

Residential Manual

1 Introduction

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

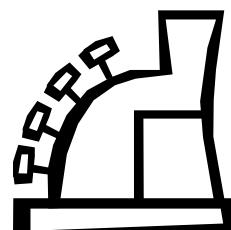
1.2 What is Urban Runoff and Stormwater?

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 Residents

This Manual establishes BMP requirements for residents. Residents subject to these requirements include all residents within the limits and extraterritorial jurisdiction areas of the City. In addition, owners or managers of residences are subject to these requirements as the responsible party for a residence if the residence is unoccupied. These groups, which are subject to the requirements in this Manual, are formally referred to as Residential dischargers.



Residences within the limits and extraterritorial jurisdiction areas of the City that are used for commercial or industrial purposes may be subject to additional requirements, unless the activities are conducted by the resident and exclusively for the private non-commercial purposes of the resident. Residences engaged in business or commerce, or any activity conducted at residences for the purposes of business or commerce, whether for profit or not-for-profit, or publicly or privately owned, are subject to commercial- and/or industrial-related requirements as specified under the San Marcos Municipal Code (Municipal Code) and the *Commercial Urban Runoff Requirements Manual* (the Commercial Manual) and *Industrial Urban Runoff Requirements Manual* (the Industrial Manual).

2.1 Submittal Requirements

All residents are required to obtain necessary permits, license, and other approvals for any regulated activities conducted by the resident. Such approvals include business licenses, development permits, grading permits, and building permits. The resident should review City regulations and permit/licensing requirements to determine if such approvals are necessary.

2.2 General Requirements

Residential 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 residents 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.

2.2.1 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.

2.2.2 Conditional Non-Stormwater Discharges

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

2.2.2.1 Discharges Associated with Separate NPDES Permit

The Regional Water Quality Control Board (RWQCB) may permit a discharger to discharge water to the City's MS4, 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.

2.2.2.2 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 MS4s
- Springs
- Flows from riparian habitats and wetlands
- Direct discharges from potable water sources
- Direct discharges from foundation drains
- Direct discharges from footing drains

2.2.3 BMP Implementation

As previously stated, for all discharges of stormwater and non-stormwater to the City's MS4 or Receiving Waters, pollutants 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 MS4 or Receiving Waters, or that discharges any other waters or materials to the City's MS4 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 dischargers, if MEP has not been met.

The remainder of this Manual provides the City's minimum BMP requirements to assist regulated construction projects and activities in meeting the MEP standard.

2.3 BMP Requirements for All Dischargers

The following are BMP requirements for all dischargers 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 Residential Dischargers

Currently, the City has not developed any general minimum BMP requirements specific to the category of Residential dischargers. However, those requirements described in section 2.3 are applicable to all Residential dischargers in addition to all other dischargers in the City. Furthermore, Chapter 3 details requirements of specific activities conducted by Residential dischargers. Most of these activities are common activities of Residential dischargers and all Residential dischargers should review Chapter 3 for additional requirements.

Although there are no general minimum BMP requirements specific to the category of Residential dischargers, this section does include some general recommendations for all Residential dischargers. The following recommendations for Residential dischargers are described in this section:

- Annual Review of Residences and Activities
- Pollution Prevention
- Materials and Waste Management
- Vehicles and Equipment.

For a detailed discussion explaining BMP implementation requirements, refer to sections that follow.

3.1 Annual Review of Residences and Activities

The purpose of this requirement is to actively engage Residential dischargers in the identification and elimination of connections and practices that might otherwise lead to discharge violations. This is especially important for residences since they are not subject to other routines.

BMP Description

Visual inspections are crucial to preventing or identifying problems in a timely manner. Thorough periodic inspections of residences and the surrounding property must be conducted by Residential dischargers to ensure adequate BMP implementation and compliance with requirements. Yards, garages, and storage areas, if applicable, should be inspected periodically throughout the year.

Areas where water leaves the property should be visually inspected for evidence of, or the potential for, pollutants entering the street or other drainage ways. Measures to reduce pollutant loadings shall be inspected and evaluated to determine whether they are still adequate and functioning properly.

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.

3.2 Pollution Prevention

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 resident. Residences should review their current activities and determine if there are changes that they could make that would reduce the amount of pollutants that they generate.

3.3 Materials and Waste Management

BMP Description

Hazardous materials and wastes should be stored, managed, and disposed in accordance to label directions. Hazardous materials should be stored off the ground and in an enclosed or covered area. Drums and other containers should be kept in good condition and securely closed when not in use.

Spill of liquid or solid materials onto ground surfaces imposes great potential risk to urban runoff quality. If a spill occurs in an outside area that could be exposed to and washed off by precipitation, or otherwise transported off the property, the spill should be cleaned up immediately. Do not clean up spills by rinsing them down with a bucket of water or using a hose. Instead use “dry cleaning” methods that consist of collecting spilled materials physically or by absorbing them with towels. If additional cleaning is still required, use a broom or a mop as appropriate.

Significant spills shall be reported promptly using the various City reporting methods. Significant spills are those that 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. Vehicles and Equipment Residential dischargers should keep their vehicles and equipment properly maintained to prevent leaks and to keep other pollutants from the vehicles or equipment from entering urban runoff. Vehicles and equipment should be periodically checked during use and during storage to detect leaks. If leaks are identified, they should be repaired immediately and, in the interim, some type of containment such as drip pans should be used to collect the leaked materials so that they do not enter urban runoff.

3.4 Vehicles and Equipment

Residential dischargers should keep their vehicles and equipment properly maintained to prevent leaks and to keep other pollutants from the vehicles or equipment from entering Urban Runoff. Vehicles and equipment should be periodically checked during use and during storage to detect leaks. If leaks are identified, they should be repaired immediately and, in the interim, some type of containment such as drip pans should be used to collect the leaked materials so that they do not enter Urban Runoff. Refer to sections 4.1 and 4.2 of this Manual for specific regulations pertaining to vehicles and equipment.

4 Requirements for Specific Residential Activities

In addition to the requirements described in Chapters 2 and 3, the City developed requirements for specific common activities conducted by Residential dischargers. The activities in this Chapter, for which the additional regulations were developed, were determined to be potential sources of significant pollutants to the Stormwater Conveyance System and/or Receiving Waters

This chapter contains additional regulations for the following residential activities:

- Vehicle and Equipment Repair and Maintenance
- Vehicle and Equipment Washing
- Vehicle Parking
- Plant Care, Gardening, and Landscaping
- House Care and Household Hazardous Wastes
- Disposal of Animal and Pet Waste
- Disposal of Green Waste
- Private Sewer Laterals and Onsite Wastewater Systems

4.1 Vehicle and Equipment Repair and Maintenance

4.1.1 Applicability

The requirements in this section apply to repair and maintenance of motorized vehicles and equipment, including automobiles, boats, motorcycles, all-terrain vehicles, other motorized vehicles, lawn mowers, other motorized gardening equipment, gas-powered generators, and any other devices that require similar repair and maintenance.

4.1.2 Description of Impacts

Repair and maintenance activities have the potential to contribute many types of pollutants (such as motor oils, greases, antifreeze, solvents, trace metals and fuels) directly to the Stormwater Conveyance System or Receiving Waters when it rains or when residents wash off driveways and streets.

4.1.3 BMP Requirements

In addition to the applicable requirements in Chapters 2 and 3 of this Manual, the following BMPs or equivalent measures, methods, or practices are required of Residential dischargers for all vehicle and equipment repair or maintenance activities:

- Vehicle and equipment repair and maintenance activity shall be performed under a permanent roof or other permanent cover, if such space is available. Maintenance and repair activities that are conducted without cover or without BMPs to prevent pollutant discharges are prohibited during times of precipitation.
- Any release of fluids during repair or maintenance shall be promptly contained and cleaned up. Any absorbent materials used must be disposed of properly.
- Hazardous materials and wastes must be stored indoors, or under cover, or in secure and watertight containers.

4.1.4 Additional Recommended Measures

The following BMPs are not required, however, these and/or other BMPs may be required by the City if it determines that MEP has not been met. These BMPs are provided as recommendations for vehicle and equipment repair or maintenance activities to assist residents conducting those activities in selecting appropriate BMPs in order to achieve MEP:

- Perform maintenance and repairs on impervious surfaces such as concrete so that spills and other wastes deposited on the ground can be readily cleaned up.
- Prevent leaks and spills from contacting stormwater. Use drip pans, plastic sheeting, or other materials to catch and contain spills.
- Clean tools and parts only in contained areas that do not drain.
- Do not wash down maintenance and repair areas, instead clean them using “dry cleaning” methods such as using brooms and towels. Use mops as a last resort.
- Properly manage and dispose of wastes and materials, see section 4.5.
- Store batteries upright and indoors.
- Use commercial repair and maintenance facilities for major work that cannot be adequately supported at a residence.
- Keep the number of solvents used to a minimum to make recycling easier and to reduce hazardous waste management cost.
- Use non-hazardous cleaners when possible.
- Replace chlorinated organic solvents with nonchlorinated ones like kerosene or mineral spirits.

- Monitor parked or stored vehicles and equipment closely for leaks and pans placed under leaks to collect the fluids for proper disposal or recycling.
- Use reusable cloth rags to clean up drips and small spills instead of disposables: these can be professionally laundered and reused. Do not attempt to launder these at home or at a coin-operated laundry.

4.2 Vehicle and Equipment Washing

4.2.1 Applicability

The requirements in this section apply to washing of motorized vehicles and equipment, including automobiles, boats, motorcycles, all-terrain vehicles, other motorized vehicles, lawn mowers, other motorized gardening equipment, gas-powered generators, and any other devices with similar pollutant potential.

4.2.2 Description of Impacts

According to national surveys, 55 to 70 percent of households wash their own cars, with the remainder going to a commercial car wash. Pollutants generated by automobile washing can negatively impact water bodies through the excessive input of nutrient substances associated with phosphate-containing detergents, foaming agents, sediments, and a wide array of toxic substances including trace metals and various hydrocarbons. Runoff of washwater onto driveways, carports, streets, parking lots, etc. can carry these pollutants to storm drains or to other surfaces where they accumulate until rainfall subsequently washes them into the Storm Water Conveyance System and ultimately to Receiving Waters.

4.2.3 BMP Requirements

In addition to the applicable requirements in Chapters 2 and 3 of this Manual, the following BMPs or equivalent measures, methods, or practices are required of Residential dischargers for all vehicle and equipment washing activities:

- Vehicles and equipment shall be washed over pervious surfaces such as lawns and gravel areas where feasible.
- Remaining detergent solutions prepared for use in vehicle washing, but not used up in that process, may not be disposed by emptying buckets or other containers to the Stormwater Conveyance System or Receiving Waters. In addition the solutions may not be disposed of in areas that could drain to the Stormwater Conveyance System or Receiving Waters, such as driveways, sidewalks, and patios. Disposal to the sanitary sewer (e.g., through a sink, toilet, or floor drain) or to a pervious surface is required.
- The use of “hose off” or single use engine degreasing chemicals is prohibited, unless captured and disposed of properly.
- Motor vehicle washing other than individual residential motor vehicle washing is prohibited, unless all wash and rinse water is diverted to or contained and disposed to a porous area or the sanitary sewer.

4.2.4 Additional Recommended Measures

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 automobile, airplane, boat, and equipment washing and to assist residents conducting those activities in selecting appropriate BMPs in order to achieve MEP.

- Limit the use of detergents and/or other cleaners when washing.
- Use preventative practices to keep vehicles clean (i.e., park in a garage or carport, use a cover).

- Use “dry cleaning” methods to avoid the generation of wash and rinse water.
- Turn off the water when not in use or use a controllable spray nozzle that automatically turns off when left unattended.
- Establish neighborhood wash areas where washwater and contaminants can be properly managed.
- If washing cannot be conducted over pervious areas, divert the runoff washwater onto grass or landscaping to provide filtration.
- Use “dry” methods to decrease or clean especially dirty parts prior to “wet” washing and rinsing (e.g., remove grease or brake dust using towels).
- Use commercial wash facilities implementing proper BMPs to avoid the potential for pollution in residential neighborhoods. This is especially important while cleaning engines or the bottom of vehicles. Most commercial wash facilities reuse washwater several times before sending it to the sewer system for treatment.

4.3 Vehicle Parking

4.3.1 Applicability

The requirements in this section apply to the parking of any motorized vehicles in any location within the City.

4.3.2 Description of Impacts

Parked vehicles present a problem in urbanized areas due to their potential cumulative effects on water quality. Poorly maintained vehicles leak oil, antifreeze, and other fluids when parked. As a result, parking areas can contain heavy deposits of many automotive pollutants. These pollutants accumulate on driveway streets, parking lot surfaces, etc. and are directly transported to local Receiving Waters.

4.3.3 BMP Requirements

In addition to the applicable requirements in Chapters 2 and 3 of this Manual, the following BMPs or equivalent measures, methods, or practices are required of Residential dischargers for all vehicle parking:

- Residents shall remove excessive accumulations of oil and grease deposited by vehicles they own from parking areas, using “dry cleaning” methods (e.g., absorbents, scraping, vacuuming, or sweeping).
- Residents shall move vehicles from streets when notified to do so to allow street cleaning.

4.3.4 Additional Recommended Measures

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 vehicle parking and to assist residents conducting those activities in selecting appropriate BMPs in order to achieve MEP.

- Use routine preventative maintenance practices and to make timely vehicle repairs.
- Repair leaky vehicles immediately, and in the interim, carry and use a drip pan whenever parked to collect leak and eliminate depositing pollutants on the ground.
- Park over pervious surfaces, such as lawns, dirt, gravel, porous pavement, etc.
- Cover vehicle-parking areas.

4.4 Plant Care, Gardening, and Landscaping

4.4.1 Applicability

The requirements in this section apply to plant care and gardening activities such as plant and landscape maintenance, fertilization, and pesticide application.

4.4.2 Description of Impacts

Gardening can produce a variety of pollutants, such as including eroded soil, green waste, fertilizers, and pesticides. These untreated pollutants can be washed directly into 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 are contaminated. Even in small concentrations, toxic substances can harm aquatic plants and animals.

Improper or excessive irrigation is often the most important contributing factor in the introduction of home and garden-generated pollutants to the stormwater conveyance system. Excessive irrigation water mobilizes pollutants by dissolving and/or washing them into the Stormwater Conveyance System. In the absence of excessive irrigation water, these pollutants will often be broken down into non-toxic compounds or assimilated through natural processes. Green waste is a byproduct of gardening and other landscape maintenance activities and may contain insecticide, pesticide, and fertilizer residues. Green waste washed into surface waters increases the biochemical oxygen demand (BOD) of the water body resulting in the consumption of dissolved oxygen needed by aquatic organisms. Green waste washed into water bodies can also alter the natural flow and configuration of stream channels and suffocate sensitive benthic (bottom-dwelling) organisms.

4.4.3 BMP Requirements

In addition to the applicable requirements in Chapters 2 and 3 of this Manual, the following BMPs or equivalent measures, methods, or practices are required of Residential dischargers for all plant care, gardening, and landscaping activities:

- Irrigation systems should be adjusted to avoid excessive runoff.
- Spills of gardening chemicals, fertilizers, or soils to non-porous surfaces must be cleaned up, and properly disposed.
- Lawn and garden care products must be stored in closed labeled containers; or in covered areas; or off the ground under protective tarps.
- Household hazardous waste may not be disposed directly or indirectly to the trash or to the street, gutter or storm drain.

4.4.4 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 plant

care, gardening and landscaping and to assist residents conducting those activities in selecting appropriate BMPs in order to achieve MEP.

- 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.
- Improve mowing practices. Set the mower height so that no more than 1/3 of lawn height (no more than 1 inch total) is removed with each mowing.
- Compost landscaping waste. 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 sodding 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.

4.5 House Care and Household Hazardous Waste

4.5.1 Applicability

The requirements in this section apply to general house care activities. The requirements focus on the use and disposal of hazardous products and wastes by Residential dischargers. Numerous hazardous products are used at residences. These products are generally oils, cleaners, bleaches, paints, solvents, polishes, pesticides and glues, although there are several other types of hazardous products. The following is a list of the household hazardous products and wastes that are accepted at the regional collection facility.

- Aerosols
- All-purpose Cleaners
- Ammonia
- Antifreeze
- Automobile Cleaners
- Barbecue Lighter Fluid
- Batteries
- Brake Fluid
- Chlorine Bleach
- Detergents
- Disinfectants
- Drain Opener
- Furniture Polish
- Gasoline
- Glass Cleaner
- Herbicides
- Mothballs
- Motor Oil
- Oven Cleaner
- Paint
- Paint thinner
- Pesticides
- Rubber Cement
- Rug/upholstery Cleaner
- Scouring Powder
- Silver Polish
- Toilet-bowl Cleaner
- Transmission Fluid
- Tube and Tile Cleaner
- Turpentine Varnish
- Water Sealant
- Wood Finish

4.5.2 Description of Impacts

Household hazardous products and wastes require proper handling, storage, and disposal to prevent accidental releases. If introduced to surface waters, they can cause toxicity endangering aquatic ecosystems. Improper or excessive application and disposal, and spills are important contributing factors in the introduction of household hazardous pollutants to the Stormwater Conveyance System.

4.5.3 BMP Requirements

In addition to the applicable requirements in Chapters 2 and 3 of this Manual, the following BMPs or equivalent measures, methods, or practices are required of Residential dischargers for all house-care activities:

- Painting equipment may not be cleaned out in or over streets, sidewalks or gutters.
- Action shall be taken to minimize and contain all spills of hazardous materials, if it is safe to do so.
- Household hazardous materials must be stored indoors or under cover, and in closed and labeled containers.
- Household washwaters (carpet cleaning, mop water, washing machine effluent, other gray water, paint wash-up water) may not be disposed of to the street, gutter, or storm drain or to Receiving Waters. Disposal to the sanitary sewer (e.g., through a sink, toilet or floor drain) or to a porous surface is required.

4.5.4 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 house care and household hazardous waste and to assist residents conducting those activities in selecting appropriate BMPs in order to achieve MEP.

- Buy only hazardous products that are needed and only in quantities that will be used.
- If chemicals are not completely used, give them to someone who needs them or take them to a hazardous waste or recycling center that will accept them.
- Never dispose of household hazardous products in the regular trash or by putting them down the drain. Most sewage treatment plants cannot remove household cleaners, paints, solvents, and pesticides before returning the water to the environment.
- Do not flush harsh chemicals into a septic tank. This can damage its effectiveness by killing the soil microorganisms that process sewage. Harsh chemicals escape processing by the microorganisms and thus may contaminate the septic tank drain field.

4.6 Disposal of Animal and Pet Waste

4.6.1 Applicability

The requirements in this section apply to the disposal of animal and other pet waste including disposing any of the following: excrement dropped by animals, bedding and litter, and wastewater from bathing animals.

4.6.2 Description of Impacts

Pollutants from improperly disposed pet waste may be washed into storm sewers by rain. Storm sewers usually drain directly into our Receiving Waters. Since the Stormwater Conveyance System does not connect to treatment plants, untreated pet feces can become a major source of water pollution. When pet waste decays into the water, it uses up oxygen and sometimes releases ammonia. Low-oxygen levels

and ammonia combined with warm temperatures can harm the aquatic life. This not only kills fish, but may also place our health at risk. People exposed to contaminated waters are at risk for infection from some of the bacteria, parasites, or diseases found in pet waste. Diseases or parasites that can be transmitted from pet waste to human include the following: campylobacteriosis; cryptosporidium; toxocariasis; or toxoplasmosis.

4.6.3 BMP Requirements

In addition to the applicable requirements in Chapters 2 and 3 of this Manual, the following BMPs or equivalent measures, methods, or practices are required of Residential dischargers for all animal and pet waste disposal activities:

- Manure deposited by confined livestock, horses, or other large animals on uncovered areas, from which runoff could enter Receiving Waters or the Stormwater Conveyance Systems, must be cleaned up at least twice weekly and either be composted, or be stored prior to disposal in a manner that prevents contact with runoff to Receiving Waters or the Stormwater Conveyance System.
- Areas used for composting such manure must be located, configured, or managed to prevent runoff to Receiving Waters or the Stormwater Conveyance System.
- Pet waste shall not be disposed to the Stormwater Conveyance System or Receiving Waters, or in areas where it will drain untreated to the Stormwater Conveyance System or Receiving Waters.

4.6.4 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 disposal of animal and pet waste and to assist residents with those areas in selecting appropriate BMPs in order to achieve MEP.

- Always pick up pet waste, whether or not it's on a pervious area, and dispose of it in the toilet, by burying it, or in the trash.
- Flush pet waste down the toilet. The water from the toilet goes to a septic system or sewage treatment plant that removes most pollutants before the water reaches a lake or stream. For cat litter, do not flush down the toilet. The clay based cat litter will eventually clog the toilet.
- Bury pet waste in the yard. Dig a hole about one foot deep and place about five inches of waste at the bottom. Be sure to leave about seven inches of soil to cover the waste. If pet wastes are composted with yard and kitchen wastes (grass clippings, leaves, fruit peels, lettuce scrapes), the composted waste material can be used in all gardens except those used for edible root crops (e.g., carrots, beets, or potatoes) or foods that grow in contact with the soil (e.g., lettuce, cucumbers, or kale).
- Always carry a bag, shovel, pooper-scooper, grovels, and anti-bacteria wraps to pick up your pet waste immediately and safely while walking in the park or your neighborhood area.
- Carry your pet only to areas containing some type of animal facilities. For example, pet toilet or pet-waste stations.
- Have a certified veterinarian inoculate your pet. Pet waste can carry diseases because of pet illness. Each pet vaccinated at less than one-year of age shall be revaccinated 12 months after the initial vaccination. After the initial rabies vaccination, every pet shall be vaccinated at not more than three-year intervals with a three-year vaccine or at one-year intervals with a one-year vaccine.
- Post a sign on your yard to remind your neighbors to pick up their pet waste.

4.7 Disposal of Green Waste

4.7.1 Applicability

The requirements in this section apply to the disposal of green waste. Green waste is the solid waste resulting from gardening, such as leaves, grass, shrub clippings, garden and yard waste, brush and woody materials, trees trunks, holiday trees, tree trimmings, and prunings.

4.7.2 Description of Impacts

Green wastes clog the Stormwater Conveyance System and create flooding problems. Green waste washed into surface waters increases the BOD of the water body resulting in the consumption of dissolved oxygen needed by aquatic organisms. Green waste washed into water bodies can also alter the natural flow and configuration of stream channels and suffocate sensitive benthic (bottom-dwelling) organisms.

4.7.3 BMP Requirements

In addition to the applicable requirements in Chapters 2 and 3 of this Manual, the following BMPs or equivalent measures, methods, or practices are required of Residential dischargers for all green waste disposal activities:

- Green waste may not be disposed of to the street, gutter, public rights-of-way, storm drain, or to Receiving Waters.

4.7.4 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 disposal of green waste and to assist residents conducting those activities in selecting appropriate BMPs in order to achieve MEP.

- Dispose of green waste through the City's waste collection service
- Do not mix green waste with regular garbage.

4.8 Private Sewer Laterals and Onsite Wastewater Systems

4.8.1 Applicability

The requirements in this section apply to private sewer laterals and onsite wastewater systems, such as septic systems.

4.8.2 Description of Impacts

Private sewer laterals and onsite wastewater systems carry untreated sewage that can contain numerous pollutants, especially bacteria and excessive nutrients. Improperly maintained private sewer laterals and onsite wastewater systems can break, clog, or malfunction that may result in an overflow and discharge of raw sewage. Raw sewage poses an extremely high risk to the health of the natural environment as well as to humans.

4.8.3 BMP Requirements

In addition to the applicable requirements in Chapters 2 and 3 of this Manual, the following BMPs or equivalent measures, methods, or practices are required of Residential dischargers for all private sewer laterals and onsite wastewater systems:

- Private sewer laterals shall be cleaned, maintained, and when necessary replaced to prevent seepage and spills. Onsite wastewater systems shall be pumped, maintained, and when necessary modified or replaced to prevent spills.
- Spills from private sewer laterals and onsite wastewater systems shall be contained and cleaned up in a manner that minimizes any release of pollutants to the Stormwater Conveyance System or Receiving Waters.
- Any release from a private sewer lateral that enters the Stormwater Conveyance System or Receiving Waters shall be immediately reported to the City.
- Failed onsite wastewater systems shall be repaired or replaced, after issuance of all required permits and approvals.

4.8.4 Additional Recommended BMPs

Recommended BMPs have not been developed for private sewer laterals and onsite wastewater systems.