 (run-to-rise) that have been disturbed at any time by clearing, grading, or landscaping, shall be protected from erosion prior to the first rainy season following completion of the slope, and continuously thereafter.

Storage of Materials and Wastes

All materials and wastes with the potential to pollute urban runoff shall be stored in a manner that either prevents contact with rainfall and stormwater, or contains contaminated runoff for treatment and disposal.

Use of Materials

All materials with the potential to pollute urban runoff (including but not limited to cleaning and maintenance products used outdoors, fertilizers, pesticides and herbicides, etc.) shall be used in accordance with label directions. No such material may be disposed of or rinsed into Receiving Waters or the Stormwater Conveyance System.

3 Minimum BMP Requirements for all Municipal Areas and Activities

This section requires basic minimum BMPs that are applicable to all municipal areas and activities unless otherwise noted. The purpose of this section is to establish a baseline of reasonable, achievable, "common sense" standards that must be met by all municipal areas and activities. Additionally, more prescriptive BMPs for specific facilities, activities, and locations, which are determined to be a high threat to water quality, are provided in Chapters 4, 5 and 6 of this Manual.

The following BMP requirements are described in this section, which are applicable to all municipal areas and activities:

- Employee Training
- Stormwater Management Plans (SWMPs) and Stormwater Pollution Prevention Plans (SWPPPs)
- Storm Drain Tileage and Signing
- Annual Review of Facilities and Activities
- Pollution Prevention
- Materials and Waste Management
- Vehicles and Equipment
- Outdoor Areas
- Good Housekeeping
- Preventative Maintenance

3.1 Employee Training

The City is required to implement these BMPs, or equivalent measures, methods, or practices.

- The City shall provide training at least annually to all employees with responsibility for the design, selection, implementation, and/or operations and maintenance of BMPs. Integration with other existing training programs is encouraged
- Documentation of training shall be maintained onsite at the location(s) where operations or activities are conducted, and shall be provided on request to Authorized Enforcement Officials or Staff
- Training shall be adequate to ensure compliance with the standards established in this Manual and the City Municipal Code. Continued or significant non-compliance by facility employees with any condition of this Manual or the City Municipal Code may be deemed evidence of an inadequate employee-training program

BMP Description

Employee training is a crucial component of urban runoff quality protection as it informs all municipal personnel of the components and goals of urban runoff rules and practices. Employee-training programs should at least address the following topics:

- Good Housekeeping
- Preventative Maintenance
- Spill Prevention and Response
- Material Management Practices.

Training needed for the BMP implementation is easily combined with safety meetings and other forms of employee training typically already in place.

The following are guidelines for building an employee-training program:

- Good Housekeeping. Training sessions should stress the importance of a clean and orderly work environment for the prevention of urban runoff contamination. Items of focus are as follows:
    - Fully discuss the various components of BMP implementation such as routine inspections, clean ground surfaces, waste disposal, equipment, etc
    - Stress the importance of quickly and completely cleaning up spilled materials. All employees of a business should be educated to understand that when spilled materials

are left to enter the soil or to coat impervious surfaces, spill areas can pollute subsequent storm runoff and harm Receiving Water quality
    - Make clear the location and usage of spill response and grounds maintenance equipment. Example equipment includes brooms, vacuums, sorbents, foams, neutralizing agents, etc.
    - Discuss updated procedures and report on the progress of practicing good housekeeping at every meeting
    - If applicable, provide instruction on manual operation of valves, drums, and containers and frequency of checking these devices for leaks and spills
    - Outline a regular schedule for housekeeping activities to allow the determination of progress being made

- Preventative Maintenance. The maintenance program needs to be continually reviewed and updated by employees responsible for these activities. These responsible employees should be trained to fully understand and implement the procedures of preventive maintenance measures.
- Spill Prevention and Response. All municipal employees must understand what to do if a spill occurs. The following items should be focused upon during initial employee training and subsequent refresher courses:
    - Identify potential spill materials, locations and drainage paths. Discuss past spills and causes. By understanding the likely spill types, locations and the drainage routes along which the spilled materials will move, employees will gain an appreciation of the nature of the urban runoff pollution problem and can better react to accidents
    - Stress the need to report spills to the appropriate individuals within the City, and authorities if applicable by regulations. Such action must be strongly encouraged, not discouraged, by the site managers to cut costs on wasted materials and to protect the environment
    - Specify material handling procedures and storage requirements, especially on potential pollutants that might be exposed to rainfall. Employees should know the ramifications of improper handling procedures
    - Train employees and frequently review the spill response procedures. Spill response procedures are only useful if fully understood by the employees
    - Encourage employees to suggest and discuss improved methods of materials handling and transfer that further minimize the risk of future spills

- Materials Management Practices. The nature, handling, and storage of materials capable of impacting water quality should be well understood by all employees of a business
    - Identify the type and location of all toxic and hazardous substances stored, handled, and produced onsite
    - Detail major groups of significant materials that may impact water quality. In order for a business to prevent urban runoff pollution, the potential for damage to water quality and the ecosystem must be well understood and appreciated by the employees. By heightening awareness of potential problems, steps taught to stop water pollution will be treated not as an exercise but as an important step toward maintaining a well-run facility
    - Discuss handling procedures for significant materials
    - Note the need to neatly organize materials for storage

- Stress the requirement to prohibit unpermitted, non-stormwater discharges into the Stormwater Conveyance System and Receiving Waters

Discussions of these issues should be routine at employee meetings. It is recommended that all BMPs implemented for the City should be discussed at employee meetings on a monthly basis.

3.2 Stormwater Management Plans (SWMPs) and Stormwater Pollution Prevention Plans (SWPPPs)

The City is required to implement these BMPs, or equivalent measures, methods, or practices.

- The development and implementation of SWMPs and SWPPPs are encouraged for municipal areas and activities

BMP Description

SWMPs are an important tool for planning, implementing, and demonstrating compliance with BMP requirements. However, SWPPPs may be required for facilities where MEP has not been met, for those demonstrating significant or continued noncompliance, or those determined to be a significant source of pollutants. The City is responsible for demonstrating compliance with all applicable provisions of the City Municipal Code and this Manual, regardless of whether or not a SWPPP is utilized.

3.3 Storm Drain Tileage and Signing

The City is required to implement these BMPs, or equivalent measures, methods, or practices.

- The use of tiles or other labeling of storm drain inlets is encouraged, but not required, for municipal areas and activities

BMP Description

Storm drain tiles and signs are highly visible source controls that are typically placed directly adjacent to storm drain inlets. They contain a brief statement that prohibits the dumping of improper materials into the Stormwater Conveyance System. Graphical icons, either illustrating anti-dumping symbols or images of Receiving Water fauna, are effective supplements to the anti-dumping message. Naming the Receiving Water also has proven to increase the effectiveness of this signage by making it more personal (i.e. “No Dumping! Flows to San Marcos Creek,”).

While not required, the use of tiles, signs, or other labeling as a general preventive measure is highly recommended since they provide an extra measure of protection in addition to other BMPs utilized.

The City does not allow the use of storm drain stenciling because stencils are generally less durable than other methods of labeling. In contrast, more permanent methods such as tiles or imprints require little maintenance and are legible for many years.

3.4 Annual Review of Facilities and Activities

The purpose of this requirement is to actively identify and eliminate connections and practices that might otherwise lead to discharge violations. This is especially important for facilities and activities not subject to routine inspection by City staff. The City is required to implement these BMPs, or equivalent measures, methods, or practices.

- The City shall review their facilities, activities, operations, and procedures at least annually to detect illicit connections and illegal discharges

- Illegal connections, as defined in the San Marcos Municipal Code, must be eliminated (even if the connection was established pursuant to a valid permit and was legal at the time it was constructed), and illegal discharge practices eliminated
- Corrective training shall be provided as needed (and documented in training records) whenever an illegal disposal practice is discovered
- The City shall review their facilities, activities, operations, and procedures, as determined necessary, to ensure adequate BMP implementation

BMP Description

Visual inspections are crucial to preventing or identifying problems in a timely manner. Qualified facility personnel should be identified to inspect designated equipment and areas of the facility at appropriate intervals. An inspection schedule should be developed and kept up-to-date.

Thorough periodic inspections must be conducted to ensure adequate BMP implementation and compliance with requirements. The Stormwater Conveyance System, detention and treatment systems, the loading and unloading areas, the materials and products storage areas, and the equipment maintenance and washing areas, if applicable, should be inspected on a quarterly basis during the dry season (May 1 to September 30) and on a monthly basis during the rainy season of the San Marcos area (October 1 to April 30).

Areas contributing to stormwater discharge within a facility should be visually inspected for evidence of, or the potential for, pollutants entering the drainage ways. Measures to reduce pollutant loadings shall be inspected and evaluated to determine whether they are still adequate and functioning properly. All drainage facilities should be inspected to ensure that they are fully operational and well maintained. An inspection of equipment needed to implement the BMPs, such as spill response equipment, should also be conducted.

Based on the results of the inspection, potential pollutant sources should be identified and the necessary pollution prevention measures and controls should be implemented in a timely manner.

3.5 Pollution Prevention

Municipal facilities and activities are required to implement these BMPs, or equivalent measures, methods, or practices.

- The City shall implement those urban runoff pollution prevention practices that are generally recognized for that facility's activity as being effective and economically advantageous

BMP Description

Pollution prevention is defined as practices and processes that reduce or eliminate the generation of pollutants. Recycling, use of different types of products or chemicals, and altering operational procedures are all types of pollution prevention practices that can reduce the amounts of pollutants generated by a municipality. Under many circumstances, those pollution prevention practices that are commonly implemented can provide benefits to the municipality in addition to pollution prevention, such as cost savings or operational efficiency.

3.6 Materials and Waste Management

The City is required to implement these BMPs, or equivalent measures, methods, or practices.

- The following conditions apply to the storage, management, and disposal of hazardous materials and wastes at City areas and activities:

- Hazardous materials and wastes shall be stored, managed, and disposed in accordance with applicable federal, state, and local laws and regulations
- Hazardous materials must be stored off the ground. Where practicable, overhead coverage shall be provided for all outside hazardous materials or waste storage areas. If overhead coverage is not available, stored materials shall be covered with an impervious material (e.g., a tarp)
- Drums and other containers shall be kept in good condition, and shall be kept securely closed when not in use
- Materials and equipment necessary for spill response shall be maintained and kept readily accessible, and all employees involved in the storage, management, or disposal of hazardous materials or wastes must be trained in their proper use
- Significant spills shall be reported promptly to the City's Stormwater Manager. Significant spills are those which discharge, or have the potential to discharge, contaminants directly or indirectly to the Stormwater Conveyance System or Receiving Waters. Spills that have been completely contained and cleaned up onsite are not considered significant unless they pose a threat to human health or safety
- All spills that could reach storm drains, the sanitary sewer, rivers, lakes, streams, coastal waters and other ambient water bodies must be reported immediately to the City Stormwater Manager and appropriate agencies, which may include the RWQCB and the U.S. Environmental Protection Agency (EPA) regional offices
- All hazardous materials present in each facility should be clearly labeled. All hazardous materials containers should be labeled to show significant information such as the name and type of the substance, health hazards, suggestions for handling, and first aid information. When applicable the information must be consistent with the Material Safety Data Sheet (MSDS) for each substance. All materials requiring special handling, storage, use, and disposal should be clearly marked as such

- The following conditions apply to the storage of solid waste at municipal areas and activities:
  - Trash storage and disposal areas shall be kept clean and free of debris
  - Dumpsters and other containers shall be maintained in good condition, and shall be kept securely closed when not in use
  - Materials and equipment necessary for the cleanup of trash and debris shall be maintained and kept readily accessible

- The following conditions apply to the loading and unloading of materials with pollution potential at municipal areas and activities:
  - Where practicable, loading/unloading of materials shall only be allowed in designated areas
  - Spills and leaks shall be promptly cleaned up and the generated wastes disposed of properly
  - Loading/unloading areas shall be periodically inspected, and accumulations of debris, litter, waste, or other materials removed
  - Materials and equipment necessary for spill response shall be maintained and kept readily accessible and all employees conducting loading/unloading activities trained in their proper use

- Significant spills shall be reported promptly to the City's Stormwater Manager. Significant spills are those which discharge, or have the potential to discharge, contaminants directly or indirectly to the Stormwater Conveyance System or Receiving Waters. Spills that have been completely contained and cleaned up onsite are not considered significant unless they pose a threat to human health or safety
- All spills that could reach storm drains, the sanitary sewer, rivers, lakes, streams, coastal waters and other ambient water bodies must be reported immediately to the City Stormwater Manager and appropriate agencies, which may include the RWQCB and the U.S. Environmental Protection Agency (EPA) regional offices

BMP Description

Spills of liquids or solid materials onto ground surface poses great risk to urban runoff quality. Spills are most likely to occur during the transportation, loading, and unloading of materials or products in and out of a facility. To reduce the risk of having a spill, all personnel involved with any stage of transportation, loading, and unloading activities must be trained in preventative measures to avoid spills and in spill response procedures in the event of an accident. The City suggests the implementation of the following steps:

- Potential Spill Areas. The loading/unloading areas have the highest potential for spills that may contaminate urban runoff. The potential for spills in these areas should be thoroughly discussed in employee meetings and training sessions.
- Material Handling Procedures and Storage. Only personnel trained and qualified to load and unload materials should be allowed to do so. All raw materials, intermediate products, finished products, byproducts, and waste products should be stored properly to avoid any potential accident or spill that could impact stormwater and/or ambient water quality.
- Spill Response Procedures and Equipment. Where appropriate, the City should develop and implement a set of procedures to be followed in the event of a spill. The development should include a chain of command and a set of notification, response, and clean-up procedures. A group of personnel should be organized and trained to respond to a spill. Equipment needed to handle the spill should be operational and available. Personnel responsible for spill response should be trained on the operation of the equipment.
- Documentation. All significant spills and leaks should be documented to aid the facility operator in examining existing spill prevention and response procedures and in developing any additional procedures necessary to prevent future spills.

3.7 Vehicles and Equipment

The term, motor vehicle, is defined in the Definitions section of this Manual. In the context of these requirements, it includes all categories of vehicles contained in that definition in addition to airplanes. The City is required to implement these BMPs, or equivalent measures, methods, or practices.

- The following conditions apply to the fueling of vehicles and equipment at all municipal areas and activities:
    - Precautions shall be taken to prevent spills and leaks during fueling activities
    - Materials and equipment necessary for spill response shall be maintained and kept readily accessible, and staff conducting fueling activities should be instructed in their proper use
    - Significant spills shall be reported promptly to the City's Stormwater Manager. Significant spills are those which discharge, or have the potential to discharge,

contaminants directly or indirectly to the Stormwater Conveyance System or Receiving Waters. Spills that have been completely contained and cleaned up onsite are not considered significant unless they pose a threat to human health or safety
    - All spills that could reach storm drains, the sanitary sewer, rivers, lakes, streams, coastal waters and other ambient water bodies must be reported immediately to the City Stormwater Manager and appropriate agencies, which may include the RWQCB and the U.S. Environmental Protection Agency (EPA) regional offices
- The following conditions apply to the maintenance and repair of vehicles and equipment at all municipal areas and activities:
    - Precautions shall be taken to prevent spills and leaks during maintenance and repair activities
    - Materials and equipment necessary for spill response shall be maintained and kept readily accessible, and staff conducting maintenance and repair activities should be instructed in their proper use
    - Significant spills shall be reported promptly to the City's Stormwater Manager. Significant spills are those which discharge, or have the potential to discharge, contaminants directly or indirectly to the Stormwater Conveyance System or Receiving Waters. Spills that have been completely contained and cleaned up onsite are not considered significant unless they pose a threat to human health or safety
    - All spills that could reach storm drains, the sanitary sewer, rivers, lakes, streams, coastal waters and other ambient water bodies must be reported immediately to the City Stormwater Manager and appropriate agencies, which may include the RWQCB and the U.S. Environmental Protection Agency (EPA) regional offices
- The following conditions apply to the washing of vehicles and equipment at all municipal areas and activities:
    - Storm drain inlets located within or down gradient of wash areas shall be covered or otherwise protected to prevent the entry of washwater or rinse water
    - Where practicable, the introduction of pollutants (soaps, degreasers, etc.) to washwater shall be reduced or eliminated

The discharge or disposal of untreated washwater to the Stormwater Conveyance System or Receiving Waters is prohibited.

3.8 Outdoor Areas

The City is required to implement these BMPs, or equivalent measures, methods, or practices.

- The following condition applies to rooftop areas at municipal areas and activities:
    - Materials that may contaminate stormwater shall not be stored on rooftops unless adequate precautions have been taken to prevent their contact with precipitation and stormwater
- The following conditions apply to parking areas at municipal areas and activities:
    - Parking areas shall be periodically cleaned using dry methods (manual sweeping, street sweepers, etc.). Wet methods shall only be used where adequate precautions have been taken to prevent the entry of washwater and other contaminants into the Stormwater Conveyance System or Receiving Waters

- Prior to any improvement or expansion project, parking areas designed to accommodate 100 or more vehicles shall be evaluated to determine the feasibility of installing structural devices, including treatment controls. Such devices shall be installed if practicable. Installed controls shall be inspected and maintained as necessary to ensure their continued proper functioning

- The following conditions apply to landscaping and groundskeeping conducted at all municipal areas and activities:

  - Precautions shall be taken to prevent spills, leaks, and over application of chemical products during landscaping and groundskeeping activities
  - Precautions shall be taken to prevent over irrigation of landscaped areas
  - Pesticides, herbicides, fertilizers, and other chemical products shall be used in accordance with label directions and manufacturer recommendations. These products shall not be disposed to streets or gutters, but shall be collected and properly disposed
  - Grounds and landscaped areas shall be periodically inspected. Litter, debris, organic matter (leaves, cut grass, etc.), and other materials with the potential to contaminate urban runoff shall be collected and properly disposed
  - Materials and equipment necessary for spill response shall be maintained and kept readily accessible, and employees trained in their proper use
  - Mechanical vegetation control measures include, mowing grass, brush and tree trimming and the application of herbicides. Vegetation controls are most useful in areas of steep slopes adjacent to roadside channels, or within roadside swales. As a source control BMP it is suggested that plants be compatible with semi-arid conditions and native to Southern California. This will reduce the amount of trimming and mowing necessary. Cutting less frequently on roads that do not pose a threat to passing vehicles or pedestrians. Using hand held cutting tools when possible to more adequately manage the waste and to conduct maintenance at optimal seasonal times
  - Significant spills shall be reported promptly to the City's Stormwater Manager. Significant spills are those which discharge, or have the potential to discharge, contaminants directly or indirectly to the Stormwater Conveyance System or Receiving Waters. Spills that have been completely contained and cleaned up onsite are not considered significant unless they pose a threat to human health or safety

3.9 Good Housekeeping

Good housekeeping practices employ simple common sense in creating and maintaining a clean, orderly environment that reduces the risk of accidents and Urban Runoff contamination. Good housekeeping practices have been encompassed by the above listed requirements. Because of their importance these good housekeeping measures are further described below. These following descriptions do not describe requirements of the City but are instead intended as additional guidance for the more effective implementation of the other BMPs to satisfy other requirements.

- Routine Housekeeping Inspections. Locations with higher risk of impacting stormwater quality (e.g., stormwater outfalls, loading and unloading areas, materials, products and wastes storage areas, equipment and vehicle maintenance and cleaning areas) should be inspected frequently, such as on a daily basis. Other areas of lower risk should be checked less frequently, such as weekly. Inspections should focus on leaks or conditions that could lead to discharges of pollutants to the Stormwater Conveyance or Receiving Waters.

- Maintenance of Clean Ground Surfaces. Sweeping of all paved areas exposed to precipitation or stormwater should be conducted on a regular basis. Litter controls of all exposed surface should also be conducted on a regular basis. The frequency of sweeping and litter control should be monthly and daily, respectively, or shorter, if needed, based onsite conditions.

- Waste Management. Each facility should conduct regular pickup and disposal of garbage and waste materials/products to prevent overfill of waste storage containers, which would increase the risk of waste contacting stormwater.

- Equipment Inspection. Each facility should conduct routine inspection of equipment to ensure proper functioning. Should problems be identified during inspection, proper and prompt maintenance or repair should be conducted.

- Storage. Raw materials, intermediate products, finished products, byproducts and waste products should be stored in covered areas or sealed containers unless the materials or products are not a threat to urban runoff quality. To prevent accidental spills, materials or products should be stored away from direct traffic routes. All containers should be stacked according to applicable federal, state, and city regulations as well as manufacturers' instructions to avoid damage from improper weight distribution. Pallets or similar devices should be used to prevent corrosion of the containers that can result when containers come in contact with moisture on the ground.

- Limitations on Handling Sensitive Materials. Each facility should limit the handling of oil, hazardous, and other sensitive materials to those personnel specially trained to handle these materials.

- Employee Training. All good housekeeping practices should be incorporated into a facility's employee-training program.

3.10 Preventative Maintenance

Preventive maintenance is a crucial component of pollution reduction. It focuses on the prevention of the failure of mechanical or structural management systems before problems occur. As with good housekeeping practices, preventive maintenance measures have been encompassed by the above listed requirements. This section provides some additional discussion to assist with the effective implementation of preventative maintenance measures. These following descriptions do not describe requirements of the City but are instead intended as additional guidance for the more effective implementation of the other BMPs to satisfy other requirements.

- Maintenance of the Stormwater Conveyance System. The City's maintenance activities and schedule are as follows:

    - Once a year, between May 1 and September 30, the City will inspect and remove accumulated wastes (e.g., sediment, trash, debris and other pollutants) from its Stormwater Conveyance System. The City will determine, through historical knowledge, the locations within the Stormwater Conveyance System that require significant waste removal and those areas that are less likely to require any waste removal. The City will focus its once a year inspections and waste removal in the areas where the highest benefit (i.e., waste removal, receiving waters protection) per cost ratio is achieved
    - Additional inspection and waste removal will be completed by the City as needed between October 1 and April 30 each year. As described above, the City will focus on

the locations where the greatest benefit (i.e., waste removal, receiving waters protection) per cost ratio is achieved

- Appropriate record keeping of all maintenance activities will be incorporated. The inspections and waste removal records will contain the following information:
  - The date and time the inspection was performed
  - Name of the inspector
  - Items inspected
  - Location of facility inspected or cleaned
  - Condition of facility
  - Overall amount (estimated in volume or dry weight) of material removed
  - Type(s) of material
  - Disposal site(s)
  - Problems noted
  - Illegal/Illicit connection detected
  - Corrective action required
  - Date corrective action was taken
  - Photographs (digital or 35mm)
  - Additional field notes (as required)
  - Drawings and maps (as required)
- Appropriate disposal of the waste removed pursuant to applicable laws will also be incorporated into the maintenance activities. The wastes will be sampled to determine if there are any special handling and/or disposal needs. If special handling and/or disposal is necessary, a chain of custody will be established in order to properly document the handling and/or disposal with respect to applicable laws
- Appropriate practices will be implemented to insure that maintenance activities will not discharge wastes into the downstream Stormwater Conveyance System. The practices may include; sandbagging and capturing any runoff from hydro-cleaning; use of material beneath waste piles to prevent seepage of liquids or blow-away particles from entering back into the Stormwater Conveyance System
- Non-emergency Stormwater Conveyance System facility repairs and construction between May 1 and September 30
- Emergency repairs to Stormwater Conveyance System facilities will be completed on an as needed basis, regardless of time of year

Illicit discharge detection and reporting will be completed on an as encountered basis, regardless of time of year

- Equipment Maintenance. Routine inspections and testing of facility equipment and systems should be conducted to identify conditions that could cause breakdowns or failures and result in discharges of pollutants (e.g., fuel/oil piping and pipelines, hoses, pumps). The equipment inspection and testing should follow manufacturer's recommended schedule. Appropriate maintenance of all equipment and systems should also be conducted to ensure proper functioning of the equipment and systems.

- Landscaping. Some potential sources of urban runoff water quality degradation can be mitigated through proper landscape management practices. Application of landscaping chemicals such as fertilizer, pesticide, and herbicide should be properly timed and measured in accordance to the manufacturer or supplier's directions. Careful control of these substances reduces the possibility of degrading the quality of urban runoff. An application policy should be developed and

followed to allow use of less toxic and non-toxic products whenever possible and effective. Applications of landscaping chemicals should be made based upon need rather than according to a set routine to reduce the amounts of chemicals needed. Landscaping chemicals should not be applied when a significant rainfall runoff event is anticipated.

- Sediment and Erosion Control. Erosion of exposed soils can be a significant source of pollutants into Stormwater Conveyance Systems and Receiving Waters during rainfall runoff events. Not only do sediments themselves enter and clog waterways, they also carry other pollutants such as oils, nutrients, and pesticides with them as these substances accompany or adhere to sediment particles. Minimum BMP measures should include routine inspection and maintenance of all exposed surface areas to ensure the existence of adequate vegetative ground cover at all times. All vegetation as a part of a privately owned and maintained stormwater conveyance, detention, and treatment system should be maintained at all times. Any unprotected surface in the storm system will be exposed to direct erosion and therefore should be eliminated.

4 General Requirements for High Priority Municipal Areas and Activities

This chapter defines those municipal areas and activities that are High Priority Municipal Areas and Activities and provides Urban Runoff requirements for High Priority Municipal Areas and Activities.

It should be noted that all municipal areas and activities will have the requirements of BMP implementation outlined in this chapter regardless if the operations and maintenance are performed by City staff or by contract services.

4.1 Applicability

At a minimum, the following areas and activities are considered High Priority Municipal Areas and Activities:

- Roads, Streets, Highways and Parking Facilities
- Flood Management Projects and Flood Control Devices
- Areas and activities tributary to a Clean Water Act section 303(d) impaired water body, where an area or activity generated pollutants for which the water body is impaired. Areas and activities within or adjacent to or discharging directly to coastal lagoons or other receiving waters within environmentally sensitive areas (as defined in section F.1.b.(2)(a)vii of the Order)
- Locations with Potential to Impact ESAs
- Municipal Waste Facilities
- Other municipal areas and activities that the Copermittee determines may contribute a significant pollutant load to the Stormwater Conveyance System
- Municipal Airfields

High Priority Municipal Areas and Activities also include any of the following:

- The area or activity is located within 200 feet of an environmentally sensitive area
- The area or activity has greater than 10,000 square feet of impervious surface area
- Discharges, precipitation or non precipitation related, for an area or activity are conveyed to an environmentally sensitive area without commingling with any other discharges or flows
- The area or activity is tributary to a 303(d) listed water body and the area or activity currently involves (uses, generates, disposes, etc.) the pollutant for which the water body is listed
- Without consideration of any BMPs, the area or activity involves pollutants in a quantity, manner, and location that results in a violation or could result in a violation of water quality objectives in a receiving water

A description of these criteria is provided in the following sections.

4.1.1 Roads, Streets, Highways and Parking Facilities

These types of facilities have the potential to generate many pollutants. Streets, roads, highways and parking facilities tend to collect litter and debris from nearby activities as well as from vehicular traffic. The fact that most are impervious only makes matters worse. In addition most of these types of facilities have direct discharges into stormwater conveyances and/or receiving waters to reduce flooding during periods of rain.

4.1.2 Flood Management Projects and Flood Control Devices

These types of projects or devices primarily collect and convey stormwater to receiving water during storms in order to prevent flooding. The systems must be maintained so that they function hydraulically as intended during storm events. An unfortunate consequence is that they also convey non-stormwater runoff (urban runoff) into the same receiving waters. They have the potential of transporting pollutants that are discharged into them over great distances.

4.1.3 Locations with Potential to Impact 303(d) Impaired Water Bodies

Under section 303(d) of the 1972 Clean Water Act (CWA), states, territories and authorized tribes are required to develop lists of impaired water bodies. These impaired waters do not meet water quality standards or support designated water use.

Review the latest 303(d) listing of impaired water bodies for applicability.

4.1.4 Locations with Potential to Impact ESAs

See the SANDAG ESA mapping for the latest ESAs within the City of San Marcos.

4.1.5 Municipal Waste Facilities

The following is a list of high priority municipal waste facilities:

- Active or closed municipal landfills;
- Publicly owned treatment works (including water and wastewater treatment plants) and sanitary sewage collection systems;
- Municipal separate storm sewer systems;
- Incinerators;
- Solid waste transfer facilities;
- Land application sites;
- Uncontrolled sanitary landfills;
- Corporate yards including maintenance and storage yards for materials, waste, equipment and vehicles;

- Sites for disposing and treating sewage sludge; and
- Hazardous waste treatment, disposal, and recovery facilities.

4.1.6 Other Municipal Areas and Activities

The following is a list of other municipal areas and activities that have been determined to be high priority areas and activities:

- Use of pesticides, herbicides, and fertilizers
- Non-emergency fire fighting flows
- Landscape and recreational facilities

Other municipal areas and activities may be added to this list as more information is acquired.

4.1.7 Municipal Airfields

The City of San Marcos has no municipal airfields within the City.

4.2 Minimum BMP Requirements for all High Priority Municipal Areas and Activities

In addition to the general requirements required for all Dischargers and all municipal areas and activities as described in Chapter 2, the BMP requirements described in this section are required of all High Priority Municipal Areas and Activities. The following BMP requirements are described in this section:

- SWMPs and SWPPPs
- Activity-Specific BMPs
- Pollution Prevention Practices
- Non-structural BMPs
- Structural Controls
- Vehicles and Equipment
- Outdoor Areas

4.2.1 Stormwater Management Plans and Stormwater Pollution Prevention Plans

High Priority Municipal Areas and Activities must prepare a SWMP or SWPPP as described in Chapter 2.

BMP Description

Guidance and SWPPP templates can be accessed at the California Stormwater Quality Association website.

4.2.2 Activity-Specific BMPs

High Priority municipal areas and activities shall incorporate into the SWPPP, and install and maintain, applicable BMPs as specified in this Manual.

BMP Description

The City is responsible, as part of their SWMP/SWPPP development, to review their facilities and identify municipal activities that are conducted. Based on this review, BMPs that are appropriate to these activities must be identified and implemented. Where possible, practices that are recognized as being effective and economically feasible for the particular industry should be utilized.

4.2.3 Pollution Prevention Practices

According High Priority municipal areas and activities shall consider and implement pollution prevention practices. At a minimum, the following types of pollution prevention measures must be considered:

- The use of smaller quantities of toxic materials or substitution of less toxic materials
- Changes to operations and maintenance processes to reduce waste
- Decreases in wastewater flows
- Recycling of wastes as part of the operations and maintenance process
- Segregation of wastes
- Treatment of wastes onsite to decrease volume and/or toxicity

4.2.4 Non-structural BMPs

High Priority Municipal Areas and Activities shall incorporate into their SWMPs and SWPPPs, and install and maintain, the following nonstructural BMPs in accordance with the specifications of this Manual:

- BMPs for material-handling and storage of significant materials
- BMPs for non-hazardous waste-handling and recycling
- Employee training programs
- Good housekeeping practices
- Preventive maintenance practices
- Self-inspection and quality assurance practices
- Spill response planning

4.2.5 Structural Controls

High Priority Municipal Areas and Activities shall incorporate into their SWMPs and SWPPPs, and install and maintain, the following structural BMPs where practicable to achieve MEP, if the use of such BMPs would substantially reduce pollution or the potential for pollution in runoff from the activity or area of the municipal area or activity:

- Overhead coverage of outdoor work areas or chemical storage
- Retention ponds, basins, or surface impoundments that confine stormwater to the site
- Berms and concrete swales or channels that divert run-on and runoff away from contact with pollutant sources
- Secondary containment structures
- Treatment control (e.g., infiltration devices and oil/water separators, to reduce pollutants in stormwater or authorized non-stormwater discharges)

4.2.6 Vehicles and Equipment

Each High Priority Municipal Area and Activity is required to implement these BMPs, or equivalent measures, methods, or practices

- The following conditions apply to the fueling of vehicles and equipment at High Priority Municipal Areas and Activities:
    - Storm drain inlets located within or downhill of fueling areas shall be covered or otherwise protected to prevent the entry of spilled fuel.
    - Vehicles and equipment shall only be fueled in areas where adequate precautions have been taken to prevent the entry of spills into the Stormwater Conveyance System or Receiving Waters. Designated fueling areas are required where practicable.
    - The retrofitting of existing facilities with structural controls such as low-flow sumps or oil/water separators shall be considered to prevent the entry of spills into the Stormwater Conveyance System or Receiving Waters. The use of structural controls is not required, but is encouraged where practicable. As previously discussed, the City may order the use of structural controls.

- The following conditions apply to the maintenance and repair of vehicles and equipment at High Priority Municipal Areas and Activities:

    - Storm drain inlets located within or downgradient of maintenance and repair areas shall be covered or otherwise protected to prevent the entry of spilled fluids (e.g., fuel, oil, grease, antifreeze).
    - Vehicle and equipment maintenance and repair shall only be conducted in areas where adequate precautions have been taken to prevent the entry of spills into the Stormwater Conveyance System or Receiving Waters. Designated maintenance and repair areas are required where practicable.
    - Maintenance and repair equipment shall be kept clean to avoid the build up of grease and oil.
    - Fluids shall be drained from any retired vehicles or equipment stored onsite.
    - Only dry cleaning methods shall be used on maintenance and repair areas unless adequate precautions have been taken to prevent the discharge of washwater to the Stormwater Conveyance System or Receiving Waters (e.g., the discharge is directed to the sanitary sewer, a sump).
    - Drip pans, containers, or other methods of drip and spill containment shall be utilized at all times during the repair or maintenance of vehicles and equipment.
    - The retrofitting of existing facilities with structural controls such as low-flow sumps or oil/water separators shall be considered to prevent the entry of spills into the Stormwater Conveyance System or Receiving Waters. The use of structural controls is not required, but is encouraged where practicable. The City may use these and/or other structural controls if it determines MEP has not been met.
- The following conditions apply to the washing of vehicles and equipment at High Priority Municipal Areas and Activities:

    - Vehicles and equipment shall only be washed in areas where adequate precautions have been taken to prevent the entry of washwater and other contaminants into the Stormwater Conveyance System or Receiving Waters. Designated wash areas and/or wash racks are required where practicable.
    - Where practicable, wash areas shall drain or be plumbed to the sanitary sewer.
    - Infiltration of washwater or rinse water to pervious surfaces is generally allowed. However, vehicle washwater or rinse water generated from cleaning engines, mechanical parts, or heavy equipment may not be infiltrated.
    - Washwaters or rinse waters not discharged to sewer or infiltrated must be contained for treatment, reuse, or proper disposal.
- The following conditions apply to the outdoor storage of equipment at High Priority Commercial Businesses:

    - Stored equipment shall be drained of lubricants and other petrochemicals, and these substances properly disposed.
    - Where practicable, equipment storage areas shall be bermed and covered.

4.2.7 Outdoor Areas

High Priority Municipal Areas and Activities are required to implement these BMPs, or equivalent measures, methods, or practices.

- The following conditions apply to rooftop areas at High Priority Municipal Areas and Activities:

- Equipment located on rooftops (e.g., emergency generators, Heating, Ventilation, and Air Conditioning systems) shall be periodically inspected, and preventive maintenance conducted as necessary to prevent leaks and spills.
- Rooftops shall be periodically inspected for materials and substances (bird droppings, grease, leaves, etc.) which have accumulated and such materials and substances shall be removed as necessary to prevent or reduce the discharge of contaminants directly or indirectly to the Stormwater Conveyance System or Receiving Waters.
- Where practicable, roof downspouts shall be routed away from work areas and toward pervious areas such as lawns.

- The following conditions apply to parking areas at High Priority Municipal Areas and Activities:
  - Where practicable, trash containers shall be provided in convenient locations to discourage littering and encourage proper disposal.
  - Vehicles stored in parking areas for extended periods shall be periodically inspected, and leaks and spills cleaned as necessary.
  - Parking areas shall be periodically inspected, and significant accumulations of materials and substances (oil, fuel, grease, leaves, etc.) removed. All materials shall be properly disposed.
  - Materials and equipment which may contaminate urban runoff may not be stored in parking areas unless adequate precautions have been taken to prevent their contact with precipitation, urban runoff, and stormwater.
- The following conditions apply to landscaping and groundskeeping conducted at High Priority Municipal Areas and Activities:
  - The application of pesticides, and other chemical products prior to irrigation or rainfall is discouraged.
  - Product containers in good condition, kept securely closed when not in use, and shall be stored in a manner that protects them from contact with precipitation, urban runoff, and stormwater.
  - Protective measures shall be taken to ensure that stored pesticides, fertilizers, and other chemicals do not contact precipitation, urban runoff, and stormwater.
  - Integrated Pest Management (IPM) practices and other non-chemical pest control methods (e.g., traps, sticky tape, hot-wire lamps) shall be considered where practicable.
  - Exposed slopes shall be stabilized as soon as possible.
  - Paved surfaces such as sidewalks shall be cleaned regularly using dry methods (e.g., sweeping, vacuuming). Hosing, power washing, and other wet cleaning methods are permissible only if adequate precautions have been taken to prevent the discharge of washwater to the Stormwater Conveyance System or Receiving Waters.
  - Stockpiles shall be covered during windy and rainy conditions.

5 BMP Requirements for Specific High Priority Municipal Areas and Activities

In addition to the requirements described in Chapters 2, 3 and 4, the following requirements apply to specific High Priority Municipal Areas and Activities. Because these areas and activities have specifically been identified as representing a high threat to water quality, a specific standard of BMP implementation have been developed by the City in order to ensure that pollutants are not present in discharges.

This chapter contains additional requirements for the following areas and activities:

- Roads and Streets Maintenance
- Parking Facilities
- Corporate Storage Yards for Materials, Waste, Equipment and Vehicle Maintenance
- Landscape and Recreational Facilities
- Public Buildings
- Industrial Facilities
- Other Municipal Areas and Activities

For each of these areas or activities, a section is provided in this Chapter with additional requirements for BMP implementation. In addition, each section provides a discussion of the applicability of the requirements. In general, if a municipal area or activity involves or conducts the activities for which the regulations are provided, the City should comply with the BMP requirements. This is regardless of whether or not the activity is the primary activity of the municipal area or activity.

Also contained within each of these sections are recommended BMPs. These BMPs are not required but instead are provided by the City as recommendations for implementation where applicable.

It should be noted that all municipal areas and activities will have the requirements of BMP implementation outlined in this chapter regardless if the operations and maintenance are performed by City staff or by contract services.

5.1 Roads and Streets Maintenance

5.1.1 Applicability

Streets and roads may collect litter and debris from nearby activities, as well as from vehicular traffic. They also require routine maintenance that may generate waste materials. The goal of the following BMPs is to reduce the impact of City street and road operations and maintenance on stormwater quality. This section pertains to all publicly owned roads, streets and highways.

5.1.2 Description of Impacts

Pollutants of concern are heavy metals, oils and grease, herbicides, pesticides, paints, solvents, battery acid, anti-freeze, litter, green waste, and sediment.

5.1.3 BMP Requirements

In addition to the applicable requirements of Chapters 2, 3 and 4, the following BMPs or equivalent measures, methods, are required during roads and streets maintenance activities:

- Street Sweeping: Street sweeping is widely recognized as an effective method of reducing the amount of pollutants (litter, green waste, oils and grease and sediment) on street surfaces that may impact stormwater. Street sweeping is most effective when sweepers have access to the entire length of the curb. In order to increase cleaning efforts, sweeper operators are advised to make a sufficient number of passes to maximize collection. In areas of chronic hindrances due to parked cars, the road crew should post temporary “no parking” signs.

- Roadway and Bridge Maintenance: The regular maintenance activities for roads and bridges may include, filling potholes, minor construction for sidewalks, and maintenance of drainage channels. To minimize the impact to stormwater resulting from the maintenance of these facilities, the following BMPs are suggested:

    - Repair potholes to reduce sediment loss and erosion.

- Be sure that all spare filling material on the road is collected.
- Conduct maintenance measures during dry weather.
- Barricading drain inlets to reduce sediment or waste from entering the drain during maintenance and construction activities.
- Storing materials away from conveyance systems.
- Constructing temporary onsite washout areas.

- Saw-Cut Slurry: The following procedures will be implemented or required:

  - Avoid saw-cut activities during wet weather, to the extent feasible.
  - Store saw-cutting materials away from drainage areas to prevent stormwater pollution, or implement other equally effective BMPs.
  - Clean up spills from equipment and activities and dispose properly, when practicable

- Paving: The following procedures will be implemented or required:

  - Avoid paving activities during wet weather, to the extent feasible.
  - Store paving materials away from drainage areas to prevent stormwater pollution, or implement other equally effective BMPs.
  - Avoid cleaning paving equipment on-site, to the maximum extent practicable; restrict equipment cleaning to an appropriate designated location, to the maximum extent practicable.

- Concrete: The following procedures will be implemented or required:

  - Wash concrete trucks off site or in designated areas on site, such that there is no discharge of concrete washwater into storm drains, open ditches, streets, catch basins, or other stormwater conveyance structures.
  - Store concrete materials under cover, away from drainage areas, or implement other equally effective BMPs.
  - Avoid mixing excess amounts of concrete on site.

5.2 Parking Facilities

5.2.1 Applicability

This section pertains to all publicly owned parking facilities.

5.2.2 Description of Impacts

Pollutants of concern are oils and grease, battery acid, anti-freeze, litter, heavy metals, and detergents.

5.2.3 BMP Requirements

In addition to the applicable requirements in Chapters 2 and 3 of this Manual, the following conditions apply to publicly owned parking lots:

- Parking facilities shall not be cleaned using wet methods (e.g., hosing, steam-cleaning, pressure-washing) unless adequate precautions have been taken to prevent the entry of washwater and other contaminants into the Stormwater Conveyance System or Receiving Waters
- Parking areas shall be periodically cleaned using dry methods (e.g., sweeping, scraping) to prevent the accumulation of significant materials. Accumulated materials shall be properly disposed

- Signs shall be posted which prohibit littering, dumping, and vehicle servicing
- Place trash cans in strategic locations within the parking areas

5.2.4 Additional Recommended BMPs

The following BMPs are not required, however, these and/or other BMPs may be required by the City if it is determined that MEP has not been met. These BMPs are provided as recommendations for commercial vehicle parking lots and vehicle storage facilities and to assist business with those areas in selecting appropriate BMPs in order to achieve MEP.

- Treat to remove oil and petroleum hydrocarbons at parking lots that are heavily used (e.g., fast food outlets, lots with 25 or more parking spaces, sports event parking lots, shopping malls, grocery stores, discount warehouse stores)
- Develop and implement a weekly sweeping/cleaning program
- Install treatment BMPs in storm drain inlets and ensure adequate operation and maintenance of treatment systems
- Divert runoff to natural treatment BMPs such as filter strips, swales, and biofiltration area.
- Cover vehicle storage areas
- In vehicle storage areas, conduct routing inspections of stored vehicles to detect leaks
- Use porous pavement and other infiltration surfacing techniques

5.3 Corporate Storage Yards for Materials, Waste, Equipment and Vehicle Maintenance

5.3.1 Applicability

For the purposes of this program, public vehicle maintenance/material storage facilities are determined to be any City-owned or operated facility or portion thereof that; conducts industrial activity, operates equipment, handles materials, performs fleet vehicle maintenance including repair, maintenance, washing, and fueling; performs maintenance and/or repair of heavy industrial machinery/equipment; and stores chemicals, raw materials, or waste materials in quantities that require a hazardous materials business plan or a Spill Prevention, Control, and Counter-measures (SPCC) plan.

5.3.2 Description of Impacts

Pollutants of concern are waste oil, toxic hydrocarbons, toxic organic compounds, oils and greases, pH, heavy metals, scrap metal, used antifreeze, used oil filters, oily rags or towels, sediment, sludge, and normal refuse associated with daily operations.

5.3.3 BMP Requirements

In addition to the applicable requirements of Chapters 2 and 3, the following BMPs or equivalent measures, methods, or practices are required at all City storage yards for materials, waste, equipment and vehicle maintenance:

- Repair and maintenance activities shall be conducted only in designated work areas
- Repair and maintenance work must be conducted indoors or under cover whenever practicable If this work cannot be conducted indoors or under cover, other precautions must be taken to prevent the discharge of contaminants into the Stormwater Conveyance System or Receiving Waters
- Significant repair and maintenance work on boats may not be conducted over water. Minor engine work and routine changing of oil or other fluids are not considered significant, but may only be conducted over water if adequate precautions have been taken to prevent the entry of pollutants into the water

- As necessary to prevent the entry of pollutants into the Stormwater Conveyance System or Receiving Waters, designated work areas shall utilize structural controls to (1) prevent the discharge of spills from the work area, (2) prevent run-on from contacting work surfaces and pollutants, and (3) prevent rainfall from contacting work surfaces and pollutants. The City may use structural controls if determined necessary
- Any release of fluids during repair and maintenance shall be promptly contained and cleaned up. Any absorbent materials used must be disposed of properly
- Repair and maintenance materials and wastes must be stored indoors, under cover, or in secure and watertight containers
- Fueling areas shall be under permanent cover
- All storm drain inlets draining the areas of fueling and surrounding areas shall be connected to an oil/water separator and to the sanitary sewer
- Fueling and parking areas shall be periodically inspected, and significant accumulations of materials and substances (oil, fuel, grease, etc.) removed. All materials shall be properly disposed
- Only dry cleaning methods shall be used on fueling and parking areas unless adequate precautions have been taken to prevent the discharge of washwater to the Stormwater Conveyance System or Receiving Waters (e.g., the discharge is directed to the sanitary sewer, a sump)

5.3.4 Additional Recommended BMPs

The following BMPs are not required, however, these and/or other BMPs may be required if it is determined that MEP has not been met.

- Train employees involved in fueling operations in emergency spill response and appropriate spill clean-up procedures
- Post signs to educate employees. Personnel responsible for fueling vehicles should be trained in spill response procedures and instructed to avoid overtopping fuel tanks. Employees should stay with the vehicle while fueling
- Maintain an Emergency Spill Response and Clean up Plan
- Cover fueling area with an overhanging roof structure or canopy with dimensions equal or greater than the area with the grade break and which must not drain onto the fuel dispensing area
- Make sure areas surrounding the fueling area have a 2 to 4 percent slope to prevent ponding and a grade break to prevent run-on of stormwater
- Pave the fuel area using Portland cement concrete, not asphalt, and design to contain fuel spills. Asphalt is not used because it deteriorates when it comes in contact with fuels
- Design the fuel area as a spill containment pad and size to prevent the runoff of spilled fuel and the run-on of stormwater from surrounding pavement
- Collect liquids spilled at the fuel area in drains, either trench drains or catch basins. The drain(s) should be connected to the sanitary sewer or process treatment. The drain shall have a valve to allow shutoff in the event of a large fuel spill and a baffled oil/water separator vault to minimize the flow of fuels into the sewer
- Do not clean the fueling island with water and detergents. Spilled fuels, oils, and grease will leave the site and contaminate surface waters if this method is used. Clean the fueling island using dry methods like spot cleaning with absorbents or mechanical sweepers. Use a damp cloth for pumps and a damp mop will be effective for the paved area

- Keep the number of solvents used to a minimum to make recycling easier and to reduce hazardous waste management cost
- Conduct all liquid cleaning at a centralized station to ensure that solvents and residues stay in one area
- Use drip pans or locate draining boards to direct solvents back into solvent sink or holding tank for reuse
- Use non-hazardous cleaners when possible
- Replace chlorinated organic solvents with non-chlorinated ones like kerosene or mineral spirits.
- Use recycled products such as engines, oil, transmission fluid, antifreeze, hydraulic fluid, and recycle used fluids
- Update facility schematics to accurately reflect all plumbing connections
- Monitor parked or stored vehicles closely for leaks and place drip pans under any leaks to collect the fluids for proper disposal or recycling
- Promptly transfer used fluids to recycling drums or hazardous waste containers
- Store cracked batteries in leak-proof secondary containers
- Keep pumps and hoses used for liquid transfers in good condition, and make sure they are equipped with control valves to enable quick shutoff if a leak or spill should occu.
- Drain all fluids, from wrecked vehicles and equipment upon arrival. Recover air conditioning coolant
- Use reusable cloth rags to clean up drips and small spills instead of disposable materials. Cloth rags can be professionally laundered if reused. Do not attempt to launder these at home or at a coin-operated laundry
- Use absorbent pillows or booms in or around storm drains and catch basins to absorb oil and fuel
- If the liquid transfer area cannot be paved, provide a containment/stormwater run-on prevention structure such as a curb, dike, or berm. As with all containment schemes, spilled materials must be removed from the containment area and properly disposed of, and accumulated water must be properly disposed of or routed to treatment facilities
- Adopt the “dry shop” principle that encourages spills to be cleaned immediately, without waiting for the spilled fluids to evaporate into the air, to transmit to land, or to contaminate other surfaces
- Collect leaking or dripping fluids, paint drips, and spills in designated drip pans or containers. Keep all fluids separated so they may be properly recycled
- Keep a designated drip pan under the vehicle while unclipping hoses, unscrewing filters, or removing other parts. The drip pan prevents splattering of fluids and keeps chemicals from penetrating the shop floor or outside area where the maintenance is occurring
- Immediately transfer used fluids to proper containers. Never leave drip pans or other open containers unattended

Spill Clean Up

The following BMPs are recommended for spills:

- Maintain a spill management action plan
- Do not use water to clean spills, leaks, and drips
- Obtain and use drain mats to cover drains in the event of a spill
- Always keep spill clean up materials, such as rags and absorbent materials, close at hand when changing oil and other fluids. Sewer and stormwater requirements can be complied with more

easily by running a “dry shop,” thereby reducing consumption/discharge of liquids. Soiled rags and other clean-up materials must be properly disposed of or properly cleaned if reused

- Pave and slope a designated area for liquid transfer operations to a sump or holding tank drain to facilitate spill capture. The sump should have a two-way valve so that runoff can typically enter the storm drainage system and can be switched to shut off flow during transfer operations. Collect and dispose of spilled material as mentioned above

Parts Cleaning

The following BMPs are recommended when cleaning engine and motor parts:

- Use detergent-based or water-based cleaning systems instead of organic solvent degreasers
- Use steam cleaning and pressure washing instead of solvent parts cleaning. The wastewater generated from steam cleaning can be discharged to the onsite oil/water separator and to the sanitary sewer system pending appropriate approval from the City
- Provide drip pans underneath hose and pipe connections and other leak-prone areas during liquid transfer operations. Several drip pans should be stored in a covered location near the transfer area so that they are readily available, yet protected from the rain when not in use. Drip pans must be cleaned periodically and drip-collected materials must be disposed of properly
- If the work is done at a mobile location, use a tarp, ground cloth, or drip pans beneath the vehicle or equipment to capture all spills and drips. The collected drips and spills must be recycled or disposed of properly

5.4 Landscape and Recreational Facilities

5.4.1 Applicability

For the purposes of this program, landscape and recreational facilities are determined to include, but not be limited to; parks, golf courses, swimming pools, riding trails, recreational water bodies, picnic areas, sports fields, and landscaped areas in parking lots and other public right-of-way areas. Landscape waste consists of clippings, cuttings and droppings of leafy and woody materials.

5.4.2 Description of Impacts

A variety of pollutants including eroded soil, green waste, fertilizers, and pesticides are conveyed by urban runoff. These untreated pollutants are washed directly into lake and water bodies resulting in adverse impacts to both aquatic organisms and humans. Land surfaces without vegetation can be a serious source of pollutants. Uncontrolled sediment can clog Stormwater Conveyance Systems, leading to flooding. As it settles, sediment can smother the fish eggs and bottom-dwelling organisms and destroy aquatic habitat. Suspended sediment can lower the transmission of light through water and interfere with the respiration and digestion of aquatic organisms. Other pollutants are adsorbed on the surfaces of soil particles and as sediments wash off-site they carry these pollutants with them. Pollutant sources in landscaping include septic systems, fertilizers, animal waste, cleaning products, plant debris, and eroded soil. Phosphorus, nitrogen, and other nutrients can over stimulate aquatic weed and algae growth. As they decay, excess weeds and algae take up oxygen in the water, which is needed by fish and other aquatic life. Most of the pesticides are considered to be toxic substances. Toxins can accumulate in the aquatic food chain, as a larger organism eats many smaller ones that have been contaminated. Even in very small concentrations, toxic substances can harm aquatic plants and animals.

5.4.3 BMP Requirements

In addition to the BMP requirements in Chapter 2 of this Manual, the following BMPs are required at all landscape and recreational facilities:

- Require all employees and contractors who generate landscape waste to dispose of it at a City-approved composting location or permitted landfill; include such provisions in landscape maintenance contracts
- Place temporarily stockpiled material away from watercourses, and berm or cover stockpiles to prevent material releases to the Stormwater Conveyance System
- Pesticides, fertilizers and other chemical products shall be used in accordance with applicable federal, state, and local laws and regulations
- Pesticides, fertilizers, and other chemical products shall be stored in closed, labeled containers, under cover and off the ground
- Areas where work is being actively conducted shall be routinely cleaned up using dry methods (e.g., sweeping, raking). Wet methods (e.g., hosing) may only be used if adequate precautions have been taken to prevent the discharge of washwater or other materials to the Stormwater Conveyance System or Receiving Waters
- The use of blowers is permitted so long as materials are collected and properly disposed. Blown materials in the Stormwater Conveyance System or Receiving Waters is not allowed. The Stormwater Conveyance System includes driveways, streets, and gutters
- Measures shall be taken to reduce or eliminate landscaping and irrigation runoff. Examples of practices include proper irrigation programming, programming shorter irrigation cycle times, and decreasing frequency after the application of fertilizers and pesticides
- Where practicable, fertilizers and pesticides shall not be applied prior to storm events. These products may not be applied during storm events
- Retain and plant native vegetation when practical to reduce water, fertilizer and pesticide needs:
    - Determine existing native vegetation features (location, species, size, function, importance) and consider the feasibility of protecting them
    - Consider elements such as their effect on drainage and erosion, hardiness, maintenance requirements, and possible conflicts between preserving vegetation and the resulting maintenance needs
    - Where feasible, retain and/or plant selected native vegetation whose features are determined to be beneficial
- When practicable, discharge swimming pool filter backwash water and chemically treated water to the sanitary sewer
- If discharging swimming pool water to the storm drainage system, dechlorinate the water through mechanical means (such as letting the water sit for several days without adding chlorine) or chemical means (such as by adding sodium bisulfite)
- Neutralize all other chemicals in swimming pool discharges, such as acid wash residue, before discharging to the Stormwater Conveyance System
- Recreational Water Bodies Beaches, picnic areas, lakes, and ponds receive a large number of visitors and may collect a large amount of litter, debris and other pollutants. To minimize the amount of potential pollutants that reach the water body, the following procedures will be implemented, when feasible:
    - Provide and maintain trash receptacles to hold refuse generated by the public
    - Collect trash and debris from bins and along water bodies to minimize the amount of trash and debris that may contact the water
    - Collect trash and debris from within water bodies where feasible
    - When necessary, increase collection during peak visitation months (generally June, July and August)

5.4.4 Additional Recommended BMPs

The following BMPs are not required, however, these and/or other BMPs may be used by the City if it is determined that MEP has not been met.

- Reduce or eliminate chemical use
- Use pesticides with low mobility, high adsorption, and low persistence
- Train employees in proper pesticide preparation, application, and safe-handling procedures to maximize product effectiveness and reduce the risk of accidental spills
- Use proper lawn care product application equipment and techniques to minimize excessive spraying
- Practice Integrated Pest Management (IPM) to minimize use of pesticides by utilizing organic equivalents, beneficial insects, and pest-tolerant plant species
- Avoid unnecessary pesticide use. Spot application of pesticide ensures that the smallest amount of chemical is applied to the ground and that the chemical is applied only in areas where it is needed. This reduces contamination of surrounding soil. Timely application ensures that applied chemicals do the most good when application is needed. This includes applying chemicals at times when they are most likely to be absorbed by the target species and not spraying in windy conditions or immediately before predicted precipitation events, which could blow or wash the applied chemical into the surrounding environment
- Employ environmentally sound fertilizer management. For facilities, consider developing and implementing a comprehensive nutrient management plan. Avoid applying excess fertilizer by using the rates that are recommended for the product. Understand the needs and growth requirements of the plants, and use the minimum amount of fertilizer necessary to meet the plant needs
- Improve mowing practices. The facility should set the mower height so that no more that 1/3 of lawn height (no more than 1 inch total) is removed with each mowing
- Compost landscaping waste or dispose of properly. Composted green waste can be substituted for organic matter such as mulch and topsoil
- Use erosion control mats and fabrics in channels to reduce the potential for erosion. If necessary, provide sod or seeding on channels that are not stabilized with erosion control mats
- After seeding, divert flows temporarily from seeded areas until stabilized
- Sod stabilizes the area by immediately covering the surface with vegetation and enabling stormwater to infiltrate into the ground
- Stabilize all emergency spillways with plant material that can withstand strong flows. Root material should be fibrous and substantial but lacking a taproot
- Specify turf grasses that are culturally and climatically well adapted and will therefore be drought resistant, have minimal fertility requirements and be resistant to local pests.
- Design and construct an irrigation system that will provide maximum watering flexibility to the use of these areas. Such a system will allow the operator to meet the course's varying water requirements created by the presence of possibly disparate microclimates
- Construct a building dedicated to fertilizer and equipment storage and separated from surface water flooding effects. Locate the building downwind and downhill from sensitive areas such as houses and ponds. Construct over soil that will not lead to contamination of any water systems through runoff or percolation
- Prohibit the use of fertilizers and pesticides in environmentally sensitive areas including water quality swales

- Carefully store and clearly label fertilizers, pesticides and other toxic products to prevent accidental misuse. The facility in which they are located should have a sealed floor with a lip to insure that a spill would be contained. A spill prevention and control plan should be applied
- Whenever possible, use alternate methods to pesticides. These would include biological, cultural or structural techniques that would make the habitat inhospitable to the pest. Such techniques would include introducing predator insects and beneficial nematodes to control undesirable populations
- If pesticides are unavoidably required, use them in a judicious manner and use the least toxic formulation that will accomplish the desired task
- Use only those pesticides with a short to intermediate half-life and which are approved by the local governing agency and apply them in accordance with all applicable laws and regulations
- Follow manufacturer's instructions explicitly. A licensed applicator shall be responsible for all pesticide policy and applications
- Take all possible precautions to insure sprayed pesticides arrive and remain at target surface. These would include using specialized equipment such as hooded sprayers and applying chemicals when weather conditions are favorable for maximum efficacy. Spraying should only occur when winds are below five miles per hour and when dry weather is forecast. If repeat treatments are required, rotate formulations to avoid development of pesticide resistant pathogens
- Use computer or automatically controlled injection systems for fertilizer equipment

5.5 Public Buildings

5.5.1 Applicability

For the purposes of this program, public buildings include any structure that is owned, operated and/or maintained by the City.

5.5.2 Description of Impacts

The pollutants of concern are nutrients, pesticides, herbicides, nutrients, bacteria, metals, oils and grease.

5.5.3 BMP Requirements

Although Public Buildings are designated as High Priority Municipal Areas and Activities, the BMPs required to be implemented are described in Chapters 2 and 3 of this Manual. The BMPs include; good housekeeping practices, material and waste storage, material inventory, preventative maintenance, visual inspections, spill prevention and response, proper landscaping techniques and employee training.

5.6 Industrial Facilities

5.6.1 Applicability

City owned and operated industrial facilities (e.g. municipal airports, active or inactive landfills, hazardous waste treatment, disposal and recovery facilities and water treatment facilities/systems) have additional regulatory requirements placed on them in addition to the Order. Each industrial facility must also meet specific waste discharge requirements and require compliance with a separate NPDES Permit.

5.6.2 BMP Requirements

For the purpose of this program, the minimum BMP requirements for industrial activities are included in the Industrial Urban Runoff Requirements Manual.

5.7 Other Municipal Sites/Sources Contributing Significant Pollutant Loads

At any time, the City may determine that additional specific Municipal Areas and Activities or activities may contribute significant pollutant loads to the Stormwater Conveyance System. When the City makes these determinations, it may choose to develop additional BMP requirements.

Areas and activities that the City has identified at this time to generally be potential contributors of significant pollutant loads include spills and non-stormwater discharges, loading and unloading activities, and exposed storage areas. These areas and activities are covered in the previous sections and BMP requirements are specified where applicable. Additional guidance on these activities is provided in this section. These are not requirements, however, these and/or other BMPs may be required by the City if it is determined that MEP has not been met. These sections are provided as recommendations and to assist business with these areas and activities in selecting appropriate BMPs in order to achieve MEP.

5.7.1 Spills and Non-Stormwater Discharges

Spills and non-stormwater discharges can contribute a variety of pollutants at significant levels to Stormwater Conveyance Systems and/or Receiving Waters. These types of discharges are not only illicit discharges but also often preventable. The discharge of any spilled materials and/or non-stormwater could significantly impact Receiving Water quality. During dry weather when there is less flow in the streams, impact from spills and non-stormwater discharges can be devastating to ecosystems and even the tourist industry. Some spilled materials may accumulate in the Stormwater Conveyance System until a significant storm event washes the materials off, impacting wet-weather stormwater quality. Other spilled materials may infiltrate the ground surface and contaminate both soil and groundwater. Therefore, spills and non-stormwater discharge activities are considered High Threats to water quality.

Both spills and non-stormwater discharges are caused by human factors and therefore are preventable if appropriate inspection, maintenance, chemical/waste handling, and response practices were implemented.

The following BMPs are recommended and should be considered at any facilities with potential for spills or other non-stormwater discharges:

- Develop a spill prevention, response, and cleanup plan. The plan should outline procedures, responsible personnel, equipment needed for spill containment and clean up and locations where the equipment should be kept and maintained. The procedures outlined in the plan should include procedures to prevent spills and other non-stormwater discharge of materials from the facility, as well as procedures to respond and clean up when a spill occurs. The plan should also include inspection procedures and frequency to reduce the risk of a spill and eliminate all non-stormwater discharge. An appropriate reporting procedure should also be developed to allow timely reporting of a spill and non-stormwater discharge to proper authorities
- Implement the developed spill prevention, response, and cleanup plan to reduce the risk of potential spills; respond immediately to a spill and eliminate any non-stormwater discharge
- Provide and maintain all necessary containment, response, and clean up equipment onsite
- Train responsible personnel regularly regarding inspection, spill prevention, response, and clean up procedures and equipment to be used, as well as reporting procedures
- Train all employees to have a basic knowledge of spill control procedures
- Train all employees, responsible for handling materials, on the application of up-to-date techniques to prevent spills and check for leaks

- Document all spills, leaks and non-stormwater discharge events. Retain these records onsite for at least three years from the events
- Update the spill prevention, response, and cleanup plan when activities or responsible personnel change, after each spill event or whenever necessary. At a minimum, the plan should be reviewed and updated annually
- Post a written summary of the plan at appropriate locations within the facility, identifying the spill clean up coordinators, location of clean-up kits, and phone numbers of regulatory agencies to be contacted in the event of a spill
- Transport and store all liquid materials in appropriate containers with tight-fitting lids or seals.
- Use drip pans underneath all containers, fittings, valves, and other devices where materials are likely to spill or leak
- Use tarps, ground cloths, or drip pans areas where materials are mixed, carried, and apply to prevent any spilled materials from leaving the areas
- Store emergency spill containment and clean-up kits near areas having high potential for spills, leaks, and other accidental releases of materials. Contents of the spill kit must be appropriate to the type and quantities of materials stored or used at the facility
- Routinely evaluate and improve all commercial activities within the facility that involve the storage, handling, transportation, manufacturing and use of all liquid and solid materials and products for the threat to contaminate stormwater runoff and ambient water quality
- To the extent possible, conduct high-threat activities that could result in spills or other discharges in locations well away from storm drains and other waterways or water bodies
- To the extent possible, avoid conducting high-threat activities that could result in spills or other discharges during storm events

The following list is provided to assist in the preparation and maintenance of spill prevention, response, and clean-up plans:

- Provide a description of the facility including the owner's name, address, and phone number, the nature of the facility activities, and a detailed list of materials handled in the facility that may potentially impact stormwater and/or ambient water quality. The material list should include all raw materials, intermediate products, finished products, byproducts and waste products that may be exposed or in contact with stormwater or ambient water
- Provide a list of designated employees who are trained and responsible for the implementation of the spill prevention, response, and clean-up plan. A list of names, addresses, and phone numbers (office, home and mobile) of these designated employees must be kept current in the plan
- Develop a site map showing the locations of all material storage areas and locations and types of commercial activities. Locations of inlets and outfalls of Stormwater Conveyance Systems as well as drainage patterns within the facility should be clearly marked on the site map. Locations, names, and Hydrological Unit numbers of Receiving Water bodies should be marked on the site map to the extent possible. Locations and description of any devices that are installed to stop spills from leaving the facility should also be identified on the site map
- Describe routine inspection procedures and frequency to reduce the risk of a spill and eliminate all non-stormwater discharge
- Describe spill clean up and disposal procedures
- List the names and numbers of agencies to contact in the event of a spill
- Document historical inspection and training events
- Document historical spill and clean up events

- Document revisions to the spill prevention, response, and cleanup plan including nature, reasons, and time of the revisions

In the event of a spill the following should be considered:

- Start spill cleanup immediately. Follow procedures outlined in the spill prevention, response, and cleanup plan properly. Use cloth rags or whatever appropriate to clean up spills. Do not use emulsifiers or dispersants such as liquid detergents or degreasers because they would further mobilize the spilled materials
- Contact employees responsible for implementing the spill prevention, response, and clean up plan immediately
- Seal all inlets to the storm sewer or other conveyance systems nearby the spill area to prevent materials from entering the drainage system
- Immediately report all spills that could reach storm drains, sanitary sewer, streams, lakes, coastal waters, and other ambient water bodies to the appropriate agencies
- Do not wash absorbent material down interior floor drains or exterior storm drains
- Dispose of used spill control materials in accordance with applicable solid waste and hazardous waste regulations

5.7.2 Loading and Unloading Activities

Loading and unloading of liquid or solid materials via trucks, rail carts, or ships are high-threat activities because of their high potential of having a spill or leak. While most of loading and unloading activities occur at commercial or commercial-loading docks, the spilled or leaked materials could enter ambient water bodies directly or through a Stormwater Conveyance System. Depending on the type of commercial facilities, the spills or leaks may contain oxygen-demanding organic and chemical matters, toxic organic compounds, oil and grease, heavy metals, nutrients, and acidic or alkaline products. Without proper clean up, some of such materials would accumulate in soils and Stormwater Conveyance System that could adversely impact stormwater, groundwater, and ambient water quality.

The following BMPs are recommended and should be considered at any facilities or other activities involving the loading and unloading of liquid and solid materials:

- Review and follow those recommendations and regulations relating to spill and non-stormwater discharges. Review and follow loading and unloading of liquid and solid materials can potentially result in spills or other discharges
- Regularly train employees responsible for loading and unloading operations on spill prevention, response, and clean up procedures. At least one trained employee must always be onsite during loading and unloading activities
- Well maintain all loading/unloading equipment such as pumps and hoses to ensure a sealed operation. Control or shutoff valves and other emergency devices should be installed at appropriate locations and clearly marked to enable quick shutoff if a leak or spill occurs
- During loading, unloading and other material-transfer activities as well as when making or breaking connections, use drip pans underneath all hose and pipe connections, tank cars, hose reels, filler nozzles, and other potential locations where spilling and leaking are possible. Drip pans should be stored in a covered area adjacent to the loading area to ensure quick access while preventing them from contact with stormwater when not in use
- Properly clean drip pans after each use to remove any leaked material collected, which should be disposed off according to applicable solid waste and hazardous waste regulations

- Install temporary seals or covers on storm drain inlets that may receive runoff from the loading areas.
- Except for areas where large equipment cannot maneuver under a roof, cover the loading area to prevent rainfall from coming into contact with unloading/loading equipment and materials
- Pave the loading/unloading areas with materials that are compatible with the material(s) to be loaded/unloaded
- Grade the loading areas so that all runoff from the loading areas can be directed to a sump or a holding tank so that any spilled material not contained onsite can be captured
- For covered loading areas, have no outlet for the sump. All captured spilled material must be removed and disposed off according to applicable solid waste and hazardous waste regulations
- For uncovered loading areas, have a capacity for the containment system sump from the greater volume of the following: the volume that would be discharged from the largest nozzle used to load/unload over a 15-minute period, or 0.6 inch of runoff over the entire loading/unloading areas. The control valve of the sump should remain open when loading/unloading activities are not taking place to allow stormwater runoff to discharge into a Stormwater Conveyance System, but the valve should be closed when loading/unloading activities are on going. Any spilled material captured in the sump must be removed and properly disposed off before the control valve can be re-opened
- For loading/unloading of liquid materials, have an adequate capacity for the sump or containment system to hold the volume of material that would be discharged from the largest nozzle used to load/unload for a period of 15 minutes
- Grade the areas outside the loading areas so that runoffs from these areas will not mix with each other
- For operations in uncovered areas, avoid loading/unloading activities during storm events
- For loading/unloading of powdered or lightweight materials, avoid loading/unloading activities during high-wind conditions

5.7.3 Exposed Storage Areas

If not properly contained, sealed, or covered, materials or products stored at exposed outdoor facilities may get in contact with stormwater and impact water quality. Exposed storage facilities may include above-ground stationary or portable storage tanks, portable storage containers, stockpiles and other non-contained storage of materials or products. Spills and leaks from above-ground storage tanks storing liquid chemicals, fertilizers, pesticides, solvents, grease, or petroleum products may contain toxic organic compounds, solvents, fuel, oil and grease, heavy metals, nutrients, acidic or alkaline materials, and oxygen-demanding chemical or organic contents. Outdoor portable containers may store liquids, food wastes including vegetable grease, animal grease, or other accumulated food wastes, hazardous wastes including used oil, liquid feedstock, cleaning compounds chemicals, etc. that may contaminate stormwater and ambient water quality by releasing organic compounds, solvents, fuel, oil and grease, heavy metals, nutrients, acidic or alkaline materials, bacteria and oxygen-demanding chemical or organic contents.

Stockpiles are temporary or permanent storage of soils and other materials outdoor that are exposed to rainfall and stormwater runoff. Erosion of stockpiles and leaching of chemicals from the stored materials can significantly impact the quality of Stormwater Conveyance System and nearby waterways. Significant erosion of solid materials not only will increase the levels of suspended solids in stormwater and ambient water, but also can reduce the capacity of drainage system resulting in significant maintenance problems and even flooding. Elevated levels of suspended solids due to erosion will impact water quality and adversely affect aquatic life. In addition, pollutants contained in storage materials

such as salts (e.g., sodium, calcium, magnesium), organic compounds, heavy metals, etc. can leach out and contaminate soil, stormwater, surface water, and groundwater.

Outdoor storage of raw materials, intermediate products, finished products, byproducts, or waste products that are not covered, sealed, or contained will get in contact with stormwater and may impact water quality. Materials and products, such as pesticides, fertilizers, contaminated soil, food products and wastes, metals, construction materials and wastes (e.g., lumber, roofing materials, insulation, piping, concrete), erodible materials (e.g., sand, gravel, road salt, topsoil, compost, excavated soil, wood chips, mulch materials), can significantly impact water quality if not properly stored.

All these outdoor storage facilities are considered high threat facilities and the following BMPs are recommended and should be considered at location where these storage facilities exist:

The following BMP implementation or equivalent measures are required for commercial facilities involving the storage of raw materials, intermediate products, finished products, byproducts and waste products in areas exposed to stormwater:

- Cover all non-containerized materials and products stored in exposed areas by plastic sheeting or other impermeable materials when not in use
- Anchor covers with sand bags, tires, or other means
- Grade the areas outside the storage areas so that the storage areas are hydraulically isolated to prevent mixing with nearby stormwater runoff
- If applicable, store materials/products in containers that are compatible with the material being stored
- Seal well, leak-proof, and keep in good condition all containers without corrosion or leaky seams. All storage tanks, fittings (e.g., valves, pipe connections), and containment systems should be inspected daily for leaks and spills. All leaking, corroded, or otherwise deteriorating containers and fittings must be replaced
- Protect all storage tanks from potential physical damage from vehicles or other equipment
- Recycle sweep materials to the storage areas or dispose the materials according to applicable regulations
- Conduct cleaning activities on exposed storage areas in accordance with the BMP implementation requirements for commercial washing activities. All washwater must be collected and properly treated or disposed
- Make sure all construction-related stockpiling operations comply with all BMP implementation requirements for construction activities
- Secure all exposed storage areas that are accessible to unauthorized personnel or the general public to prevent accidental spills, vandalism, or any unauthorized use, misplace or removal of the materials or products
- Inspect daily all liquid and solid storage containers, including waste dumpsters, for leaks, spills, and other signs of contamination.
- Regularly sweep and clean all paved storage areas exposed to rainfall, at least monthly or as needed depending on site conditions. Washing of paved surfaces with water is not recommended but, if conducted, must comply with applicable BMP implementation requirements for such activities
- Make sure all reactive, ignitable, or flammable materials stored comply with applicable Fire Code and other regulations

- Store exposed materials or products only on impervious and covered areas, or pave or line the storage area with an impermeable material that is compatible with the materials being stored.
- Store erodible or leachable materials away from storm drain inlets
- For stockpiles, cover the storage areas to prevent contact with rainwater by either storing the materials or products inside a building or other covered areas, construct canopy or other roof structure over storage area or cover stockpiles with plastic sheeting or other impermeable material such as tarps
- For large storage areas that cannot be covered, install a system to collect and treat stormwater runoff from the material storage area. Grade the storage areas to ensure hydraulic isolation from other areas. Provide treatment to collected stormwater runoff before discharge off-site
- For permanent container/tank storage areas, install a secondary containment system with suitable capacity to prevent spilled or leaked materials from leaving the areas or entering a drainage system or adjacent waterways. Any materials collected in the containment system should be properly treated or disposed
- Install a control valve at the outlet of the containment system. Keep the valve closed during normal operation period and only open the valve when there is a need to release uncontaminated stormwater
- For temporary container/tank storage areas that are used for less than 30 days, use a portable secondary containment system
- For outdoor petroleum storage tanks, provide treatment to stormwater runoff from the storage containment areas by an American Petroleum Institute (API) or coalescing plate oil/water separator before discharging off-site
- For stockpiling, avoid low-elevation areas where stormwater runoff tends to concentrate. Grade the area in and around the stockpiles to a minimum slope of 1.5 percent to prevent pooling
- Maintain all existing vegetation around and downstream from stockpile areas to serve as a buffer or treatment area to trap suspended solids
- Limit access to stockpile areas to minimize the amount of dust and other loose material generated

6 BMP Requirements for Special Municipal Areas and Activities

In addition to the requirements described in Chapters 2, 3 and 4, the following requirements apply to Special Municipal Areas and Activities.

It should be noted that all municipal areas and activities will have the requirements of BMP implementation outlined in this chapter regardless if the operations and maintenance are performed by City staff or by contract services.

This chapter contains additional requirements for the following areas and activities:

- Non-Emergency Fire Fighting
- Maintenance of the Stormwater Conveyance System
- Use of Pesticides, Herbicides and Fertilizers

For each of these activities, a section is provided in this Chapter. In addition, each section provides a discussion of the applicability of the requirements. In general, if a municipal area or activity involves or conducts the activities for which the regulations are provided, the City should comply with the BMP requirements. This is regardless of whether or not the activity is the primary activity of the municipal area or activity.

6.1 Non-Emergency Fire Fighting

6.1.1 Applicability

Non-emergency fire fighting activities include all activities related to fire prevention, training, and operations and maintenance at all fire fighting related areas, facilities and activities.

6.1.2 BMP Requirements

The following are BMPs to be implemented in order to reduce the pollutants in non-emergency fire fighting flows to the MEP. Many of the BMPs are similar or redundant to BMP requirements listed in Chapters 3, 4, 5, and 6 in this Manual, but fire fighting activities are special activities that warrant detailed BMP requirements.

6.1.2.1 Vehicle and Equipment Washing and Cleaning

- Any area or facility used for the washing and/or cleaning of vehicles and equipment must be designed so that no wash water or other debris enters the stormwater conveyance or receiving water
- A wash area may be created in a manner that allows all wash water to percolate through plant material or the earth, or evaporate completely, as long as no wash water enters a storm drain, drainage to a waterway, or escapes from the property
- Consider off-site commercial washing and steam cleaning facilities whenever possible. If other government facilities nearby have acceptable systems in place, consider entering into agreement for mutual use
- Use designated wash areas (preferably covered) to prevent contact with stormwater and bermed to contain wash water
- Discharge wash water to sanitary sewer (contact local sewer authority to find out if pre-treatment is required)
- Consider constructing a holding basin for the wash water if sewer is not available (liquid must be disposed of properly)
- Do not permit steam cleaning wash water to enter storm drain
- Clean up of wash area must be accomplished in the same manner: No discharge to enter the storm drain. Utilize wet mop cleaning of small areas when available

Additional considerations include:

- Utilize methods of cleaning vehicles that employ the minimal use of water, such as wet chamois, non-water rinses, etc. when applicable
- Consider the use of a “wet-vac” to pick up wash water and dispose of it to sewer
- Use biodegradable cleaning agents in infiltration areas being absorbed into landscaped areas or soil
- If steam-cleaning operations are in use, be aware of the chemicals and greases removed from the equipment. Any solvents used to pre-treat soiled equipment shall not escape the containment process and must be disposed of properly
- Should chemicals be used to clean up soiled walls and floors of the work area, wet mopping may be the best means of clean up, however consider the properties of the cleaning agent. It may be necessary to dispose of any mops or rags in a safety can or other appropriate means
- If facility is not connected to sewer system, consider the impact of placing any chemical agents into the septic system and the effects thereof

- Water from steam cleaning of equipment must be discharged to the sewer or holding tank to be disposed of properly. The rinseate cannot be discharged to a landscaped area, stormwater conveyance or receiving water

6.1.2.2 Vehicle Fueling: Fixed Facilities

- Protect the fueling area from stormwater with a canopy
- If a canopy is infeasible and the fuel island/pump is surrounded by asphalt pavement, apply a suitable sealant that protects the asphalt from spilled fuels
- If the fueling area is surrounded by a perimeter drain, be sure the drain is clear of debris at all times
- Where a perimeter drain is not installed, utilize a berm to prevent run-on of stormwater, and runoff of spilled liquids
- If a dead-end sump is not used to collect spills, install an oil-water separator
- Utilize vapor recovery nozzles to help control drips as well as air pollution
- Discourage "topping-off" of fuel tanks
- Use secondary containment when transferring fuel from the delivery vehicle to the storage vessel
- Have a spill control kit available at the site. Use absorbent materials on small spills and general cleaning rather than hosing down the area. Remove the absorbent material promptly and dispose of appropriately
- Carry out all federal and state requirements regarding the storage and handling of fuels
- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up to date
- Discourage the practice of "mobile fueling" if the vehicles and/or equipment can be brought to the refueling facility. (During sustained fire operations mobile fueling is necessary)
- The surface where the refueling takes place is ideally made of concrete or other impervious surface

Additional considerations include:

- Oil/water separators are only as effective as their maintenance program
- Consider using a permitted off-site fueling facility

6.1.2.3 Vehicle Fueling: Mobile

- Avoid topping off tanks while fueling in the field
- Keep spill control and containment equipment available for use

6.1.2.4 Vehicle and Equipment Maintenance and Repair

- Vehicle and equipment maintenance shall only be conducted in areas where adequate precautions have been taken to prevent the entry of spills into the stormwater conveyance system or receiving water
- Only dry cleaning methods shall be used on maintenance and repair areas unless adequate precautions have been taken to prevent the discharge of wash water to the stormwater conveyance or receiving water

6.1.2.5 Hose Washing and Cleaning

- Any area or facility used for the washing and/or cleaning of fire hose must be designed so that no wash water or other debris enters the stormwater conveyance or receiving water

Additional considerations include:

- A wash area may be created in a manner that allows all wash water to percolate through plant material or the earth, or evaporate completely, as long as no wash water enters a storm drain, drainage to a waterway, or escapes from the property
- If available, use designated wash areas (preferably covered), which are bermed to prevent contact with stormwater and to contain wash water
- Discharge wash water to sanitary sewer (contact local sewer authority to find out if pre-treatment is required) or a holding tank for proper disposal later
- Consider constructing a holding basin for the wash water if sewer is not available (liquid must be disposed of properly).Do not permit wash water containing detergents, degreasers, or other contaminants to enter storm drain
- Clean up of wash area must not allow discharge to enter the storm drain. Utilize wet mop of small area cleaning methods when available
- Utilize methods of cleaning fire hoses that employ the minimal use of water, such as high-pressure spray washers when applicable
- Consider the use of a "wet-vac" to pick up wash water and dispose of in sewer, septic system or holding tank
- Consider the use of biodegradable cleaning agents
- If heavy cleaning operations are in use, become aware of the chemicals and greases removed from the equipment. Any solvents used to pre-treat soiled equipment shall not escape the containment process
- Should chemicals be used to clean up soiled walls and floors of the work area, wet mopping may be the best means of clean up, however consider the properties of the cleaning agent. It may be necessary to dispose of any mops or rags in a safety can or other appropriate means
- If washing hoses indoors, consider the effects that a wet environment will have on walls, windows, ceilings and other surfaces. Protect exposed equipment and porous surfaces
- If facility is not connected to sewer system, consider the impact of placing any chemical agents into the septic system and the effects thereof. Use of a holding tank may be necessary for wastewater

6.1.2.6 Fire Ground Training

- Water flows should be directed to landscaped areas whenever possible
- When flowing water to an area where landscaping does not prevent runoff, the area selected shall be surveyed by the officer in charge prior to training activities to ensure that debris will not enter the stormwater system as a result of the drill
- Live fire training activities will be pre-planned to allow integration of structural BMPs to control runoff. Run-off from live fire training activities may not be discharged to the stormwater conveyance system or receiving waters
- Discharge water to lawn areas
- Use fog streams for short durations while moving the stream
- Use lower gallon per minute (GPM) nozzle settings
- When practical minimize the length of the supply lines

Additional considerations include:

- Care should be taken to compare the ratio of flow to landscape area
- Consideration should be made for training activities (water flowing) to be conducted on non-rain days

- Consideration should be made for water conservation (guidelines for time versus gallon per minute flows) whenever possible
- Diversion/diking should be included in the exercises to allow evaporation, whenever possible
- Consideration should be made to utilize techniques for velocity reduction (energy dissipaters) when possible
- Techniques for sediment control should be incorporated in training whenever possible

6.1.2.7 Maintenance

- Discharge foam flushing to permeable paving and turf areas for lawn area to flush or divert to drywells or landscaping
- When performing pump testing, provide recycle test pit area
- When performing hose testing, perform the test on site in a recycle area or direct flows to drywells or landscape areas

6.1.2.8 Cleaning

- Where practical wash hoses in sinks that discharge to sewer or septic system.
- Any area or facility used for the washing and/or cleaning of fire hose must be designed so that no wash water or other debris enters the stormwater conveyance
- A wash area may be created in a manner that allows all wash water to percolate through plant material or the earth, or evaporate completely, as long as no wash water enters a storm drain, drainage to a waterway, or escapes from the property
- Use of designated wash areas (preferably covered and bermed) to prevent contact with stormwater
- Discharge to sanitary sewer when possible (contact local sewer authority to find out if pre-treatment is required)
- Consider constructing a holding basin or tank for wash water if sewer is not available (liquid must be disposed of properly)
- Do not permit wash water containing detergents, degreasers, or other contaminants to enter the storm drain
- Clean up of wash area must be accomplished so as not to discharge to the stormwater conveyance. Utilize wet mop of small area cleaning methods when available

Additional considerations include:

- Utilize methods of cleaning fire hoses that employ the minimal use of water, such as high-pressure spray washers when applicable
- Consider the use of a “wet-vac” to pick up wash water and dispose of in sewer, septic system or holding tank
- Consider the use of biodegradable cleaning agents
- If heavy cleaning operations are in use, become aware of the chemicals and greases removed from the equipment. Any solvents used to pre-treat soiled equipment shall not escape the containment process
- Should chemicals be used to clean up soiled walls and floors of the work area, wet mopping may be the best means of clean up, however consider the properties of the cleaning agent. It may be necessary to dispose of any mops or rags in a safety can or other appropriate means
- If washing hoses indoors, consider the effects that a wet environment will have on walls, windows, ceilings and other surfaces. Protect exposed equipment and porous surfaces

- If facility is not connected to sewer system, consider the impact of placing any chemical agents into the septic tank and effects

6.1.2.9 Fire Prevention Activities

- Fire sprinkler acceptance and testing
    - Conducted on non-rainy days thus heightening evaporation, whenever possible
    - Conduct flows for the shortest duration possible
    - Clear debris from areas where water flows may create runoff into the conveyance system
    - Contain flows onsite whenever possible

- Fire hydrant testing or repair
    - Conducted infrequently
    - As needed for visible leaks, repairs and other concerns
    - Conducted on non-rainy days whenever possible
    - Conduct flows for the shortest duration possible
    - Flows should be diverted to sewer (check if allowed by water district)
    - Debris will be cleared from areas where water flows may create runoff into the conveyance system
    - Flows not diverted to sewer should be diverted to landscaped areas

- Weed Abatement
    - As a practice mowing will be encouraged
    - When mowing is not practical for perimeter breaks, roughing the slope in a manner that would not increase soil or sediment releases will be utilized, such as disking.

6.2 Maintenance of the Stormwater Conveyance System

6.2.1 Applicability

The Stormwater Conveyance System includes creeks, rock lined channels, concrete channels, culverts and catch basins, desilting basins, and detention basins.

6.2.2 BMP Requirements

The following are BMPs to be implemented for the Stormwater Conveyance System. The BMPs should be scheduled in the City's maintenance schedule.

- Remove of trash and debris from all drainage facilities
- Inspect and clean catch basins, culverts and concrete channels
- Remove silt after sufficient accumulation from creeks, desilting basins, detention basins, and rock lined channels
- Flow line vegetation maintenance creeks, desilting basins, detention basins, and rock lined channels
- Non-emergency stormwater facility repairs and construction should be completed on an as needed basis between May 15 to November 15
- Illicit discharge detection and reporting should occur as they are encountered

- Properly handle materials and dispose of waste removed during maintenance activities in a manner that will not release the material to the Stormwater Conveyance System, or in any other way contaminate stormwater runoff
- Develop and maintain records for the following information:
    - Date and time of the incident
    - Weather conditions
    - Duration of the spill/leak/discharge
    - Cause of the spill/leak/discharge
    - Response procedures implemented
    - Persons notified
    - Environmental problems associated with the spill/leak/discharge
- Maintain inspection records for the following information:
    - The date and time the inspection was performed
    - Name of the inspector
    - Items inspected
    - Locations of facilities inspected or cleaned
    - Overall amount of material removed (estimated in either volume or dry weight)
    - Type of material
    - Disposal site
    - Problems noted
    - Illegal/Illicit connection detected
    - Corrective action required
    - Date corrective action was taken

6.3 Use of Pesticides, Herbicides and Fertilizers

6.3.1 Applicability

This program section encompasses all activities related to the storage, application and disposal of pesticides, herbicides and fertilizers at or for any City owned, operated or maintained.

6.3.2 BMP Requirements

The Federal Pesticide, Fungicide, and Rodenticide Act and California Title 3, Division 6, Pesticides and Pest Control Operations are strict in their requirements related to pesticide application handling, training and testing. These regulations include; a list of approved pesticides and selected uses, application information; equipment use and maintenance procedures; and record keeping requirements. The State of California coordinates and maintains the licensing and certification programs. All public agency employees and contract service employees shall be appropriately certified for application of pesticides and herbicides by the State of California. Below is a list of regulations and BMPs to be followed:

- Proper storage and inspections – conduct monthly inspections to monitor storage, handling and disposal of pesticides
- Every two years, the Qualified Applicator Certificate holder must show proof that they have secured a minimum of 40 hours of continuing education
- All Qualified Applicator Licensees and Qualified Applicator Certificate holders are required to report pesticide usage on a monthly basis to the Department of Agriculture, giving locations, type and quantity of pesticides, and other information

- The Qualified Applicator Certificate holder will conduct monthly inspections to monitor storage, handling and disposal of the pesticides
- The Department of Agriculture will review the pesticide application programs of public agencies.
- Insure written recommendations prepared by a State Pesticide Advisor are followed during pesticide application
- Insure that pesticide and fertilizer labels, and the Material Safety Data Sheet(s) (MSDS) are followed by the applicator
- Insure all state, federal and local regulations are followed in the use of fertilizers and pesticides.
- Reduce runoff by proper irrigation programming, programming shorter irrigation cycle times and increasing the irrigation frequency after the application of fertilizers and pesticides
- Do not fertilize or apply pesticides prior to or during storm events
- Use pesticides that are quickly absorbed into the soil or plants which will reduce the amount of pollutants entering an Stormwater Conveyance System
- Whenever practical, use integrated pest management practices
- Don't spray pesticides when the spray can drift into non-target areas or onto non-target vegetation, insects or animals
- Follow the pesticide and fertilizer labels and state regulations in disposing of excess products.
- Comply with County and state reporting requirement, for pesticide
- All public agency employees and contract service employees who handle pesticides, herbicides and fertilizers will be familiar with the most up to date MSDS
- Use all of the product before disposing or give the unused portions to other agencies or community groups
- Minimize the use of pesticides/herbicides – Consider alternative products in lieu of pesticides/herbicides to control insects, fungi and weeds. Information on alternatives can be provided by Bio-Integral Resource Center in Berkeley, California at (510) 524-2567