Construction Manual

1 Introduction

This *Construction Urban Runoff Requirements Manual* (Manual) details requirements developed by the City of San Marcos (City) as part of the City's Jurisdictional Runoff Management Program (JRMP). The City produced this Manual in conjunction with the amendments to the City's Municipal Code, Stormwater Management and Discharge Control Regulations and Grading Ordinance.

1.1 How to Use this Manual

This Manual is provided to assist construction project proponents in complying with the City's Stormwater Management and Discharge Control Regulations and Grading Regulations. Information is provided here to assist project proponents determine their applicability to the City's requirements, and it details the requirements that applicable projects 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 creeks, lakes, lagoons, 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 Regulated Construction Projects

This Manual establishes BMP requirements for project owners and contractors of regulated construction projects and activities in the City. A construction project is any construction activity that disturbs soil, structures or uses materials that may be discharged and enter the City's Stormwater Conveyance System, including streets, curbs, gutters and channels. For example, projects involving remodeling, tenant improvements, demolition and event new construction must adhere to the BMP requirements herein.

Responsible parties for regulated construction projects and activities include the owner of the property where the activity is taking place (including offsite staging areas), the construction contractor (including subcontractors), and any other individual or entity performing construction activities and/or deliveries to the site.

2.1 Submittal Requirements

Proponents of all regulated construction projects are required to obtain necessary permits, licenses, and other approvals for any construction activities as required by the City's Municipal Code. Such approvals include business licenses, development permits, grading permits, clearing and grubbing permits, building permits, and demolition permits. The responsible parties for regulated construction projects should review the City regulations and permit/licensing requirements to determine which approvals are necessary.

2.2 General Requirements

Regulated construction projects 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 stormwater discharges. Regardless of their type, all sites and activities are subject to the generally applicable BMP requirements presented in this Manual. Failure to comply with applicable discharge prohibitions is generally considered evidence of an inadequate BMP program, although BMPs can be determined 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 related to construction activities include, but are not limited to discharges from:

- Concrete Washout
- Saw-Cutting Activities
- Dewatering Activities
- Power-Washing
- Dust control
- Port-O-Potties
- Equipment Washing

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 Stormwater Ordinance.

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 RWQCB may permit a discharger to discharge water to the City's MS4, as long as the RWQCB 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 appropriate 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 Regulated Construction Projects. 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 Storm Drain 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 achieved by meeting the minimum BMP requirements prescribed by the City, then 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 regulated construction projects and activities in meeting the MEP standard.

2.3 BMP Requirements for All Dischargers

The following are BMP requirements for all discharges in the City. Each discharger, and therefore, all regulated construction projects, 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. Eroded soils are also a concern during the dry season when winds can pick up and transport what is termed "fugitive dust". Fugitive dust can simply be defined as airborne soil particles (suspended solids of silty soils, fine sands and clays). Fugitive dust in itself is a pollutant, but also transports attached pollutants, such as chemicals, including nutrients, pesticides, metals.

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

Although illicit connections are not an issue on new construction sites, they can be discovered on sites where remodeling and / or additions are taking place. 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 Threat Prioritization of Regulated Construction Projects

Should a project involve disturbance of soil or have the potential to pose a threat to urban stormwater runoff, the project will be subject to requirements to prevent effects to water quality. Every regulated construction projects is assigned a priority level of either High or Low) with respect to the threat the site poses to urban runoff water quality.

In order to determine the prioritization of a project, it is necessary to characterize the site with regards to size, planned period of activity, if applicable total area of proposed grading, vicinity to environmentally sensitive water bodies, project type, erosion potential, and potential to produce non-stormwater or polluted discharges. During the plan review stage and prior to the start of the project, the City will evaluate the site characteristics above to determine the priority level. As the project progresses, the priority level will be re-evaluated and adjusted accordingly.

4 Stormwater Pollution Prevention Plan Preparation Requirements

High priority projects are required to submit a SWPPP and an Erosion and Sediment Control Plan as part of the applicant's grading plans. Low priority sites are not required to submit a SWPPP, but may require the development, submission and implementation of an Erosion and Sediment Control Plan.

4.1 High Priority Construction Project Requirements

Projects determined to be a High Priority Construction Project, must submit a SWPPP prepared to meet the minimum requirements of the City's Municipal Code. Projects requiring coverage under the State Construction General Permit may submit a SWPPP prepared to meet the requirements of that permit; however coverage under the State Construction General Permit does not relieve the permitee of meeting the minimum BMP requirements presented in this Manual. In addition to the SWPPP, projects requiring coverage under the State Construction General Permit (CGP) must also submit a copy of the Notice of Intent for the project and the Waste Discharge Identification Number (WDID #) issued for the project. For sites requiring coverage under the State's CGP program the applicant must also include on the front page of the plan set the following information:

- CGP Application #,
- WDID#,
- Project estimated start and completion date,
- Project size (i.e. acres)
- All other applicable water related permits (US Army Corp, Fish and Wildlife, 401, 402 and/or 404 and etcetera, if applicable,
- Site QSD (Name, business name, telephone number and cell number),
- Site QSD (Name, business name, telephone number and cell number),

- Site QSP (Name, business name, telephone number and cell number),
- Site 24-hour emergency contact (Name, business name, telephone number and cell number),

Note, if the QSD, QSP or 24-hour emergency contact is change at any time throughout the course of the project the City's Stormwater Program, assigned City Building Inspector and designated Public Works Inspector must be notified within 48-hours via email.

5 Minimum BMP Requirements

The City has designated a set of minimum BMPs for Low and High Priority construction projects. Table 1 presents the minimum BMP requirements for each priority.

Stabilization of exposed slopes must be installed within 14 days of completion of the slope, and at least within 48 hours prior to a predicted storm event. Vegetation stabilization using hydroseed (SS-4) may be used only April 1 to September 30. Vegetation proposed to stabilize slopes must be installed by August 15th, watered, and established prior to October 1st. The permitee shall show on the plan a contingency physical BMP to be installed by October 1 if hydroseed establishment does not occur by that date.

The BMPs presented above represent the minimum BMPs that must be implemented for all projects. (i.e. Low Priority, High Priority and CIP)The implementation of the minimum BMPs does not relieve the permitee from complying with any other requirements of the City Municipal Code. It is the permitee's responsibility to develop and implement an effective plan, incorporating any and all BMPs deemed necessary by the permitee to meet the MEP standard and all other applicable requirements. In addition, the City may require additional BMPs be incorporated into the plan if the City determines that additional BMPs are necessary to ensure that discharge requirements will be met.

Table 1: Minimum Construction Site BMPs

ID	BMP Name	BMPs for Low Priority Projects	BMPs for High Priority Projects	BMPs to be Used When Applicable
TEMPORARY SOIL STABILIZATION				
SS-1	Scheduling	♦	♦	
SS-2	Preservation of Existing Vegetation	♦	♦	
SS-3	Hydraulic Mulch	♦[(a)]	♦[(a)]	
SS-4	Hydroseeding	♦[(a)]	♦[(a)]	
SS-5	Soil Binders	♦[(a)]	♦[(a)]	
SS-6	Straw Mulch	♦[(a)]	♦[(a)]	
SS-7	Geotextiles, Plastic Covers, and Erosion Control Mats	♦[(a)]	♦[(a)]	
SS-8	Wood Mulching			
SS-9	Earth Dikes/Drainage Swales and Ditches	♦	♦	
SS-10	Outlet Protection/Velocity Dissipation Devices			
SS-11	Slope Drains			

ID	BMP Name	BMPs for Low Priority Projects	BMPs for High Priority Projects	BMPs to be Used When Applicable
TEMPORARY SEDIMENT CONTROL				
SC-1	Silt Fence	♦[(c)]	♦[(c)]	
SC-2	Desilting Basin	♦[(c)]	♦[(c)]	
SC-3	Sediment Trap			
SC-4	Check Dam			
SC-5	Fiber Rolls		♦	
SC-6	Gravel Bag Berm			
SC-7	Street Sweeping and Vacuuming		♦	
SC-8	Sandbag Barrier			
SC-9	Straw Bale Barrier	♦[(c)]	♦[(c)]	
SC-10	Storm Drain Inlet Protection	♦	♦	
WIND EROSION CONTROL				
WE-1	Wind Erosion Control	♦	♦	
TRACKING CONTROL				
TC-1	Stabilized Construction Entrance/Exit	♦	♦	
TC-2	Stabilized Construction Roadway			
TC-3	Entrance/Outlet Tire Wash			
NON-STORMWATER MANAGEMENT				
NS-1	Water Conservation Practices			
NS-2	Dewatering Operations			♦
NS-3	Paving and Grinding Operations			♦
NS-4	Temporary Stream Crossing			♦
NS-5	Clear Water Diversion			♦
NS-6	Illicit Connection/Illegal Discharge		♦	
NS-7	Potable Water/Irrigation			♦
NS-8	Vehicle and Equipment Cleaning	♦	♦	
NS-9	Vehicle and Equipment Fueling	♦	♦	
NS-10	Vehicle and Equipment Maintenance	♦	♦	
WASTE MANAGEMENT AND MATERIALS POLLUTION CONTROL				
WM-1	Material Delivery and Storage	♦	♦	

ID	BMP Name	BMPs for Low Priority Projects	BMPs for High Priority Projects	BMPs to be Used When Applicable
WM-2	Material Use		♦	
WM-3	Stockpile Management		♦	
WM-4	Spill Prevention and Control		♦	
WM-5	Solid Waste Management		♦	
WM-6	Hazardous Waste Management			♦
WM-7	Contaminated Soil Management			♦
WM-8	Concrete Waste Management			♦
WM-9	Sanitary/Septic Waste Management			♦
WM-10	Liquid Waste Management			♦

a. The permitee shall select one of the five measures listed or a combination thereof to achieve and maintain temporary soil stabilization.
b. The permitee shall select one of the two measures or combination thereof to achieve site perimeter protection.
c. The permitee shall select one of the three measures or combination thereof to achieve site perimeter protection.