

# CONSTRUCTION ACTIVITIES STORMWATER MANAGEMENT PLANS

AN INFORMATION GUIDE



**DENVER**  
THE MILE HIGH CITY

Wastewater Management Division

Department of Public Works

City and County of Denver  
2006

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# PREFACE

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This guidance document identifies current requirements for the submittal of Construction Activities Stormwater Management Plans (Management Plan) for development and significant redevelopment within Corporate Boundaries of the City and County of Denver (Denver or City). These plans are required as the supporting documentation for issuance of the Construction Activities Stormwater Discharge Permit (Discharge Permit) which is required for construction sites defined under Section 2.0 of this document.

Compliance with the requirements identified in this guide is necessary for approval of an application for an erosion control stormwater discharge permit. Failure to comply with Denver rules and regulation may result in both civil and criminal penalties.

THIS DOCUMENT IS SUBJECT TO REVISION AT ANY TIME.

Contact the Water Quality/NPDES Section of the Department of Public Works Wastewater Management Division (WMD) at 2000 West 3rd Avenue, Denver Colorado 80223, to obtain information on recent revisions at (303) 446-3400, (303) 446-3589 fax or <http://www.denvergov.org/Portals/528/documents/Infoguide.pdf>

# Section 1

## INTRODUCTION

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The Construction Activities Stormwater Management Plans an Information Guide (**Information Guide**) provides a set of criteria and technical guidance for erosion, sediment, and stormwater quality control at construction sites. These criteria were developed to help mitigate (1) the increased soil erosion and subsequent deposition of sediment off-site and (2) other potential stormwater quality impacts during the period of construction from start of earth disturbance until final landscaping and other permanent structural stormwater quality measures are effectively in place. A Construction Activities Stormwater Management Plan (**Management Plan**) must be developed and submitted to the Department of Public Works to obtain a Construction Activities Stormwater Discharge Permit (**Discharge Permit**). Criteria for when a Management Plan is required are listed in Section 2 of the document.

*General Principles – Applicability.* Water quality must be addressed in the very beginning of the site development process to ensure that construction erosion control best management practices (**BMPs**) are incorporated into the site design and construction phasing. Benefits of this practice include better site designs and more cost-effective BMPs. Site planning and drainage planning should, whenever possible, occur concurrently with site grading and erosion and stormwater quality control planning.

Implementation and maintenance of erosion, sediment, and stormwater quality control measures are ultimately the responsibility of the property owner. Because site conditions will affect the suitability and effectiveness of erosion, sediment migration, and stormwater quality control measures, a plan specific to each site is required. In addition, should the approved plan not function as intended, and it is determined by the City that additional or revised measures are needed, the owner will have to implement such changes as needed to reduce soil erosion and sediment discharged from the construction site and to minimize other stormwater quality impacts.

### Construction Program Goals

This material has been developed in response to the "Construction Sites Program" requirements of the State of Colorado CDPS Permit # COS-000001, issued to the City and County of Denver, Colorado with the following goals in mind.

#### Program Goals:

Protect "state waters" and wetlands from damage caused by erosion, sedimentation, chemical wastes, or other pollutants arising from construction activity.

Improve the water quality of storm runoff to the maximum extent practicable.

Prevent accumulations of soil and debris, originating from construction activity, in the Municipal Separate Storm Sewer System (**MS4**) of Denver.

Prevent discharges of chemicals, chemical wastes, and other pollutants from construction sites.

Prevent migration of construction debris off site.

Prevent damage to properties adjacent to construction sites arising from sediment, debris, chemical wastes, or other pollutants.

Reduce soil loss from all construction sites to the maximum extent practicable.

#### Goal Attainment Policies:

1. All development, re-development, street, utility, pipeline, transmission line, and oil exploration projects are required to address erosion and sediment control and water quality issues by submitting plans to the Department of Public Works for review and approval.

2. All construction projects, whether required to obtain a permit or not, are subject to inspection and enforcement action by Wastewater Management Division (WMD) during the construction period.
3. Encourage the use of "Minimum Impact Design" concepts in all stages of project development and construction.
4. All plan reviews and subsequent approvals associated with a project should be completed before approval of the Management Plan and issuance of the Discharge Permit.

## **Performance Standards**

The general performance standards for erosion and sediment control work shall be as follows:

1. All regulated land disturbance activities shall be conducted in such a manner as to effectively reduce accelerated soil erosion, and reduce the movement or deposition of sediment off site.
2. All regulated land disturbance activities shall be designed, constructed, and completed in such a manner that disturbed land shall be exposed for a minimum period of time.
3. Soil stabilization measures shall be implemented within fourteen (14) days following completion of grading activities.
4. All sediment resulting from accelerated soil erosion shall be removed to the maximum extent practicable from storm or surface runoff prior to leaving the site.
5. All temporary facilities for conveying water around, through, or from land disturbed by construction activity shall be designed and constructed so as to limit flows to non-erosive velocities.
6. All temporary erosion and sediment control facilities shall be removed and locations permanently stabilized when land disturbing activities are completed.
7. Revegetation or stabilization of disturbed land shall take place immediately upon completion of construction activity in that part of the development.
8. All construction wastes, fuel, lubricants, chemical wastes, trash, or debris shall be contained on site and protected from contact with rainfall or surface runoff.
9. All chemical wastes, sanitary waste, trash, debris, or contaminated soil shall be periodically removed from the construction site and disposed of properly.

## **Construction Related Permits**

Below is a chart of common construction and land disturbance activities and required permits. This list is provided to assist with planning, scheduling, and completing construction projects in Denver. It is not intended to be a complete list of all regulated activities or permits that may be required for your project. If your proposed activity is not listed on the following table this does not necessarily mean that the activity is not regulated.

**Table 1  
Construction Related Permits**

<b>Activity</b>	<b>Type of Permit</b>	<b>Contact Information</b>	<b>References</b>
<b>Construction or demolition of any building</b>	Building Permit	Building Department Phone: 720-865-2705 Fax: 720-865-2880	<a href="http://www.denvergov.org/default.asp?depid=416">http://www.denvergov.org/default.asp?depid=416</a>
	Sewer Use and Drainage Permit	Public Works Permit Operations Phone: 303-446-3759 Fax: 303-446-3755	<a href="http://www.denvergov.org/Permit_Operations/default.asp">http://www.denvergov.org/Permit_Operations/default.asp</a>
<b>1 Acre or larger (re) development or sale plan</b>	Construction Activities Stormwater Discharge Permit (CASDP)	Public Works Permit Operations Phone: 303-446-3759 Fax: 303-446-3755	<a href="http://www.denvergov.org/Permit_Operations/default.asp">http://www.denvergov.org/Permit_Operations/default.asp</a>
	Stormwater Construction Permit	Colorado Department of Public Health and Environment Water Quality Control Division Phone: 303-692-3500	<a href="http://www.cdphe.state.co.us/wq/PermitsUnit/stormwater/construction.html">http://www.cdphe.state.co.us/wq/PermitsUnit/stormwater/construction.html</a>
<b>Sites part of a 1 acre or larger development or sale plan</b>	CASDP	Public Works Permit Operations Phone: 303-446-3759 Fax: 303-446-3755	<a href="http://www.denvergov.org/Permit_Operations/default.asp">http://www.denvergov.org/Permit_Operations/default.asp</a>
	Stormwater Construction Permit	Colorado Department of Public Health and Environment Water Quality Control Division Phone: 303-692-3500	<a href="http://www.cdphe.state.co.us/wq/PermitsUnit/stormwater/construction.html">http://www.cdphe.state.co.us/wq/PermitsUnit/stormwater/construction.html</a>
<b>Significant potential for erosion, based on site characteristics including topography</b>	CASPD	Public Works Permit Operations Phone: 303-446-3759 Fax: 303-446-3755	<a href="http://www.denvergov.org/Permit_Operations/default.asp">http://www.denvergov.org/Permit_Operations/default.asp</a>
<b>Site disturbing contaminated soils</b>	CASDP	Public Works Permit Operations Phone: 303-446-3759 Fax: 303-446-3755	<a href="http://www.denvergov.org/Permit_Operations/default.asp">http://www.denvergov.org/Permit_Operations/default.asp</a>
	Sewer Use and Drainage Permit		

**Table 1  
Construction Related Permits (cont.)**

Activity	Type of Permit	Contact Information	References
<b>Site is within the designated 100 year floodplain Disturbing or placing fill in Waters of the US</b>	CASDP	Public Works Permit Operations Phone: 303-446-3759 Fax: 303-446-3755	<a href="http://www.denvergov.org/Permit_Operations/default.asp">http://www.denvergov.org/Permit_Operations/default.asp</a>
	Wetlands - 404	Army Corps of Engineers Denver Regional Office Phone: 303-979-4120	<a href="http://www.usace.army.mil/cw/ecwo/reg/">http://www.usace.army.mil/cw/ecwo/reg/</a>
<b>Construction and foundation dewatering</b>	Minimum Industrial Discharge Permit	Colorado Department of Public Health and Environment Water Quality Control Division Phone: 303-692-3500	<a href="http://www.cdphe.state.co.us/wq/PermitsUnit/landD/070000DewateringApplication.pdf">http://www.cdphe.state.co.us/wq/PermitsUnit/landD/070000DewateringApplication.pdf</a>
<b>Projects disturbing 25 or more acres</b>	Air Pollutant Emission Notice	Colorado Department of Public Health and Environment Air Pollution Control Division Phone: (303) 692-3100	<a href="http://www.cdphe.state.co.us/apconperm.html#Applying%20for%20a%20Colorado%20Air%20Permit">http://www.cdphe.state.co.us/apconperm.html#Applying%20for%20a%20Colorado%20Air%20Permit</a>
<b>Projects disturbing less than 25 acres lasting more than 6 months in duration</b>	Air Pollutant Emission Notice	Colorado Department of Public Health and Environment Air Pollution Control Division Phone: (303) 692-3100	<a href="http://www.cdphe.state.co.us/apconperm.html#Applying%20for%20a%20Colorado%20Air%20Permit">http://www.cdphe.state.co.us/apconperm.html#Applying%20for%20a%20Colorado%20Air%20Permit</a>

Note: Please contact Denver's Public Works Permit Operations and Community Planning and Development Departments for more information, at [www.denvergov.org](http://www.denvergov.org) related to your specific situation.

## Section 2

### When is a Water Quality Erosion Control Permit Required?

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Denver currently has two (2) levels of erosion control water quality permits applicable to construction sites.

#### Sites Requiring SUDP

##### (<One Acre and Exempt from Construction Activities Discharge Permit)

Sites less than one (1) acre in size are handled using standard language that is incorporated into the body of a SUDP. Generally, stormwater pollution prevention permit conditions are issued for the following construction related activities:

1. Construction of private sanitary or storm sewer systems
2. Groundwater remediation
3. Interior commercial tenant finish work
4. Construction related to both permanent and temporary structures
5. Single and multi-family residential redevelopment

The SUDP contains both site specific and standard language as a permit condition. These conditions require the property owner, developer, or authorized agents to clean up sediment or pollutant discharges on a daily basis to prevent adverse impacts to receiving waters. These permit conditions can be enforced by levying of civil penalties of up to \$10,000 a day, pending the severity of the infraction.

The SUDP permit condition language is as follows:

"The Owner, Site Developer, Contractor, and/or their authorized agents shall remove, to the maximum extent practicable, sediment, mud, construction debris, or other potential pollutants that may have been discharged to or accumulated in the flow lines, storm sewer appurtenances, and public rights of ways of the City and County of Denver as a result of construction activities associated with this permit. All removals shall be conducted daily to prevent adverse impacts to receiving waters."

Exceptions to this permit are listed in the following paragraph of this guide. Please contact Denver's Department of Public Works if you have questions as to whether a SUDP or a Discharge Permit is required for your particular situation.

#### Sites Requiring Discharge Permit

##### (≥ One Acre and Non-Exempt Smaller Sites)

A Construction Activities Stormwater Discharge Permit (**Discharge Permit**) is required for construction sites that fall into any of the following categories:

1. Proposed construction sites with estimated areas of disturbance equal to or greater than one (1) acre,
2. The site is part of a 1 acre or larger development or sale plan,
3. The site has been identified by WMD as having a significant potential for erosion, based on site characteristics including steep topography,
4. The site is known to contain contaminated soils on site, and
5. The site is within the 100 year designated floodplain of a drainage way.

Projects for underground utilities, street improvements or resurfacing, drainageway improvement, and landscaping shall require a Discharge Permit if the project impacts an area of 1 acre or more.

Some examples of non-exempt site conditions are, properties located in direct or close proximity to drainage features, or if significant elevation changes occur across the site, or when the project is part of a larger sale plan or filling, etc. Please contact Denver's Department of Public Works if you have questions as to whether a SUDP or a Discharge Permit is required for your particular situation.

Payment of permit fees is required upon both submission of the permit application and issuance of the Discharge Permit.

*Note: This permit is required in addition to any similar permits issued by the State of Colorado under its Colorado Discharge Permit System (CDPS).*

## **Estimating Area of Disturbance**

Denver uses the following definitions for "area of disturbance" when assessing the need for a Discharge Permit. The following excerpt was taken from the *State of Colorado Stormwater Fact Sheet – Construction, Updated 6/2005*:

### ***"What is the total estimated area of disturbance?"***

*The area of disturbance is the total area at the site where any construction activity is expected to result in disturbance of the ground surface. This includes any activity that could increase the rate of erosion, including, but not limited to, clearing, grading, excavation, and demolition activities, as well as haul roads and areas used for staging where traffic will result in the disturbance of the ground surface. Construction does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of the facility."*

For example, a Discharge Permit is not required for a roadway resurfacing project that requires milling and overlay; however a Discharge Permit is required for roadway reconstruction projects that require removal, grading and pavement reinstallation to complete the project.

To determine the disturbance area for utility and street improvement projects, the following guidelines shall be followed.

1. If the project does not fall within public Right-of-Way (R.O.W.),
  - a. Define the construction limits of the project.
  - b. Include all construction areas involved with the project.
  - c. Include all areas to be used for equipment ingress, egress, and material storage.
  - d. Indicate the calculated disturbance area enclosed by the construction limits.
2. If the project falls within public R.O.W., the area is calculated as follows:  
Area = (1/2 R.O.W. Width x Project Length) + areas used for lay down, ingress, and egress.

Note: If the area, as defined by the above procedures, equals one acre or more, a Discharge Permit is required. Utility construction plans that are for a development site already covered by a WMD-issued Discharge Permit are bound by the requirements of that permit and will not require a separate permit.

## Who Applies for Permit Coverage

The applicant must be a legal entity that meets the definition of either the owner and/or developer and/or their authorized agent of the construction site, in order for this application to legally cover the activities occurring at the site. The applicant must have day-to-day supervision and control over activities at the site and implementation of the Construction Activities Stormwater Management Plan (**Management Plan**) discussed in Section 3. Although it is acceptable for the applicant to meet this requirement through the actions of a contractor, as discussed in the examples below, the applicant remains liable for violations resulting from the actions of their contractor. Examples of acceptable applicants include:

1. **Owner or Developer** - An owner or developer who is operating as the site manager or otherwise has supervision and control over the site, either directly or through contract with an entity such as those listed below.
2. **Contractor** - A contractor with contractual responsibility and operational control (including Management Plan implementation) to address the impacts construction activities may have on stormwater quality.
3. **Other Authorized Agents/Contractors** - Other agents, such as a consultant acting as construction manager under contract with the owner or developer, with contractual responsibility and operational control to address the impacts construction activities may have on stormwater quality (including Management Plan implementation).

An entity engaged in construction activities may be held liable for operating without the necessary permit coverage if a site does not have a Discharge Permit in place that is issued to either an owner and/or operator. For example, if a site, or portion of a site, is sold or contractors change, so that the site's Discharge Permit is then held by a permittee that is no longer either the owner or operator (such as the previous owner or contractor), that permit will no longer cover the new operator's activities, and a new Discharge Permit must be issued, or the current permit amended. Refer to the following for additional guidance on scenarios with multiple owners and/or operators. A separate Discharge Permit is not needed for subcontractors, such as utility service line installers, whose activities result in earth disturbance, but where the permittee or their contractor is identified as having the operational control to address the impacts their activities may have on stormwater quality.

## Permitting for Developments with Multiple Owners and/or Operators

For situations where multiple entities meet the definition of owners and/or operators for different portions of a development (e.g., a single development with multiple lots being owned and operated by separate entities), it is essential that the permittees, owners, and operators at the site correctly follow the guidance on who may apply for coverage under the Discharge Permit.

When a portion of a permitted site is sold to a new owner, a Discharge Permit must be in place that is held by an entity meeting the definition of owner and/or operator of that sold lot.

This may be accomplished in one of the following ways:

**Amending the Existing Discharge Permit** – Activities at the sold lot may be covered under an existing Discharge Permit for the project if the current permittee meets the definition of operator for the sold lot. To meet the definition of operator, the permittee must have contractual responsibility and operational control to address the impacts that construction activities at the sold lot may have on stormwater quality (including implementation of the Management Plan for the lot). Therefore, a contract must exist assigning this responsibility to the permit holder on behalf of the new owner and/or operator.

**A New Discharge Permit** – A new Discharge Permit may be issued to the new owner and/or operator of the sold lot. The existing permittee and the new owner and/or operator complete an amendment request and revised Management Plan to remove the lot from the existing Discharge Permit and cover it under a new Discharge Permit issued to the owner and/or operator of the sold lot.

### **Permit Expiration and Resubmittal Requirements**

Management Plans expire if construction has not commenced within twelve (12) months of the approval of the plan. Previously accepted Management Plans must be resubmitted to the Public Works Permit Operations counter when any of the following occur:

1. A change in ownership of the property to be disturbed
2. Proposed development changes to the site
3. Proposed grading revisions

## Section 3

### MANAGEMENT PLAN DEVELOPMENT

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All (re)development projects including demolition projects, meeting the criteria listed in Section 2 that are located within the corporate boundaries of the City and County of Denver are required to address water quality impairment of precipitation induced runoff from the project site. The level of effort and technical response identified in the Construction Activities Stormwater Management Plan (**Management Plan**) requirements will vary depending on the type and size of project. The applicant is required to submit a Sewer Use and Drainage Permit application accompanied by a Management Plan to obtain a Construction Activities Stormwater Discharge Permit (**Discharge Permit**). **No** clearing, grading, demolition, or other construction activities are allowed until the Discharge Permit is issued and Wastewater Management Division has performed an initial inspection of the construction site ensuring compliance with the approved Management Plan.

### Management Plan Requirements

All permitted construction projects are required to address sediment and erosion control throughout development and implementation of a Management Plan to minimize stormwater pollution to the maximum extent practicable. For example, this requirement applies to all private or public new development or re-development construction projects where there is to be any excavation, trenching, or other disturbance of the existing ground surface.

The Management Plan consists of the following requirements:

1. Narrative Report Worksheet
2. Proposed site drawings and Best Management Practice (BMP) installation details as they apply to the site conforming to the URBAN STORM DRAINAGE CRITERIA MANUAL, Vol. 3, "Best Management Practices", 1992, (last revised October, 2005) Urban Drainage and Flood Control District (UDFCD Vol. 3)
3. Supporting documentation related to proposed BMPs that are not currently identified in UDFCD Vol. 3

The Narrative Report and construction plans and documents should fully address the methods to be used to prevent sediment, debris, and other pollutants from entering the Municipal Separate Storm Sewer System (MS4) located in and around the project area. Proposed BMPs should be described with appropriate details in the Management Plan and shall focus on Minimum Impact Design as a primary BMP.

After reviewing the proposed Management Plan, the Public Works reviewer will either issue the Discharge Permit or will provide comment regarding needed modifications to the Management Plan. The permit outlines any site specific compliance conditions and serves as a conditional authorization to discharge treated stormwater from a construction site.

### Professional Engineer Requirements

Due to the technical nature of the design of erosion and sediment controls, Colorado State Statutes require that Management Plans be prepared by or under the responsible charge of a Professional Engineer registered in the State of Colorado (see Colorado State Engineering Law 12-25-101, General Provisions). Non-Professional Engineers with experience in erosion and sediment control may assist in the development of a Management Plan, but they must conduct their work under the supervision of the Professional Engineer. It is the responsibility of the Professional Engineer to use professional judgment in the development of the Management Plan. If the Professional Engineer determines that any requirements, as applied to their specific project, pose a safety hazard, it is the Engineer's responsibility to notify the permit reviewer of these issues, as well as to recommend an approach to alleviate the concerns.

## Management Plan Design Considerations

Minimum Impact Design involves the planning and design of development projects so that construction activities will not adversely affect adjoining property, wetlands, drainage facilities, or "state waters." Incorporate design elements that will minimize the impact of site runoff on the water quality of downstream waters. When dealing with erosion control and sedimentation issues Minimum Impact Design considerations include disturbing a minimum amount of area for a minimum amount of time.

Some aspects of Minimum Impact Design that relate to erosion and sediment control and water quality would include:

1. Grading, excavation, or clearing and grubbing operations should disturb the smallest practical area of vegetated, stable soil. Those parts of the site that are not going to be built on immediately should stay in a natural state until grading is necessary.
2. Natural on-site vegetation should be used as part of the "Best Management Practices" used to control erosion, sedimentation, and to improve water quality. Naturally vegetated stable soil is the best defense against erosion. Use of existing vegetation for buffer strips is also more cost effective than attempting to re-establish a vegetated surface.
3. When grading is complete, topsoil stripped off and stockpiled during the grading operations should be redistributed on the site. The goal is to place most of the original organic material where it can best be used to establish a good seedbed for re-vegetation operations.
4. Development of the site should fit the existing topography so that grading can match existing contours and existing natural drainage can be preserved. This allows earth moving activities to be kept to a minimum, preserving the topsoil. This also minimizes the need for temporary sediment entrapping methods.
5. Large sites should be "phased" in such a way that grading, construction, and stabilization are completed with the phase reaching an acceptable level of stabilization before grading begins on the next adjoining phase. Ideally, acceptable stabilization is achieved when the density of the vegetation cover has reached 70% of pre-developed levels or application of acceptable levels of mulch and/or tachifiers.
6. Construction schedules should be as specific as possible; and take into account:
  - a. Minimizing the time between grading startup and application of seed and mulch after final grade is reached. Mulching of the site should be completed within 14 calendar days after grading operations are finished in any area even if the area is going to be built on right away.
  - b. Time of the year: every effort should be made to minimize site exposure during the peak rainy period of April 15 through September 15.
  - c. Growing season: in order to allow for the best possible seeding success and vegetation growth.
  - d. Paving streets: at least with aggregate as soon as possible after street profiles have been graded in.
7. Re-vegetation of graded areas is the first best possible means of stabilizing soil. Seeding, surface roughening, mulching, applying tachifier, or use of geotextiles and matting to stabilize sites should occur no later than fourteen (14) days after completion of grading.
8. Fill areas requiring minimum compaction to 90% Proctor or higher should be kept to a minimum in proposed landscape areas as re-vegetation will be more difficult in compacted soil.
9. Soil stockpiles that will remain for more than thirty (30) days or are close to existing drainageways need to have perimeter containment measures installed prior to beginning stockpile construction and stabilization within fourteen (14) days of stockpile construction.
10. Sites should be designed with specific areas set aside for equipment maintenance and fueling; and designated areas for chemical, fuel and oil, construction materials, and waste storage that minimize the contact between stored materials and rainfall or runoff. Spill prevention, containment, and cleanup protocols should be prepared and enforced.

For Minimum Impact Design to be most effective, the concepts need to be applied to the earliest design phases of a development. It must also be remembered that the construction process is not a static process, so that the Minimum Impact Design concepts used must evolve as the design and construction of the project evolves.

## **Narrative Report Information Worksheet**

The Narrative Report Information Worksheet (**Worksheet**) is required to be completed and submitted as part of the Management Plan. This Worksheet is found in Attachment B of this document. It can be used as the narrative portion of the Management Plan for a simple project or as an outline for more detailed written narrative reports for larger more complex project Management Plans.

The Worksheet information should be used to identify the types and locations of BMPs that may be needed on-site to deal with specific problem areas or conditions. This information should also be used in planning the phased placement of appropriate BMPs.

## **Site Drawings and Installation Details**

The information listed below shall be included on one or multiple site maps. The map(s) shall use one of the following scales; 1"=20', 1"=30', 1"=40', 1"=50' or 1"=100'. The scale selected must be suitable for practical use and readability. The contour interval for these plans shall be one (1) foot.

1. Existing and Proposed Topography
2. Include topographic sections across the site showing both existing and proposed grades
3. Both existing and proposed grading contours must be legible and have elevations clearly marked
4. All existing or proposed topography contours shall be shown with one (1) foot contour intervals
5. Contours should extend 100 feet beyond the project boundaries.
6. Location of existing structures on site
7. Structures subject to demolition are to be clearly marked
8. Location of structures or natural features within 100' of site boundary
9. Locations of nearby floodplains
10. Locations of proposed structures
11. Limits of grading and clearing
12. Locations of storage areas including:
13. Equipment
14. Fuel/lubricants
15. Materials, chemicals and waste storage
16. Equipment maintenance and fueling
17. Soil stockpiles
18. Borrow pits
19. Locations of contaminated areas
20. Locations of construction entrances
21. Locations for all storm runoff discharge points at site boundaries or internal to site if a drainage way is located on-site. Locations for all proposed BMPs
22. Locations for all containment areas for chute washout
23. All applicable NPDES Standard Notes
24. Installation Details of all proposed BMPs
25. Structural details for all proposed permanent water quality BMPs

26. Professional Engineer's stamp and signature

### **Miscellaneous Technical Information (1 copy required)**

Copies of the following plans must be submitted with the application if the plans have been prepared. If reports have not been prepared at the time of application, submittal should occur when plan is developed.

Issuance of a Construction Activities Stormwater Discharge Permit may be delayed until these plans have been reviewed:

1. Drainage Report (required)
2. Soils/Geotechnical Studies (required)
3. Environmental Audits (for sites under environmental remediation)

### **Additional Documentation and Correspondence**

1. Copies of applications for CDPS Permits
  - a. Stormwater Discharge Associated with Construction Activity
  - b. Minimal Discharge Industrial Wastewater Permit
  - c. Construction Dewatering Permits
  - d. Fugitive Dust or other Air Pollution Permits
2. Copies of correspondence with other governmental jurisdictions
  - a. Wetlands
  - b. Floodplains
  - c. Waterways
  - d. Discharges to or from other jurisdictions
3. Copies of agreements with adjacent land owners
  - a. Use of land for material storage or laydown
  - b. Stabilization and restoration of disturbed areas
  - c. Acceptance of flow to or from adjacent sites

## Section 4

### REQUIRED MINIMUM BEST MANAGEMENT PRACTICES

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The following represents the minimum best management practices (**BMPs**)<sup>1</sup> requirements for a construction site in Denver. Additional BMPs may be required by Denver, on a site by site basis.

#### Minimum Site BMP Requirements

The following BMPs are required for **all** permitted construction sites:

1. Vehicle Tracking Control: This BMP is required at all access points to a construction site that are used by vehicular traffic or construction equipment.
2. Inlet Protection: This BMP is required on all existing or proposed storm sewer inlets in the vicinity of the construction site that may receive site runoff. The BMP must be appropriate to the type of storm inlet and appropriate for the ground surface at the inlet.
3. Site Stabilization: This BMP is required to provide a measure for preventing the discharge of sediment from construction sites where overlot grading of the site has occurred. This BMP is particularly necessary on sites where construction activities will be limited to small areas of the graded site. Acceptable BMPs include:
  - a. Preserving existing vegetation
  - b. Seeding and planting
  - c. Mulching
  - d. Mulching and seeding
  - e. Temporary/Permanent re-vegetation operations
  - f. Chemical soil stabilizer application (requires WMD approval)
4. Spill Prevention/Containment: This BMP defines the measures proposed for preventing, controlling, or containing spills of fuel, lubricants, or other pollutants and protecting potential pollutants from contact with precipitation or runoff.
5. Chute Washout Containment: This BMP requires that a containment area be designated for the washout of cement truck delivery chutes. This containment area is to be bermed so that wash water is totally contained. Water discharged into the containment area is allowed to infiltrate or evaporate. The dried cement waste is removed and properly disposed of.
6. Street Sweeping: This BMP requires that paved surfaces which are adjacent to construction sites be swept by the close of that business day when sediment and other materials are tracked or discharged on to them. Either sweeping by hand or use of Street Sweepers is acceptable. Street sweepers using water while sweeping is preferred in order to minimize dust. Flushing off paved surfaces with water is prohibited.
7. Perimeter Control: This BMP requires that a construction site install a perimeter control measure along the edge of the construction site to prevent, or filter the surface runoff leaving the construction site. The type of perimeter control used shall be determined based on site and location. Maintenance and repair of the control measure shall occur as needed, in a timely manner, but not longer than seven (7) days from the date identified.

#### Site Specific BMP Requirements

Individual construction sites may have site characteristics that require the application of specific BMPs for erosion and sediment control. These site-specific BMP requirements are in addition to those previously listed.

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<sup>1</sup> UD&FCD Volume III Manual is to be used as the Minimum Technical Reference

## **Proposed On-site Storm Runoff Detention Facility**

Development sites that are required to provide detention and water quality enhancement facilities for storm runoff need to install the detention facilities early in the construction build-out of the site. This will allow the facility to be used as a sediment basin for entrapping sediment and construction debris during construction.

## **Potential for High Flow Conditions**

Construction sites that are located within designated floodplains, or have areas tributary to the site which may generate large volumes of runoff, need to be protected by BMPs that provide flow control and diversion. Acceptable BMPs include: slope drains, temporary swales and channels, diversion dikes, coffer dams, sand bag barriers, etc.

## **Steep Slopes**

Construction sites that have slopes 3:1 or steeper will require the use of a BMP to prevent or minimize slope erosion. The following BMPs are applicable to this situation:

1. **Geotextiles and Matting:** This BMP uses fabric, jute matting and other materials to provide a surface cover on slopes to minimize erosion from raindrop impact or sheet flow runoff. Geotextiles and matting typically require measures to attach the material to the slope.
2. **Slope Roughening/Terracing:** Slope roughening is similar to the agricultural erosion measure known as contour plowing where furrows are plowed along elevation contours. Care must be taken to prevent foot or vehicular traffic across areas where this BMP is used as even minimal traffic can destroy the BMP's effectiveness.
3. **Chemical Soil Stabilizer Application:** Polyacrylamide and other chemical soil stabilizers may be used providing data has been submitted to verify that the product is effective for the intended use, and is environmentally safe with low toxicity. Copies of the material safety data sheets (MSDS) for the soil stabilizer must be submitted in the Management Plan.

## **On Site Drainageway**

Construction sites that are adjacent to drainageways, have a drainageway within the site, or are constructing a drainageway within the site need to provide BMPs for the following:

1. **Instream Velocity Reduction/Sediment Entrapment:** This would involve the use of Check Dams, Sediment Traps or similar measures to reduce the velocity of flow and entrap sediment. Drainage ways, waterways, flood plains, streams, state waters, etc. should not be used as sediment collection facilities. BMPs should be used to control sediment from entering these areas.
2. **Temporary Stream Crossing:** This type of BMP is required where repeated crossing of a drainage way by construction equipment may be necessary and may require permits from the Army Corps of Engineers.

## **Contaminated Site**

Developers or contractors proposing construction on sites where there is known contamination by toxic, radioactive, or other hazardous material need to provide discussions of the measures proposed for remediation of the site including BMPs for:

1. Stockpile Protection and Stabilization
2. Contaminated Materials Handling/Transportation

## **Owner Inspections**

The Narrative Report must include a description of procedures to inspect the vegetation, erosion and sediment control measures, and other protective measures identified in the plan. For sites where construction has not been completed, the owner/developer or their representative shall make a thorough inspection of their stormwater management system at least every seven (7) days and after any precipitation or snowmelt event that causes surface erosion. These inspections shall be kept on-site in a written format and conducted during the progress of the work, during work suspensions, and until final acceptance of site stabilization by City inspectors. The person making these inspections must have successfully passed an Erosion Control Supervisor Training Course in the state of Colorado. Please call The City's Wastewater NPDES Section at (303) 446-3400 for a list of qualified training programs.

1. The construction site perimeter, disturbed areas, and areas used for material storage that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the plan shall be observed to ensure that they are operating correctly.
2. The description of potential pollutant sources, and the pollution prevention and control measures identified in the plan, shall be revised and modified as appropriate based on the results of the inspection as soon as practicable after such inspection. Modification to control measures shall be implemented in a timely manner, but in no case more than seven (7) calendar days after the inspection.
3. The operator shall keep a record of inspections. Uncontrolled releases of mud or muddy water or measurable quantities of sediment found off the site shall be recorded with a brief explanation as to the measures taken to prevent future releases as well as any measures taken to clean up the sediment that has left the site. Inspection records shall be made available to the City upon request. The owner/developer shall make a thorough inspection of their stormwater management system at least every fourteen (14) days for sites where all construction activities are completed but final stabilization has not been achieved because planted vegetative cover has not become established. When site conditions make this schedule impractical, the owner/developer may petition the City to grant an alternative inspection schedule. These inspections must be conducted in accordance with the above paragraphs.

## **Maintenance**

A detailed description of the maintenance program for sediment control facilities, including inspection programs, vegetative establishment on exposed soils, method and frequency of removal and disposal of waste materials from control facilities, and disposition of temporary structural measures shall be included. The description shall include a program for continuous maintenance of erosion and sediment control features so that they function properly during construction and work suspensions until the project is fully stabilized and accepted by the City.

## **Section 5**

### **REQUIRED STANDARD NOTES**

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The following are a series of Standard Notes concerning erosion and sediment control and water quality that need to be included on all applicable sanitary and storm sewer construction drawings, building construction drawings, utility construction plans, grading plans, and construction activities stormwater management plans submitted for review and approval.

Alternative language for these notes will require the prior approval of the Public Works plan reviewer.

#### **STANDARD NOTE # 1**

"The Owner, Site Developer, Contractor and/or their authorized agents shall remove all sediment, mud, construction debris, or other potential pollutants that may have been discharged to or, accumulate in, the flowlines, storm drainage appurtenances, and public rights of ways of the City and County of Denver as a result of construction activities associated with this site development or construction project. Said removal shall be conducted in a timely manner."

#### **STANDARD NOTE # 2**

"This Construction Activities Stormwater Management Plan has been submitted as part of an application for a Construction Activities Stormwater Discharge Permit filed with the Wastewater Management Division of the City and County of Denver. I understand that additional erosion and sediment control measures may be required of the owner and his or her agents due to unforeseen erosion problems or if the submitted plan does not function as intended. The requirements of this plan shall be the obligation of the land owner and/or his successors or heirs; until such time as the plan is properly completed, modified, or voided."

#### **STANDARD NOTE # 3**

"The Contractor shall prevent sediment, debris and all other pollutants from entering the storm sewer system during all demolition, excavation, trenching, boring, grading, or other construction operations that are part of this project."

"The Contractor shall be held responsible for remediation of any adverse impacts to adjacent waterways, wetlands, etc., resulting from work done as part of this project."

#### **STANDARD NOTE # 4**

"A layer of suitable mulch shall be applied to all disturbed portions of the site within fourteen (14) days of the completion of overlot grading. Said mulch shall be applied at a rate of two (2) tons per acre and shall be tacked or fastened by an approved method suitable for the type of mulch used."

"Rough-cut streets shall be mulched unless a layer of aggregate road base or asphalt paving is to be applied to rough-cut streets within the 14 day period after completion of overlot grading."

**STANDARD NOTE # 5**

"The Contractor shall locate, install, and maintain all erosion control and water quality Best Management Practices as indicated in the approved Construction Activities Stormwater Management Plan." (Chapter 10, City and County of Denver, Department of Public Works "Rules and Regulations Governing Sewerage Charges and Fees and Management of Wastewater")

**STANDARD NOTE # 6**

"The Developer, General Contractor, Grading Contractor and/or their authorized agents shall insure that all loads of cut and fill material imported to or exported from this site shall be properly covered to prevent loss of the material during transport on public rights of ways." (Sec.49-552; Revised Municipal Code)

**STANDARD NOTE # 7**

"The use of rebar, steel stakes, or steel fence posts to stake down straw or hay bales or to support silt fencing used as an erosion control measure is **Prohibited.**"

**STANDARD NOTE # 8**

"Soils that will be stockpiled for more than thirty (30) days shall be protected from wind and water erosion within fourteen (14) days of stockpile construction. Stabilization and protection of the stockpile may be accomplished by any of the following: Mulching, Temporary/Permanent Revegetation Operations, Chemical Soil Stabilizer Application (requires WMD approval), or erosion control matting/Geotextiles. If stockpiles are located within 100 feet of a drainageway, additional sediment controls such as temporary dikes or silt fence shall be required."

**STANDARD NOTE # 9**

"Approved erosion and sediment control 'Best Management Practices' shall be maintained and kept in good repair for the duration of this project.

At a minimum, the Contractor or his agent shall produce and retain weekly written inspection records for all BMPs and after significant precipitation events. All necessary maintenance and repair shall be completed in a timely manner but in no case more than seven (7) calendar days after the inspection. However, street sweeping is to be completed by the close of the business day or on an as needed basis.

Accumulated sediment and debris shall be removed from a BMP when the sediment level reaches one half the height of the BMP or, at any time that sediment or debris adversely impacts the functioning of the BMP."

**STANDARD NOTE # 10**

"Modification of an active Construction Activities Stormwater Discharge Permit by the Developer, Contractor or their authorized agents shall require timely notification of and approval by the Wastewater Management Division. Discharge Permits expire if construction has not commenced within twelve (12) months of the acceptance of the Management Plan.

Termination of an active Construction Activities Stormwater Discharge Permit upon completion of the project requires notification of and approval by the Wastewater Management Division."

**STANDARD NOTE # 11**

"Water used in the cleaning of cement truck delivery chutes shall be discharged into a predefined, bermed containment area on the job site. The required containment area is to be bermed so that wash water is totally contained. Wash water discharged into the containment area shall be allowed to infiltrate or evaporate. Dried cement waste is removed from the containment area and properly disposed of.

Should a predefined bermed containment area not be available due to the project size, or lack of an area with a suitable ground surface for establishing a containment area, proper disposal of ready mix washout and rinse off water at the job site shall conform to the approved techniques and practices identified in the Colorado Department of Public

Health & Environment's training video entitled '**Building For a Cleaner Environment, Ready Mix Washout Training**' and its accompanying manual entitled, '**Ready Mix Washout Guidebook, Vehicle and Equipment Washout at Construction Sites.**'

The direct or indirect discharge of water containing waste cement to the storm sewer system is **prohibited.**" (Sec.56-102a, c; Revised Municipal Code, City and County of Denver).

#### **STANDARD NOTE # 12**

"The Contractor shall protect all storm sewer facilities adjacent to any location where pavement cutting operations involving wheel cutting, saw cutting, or abrasive water jet cutting are to take place.

The Contractor shall remove and properly dispose of all waste products generated by said cutting operations on a daily basis.

The discharge of any water contaminated by waste products from cutting operations to the storm sewer system is **prohibited.**" (Sec.56-102a, c; Revised Municipal Code, City and County of Denver)

#### **STANDARD NOTE # 13**

"Paved surfaces which are adjacent to construction sites must be swept on a daily basis when sediment and other materials are tracked or discharged on to them. Either sweeping by hand or use of Street Sweepers is acceptable. Street sweepers using water while sweeping is preferred in order to minimize dust. Flushing off paved surfaces with water is **prohibited.**" (Sec.56-102a, c; Revised Municipal Code, City and County of Denver)

## Section 6

### ACTIVE-SITE COMPLIANCE

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The Erosion Control Supervisor is a vital asset in the success and implementation of stormwater Management Plans. There is an element of judgment that plays an important role in assessing a site's compliance level and the timeliness of implementation of the necessary erosion and sediment control BMPs. Non-compliance can result in litigation and fines levied not only to a developer but also to Denver. Due to these concerns, it is necessary to have proper documentation, regular inspections, timely BMP maintenance, and employee/contractor training relevant to stormwater protection practices for a particular site. The Erosion Control Supervisor should consider five questions to determine compliance:

Does this project have an approved local and state permit?

Are the erosion and sediment control measures installed as shown on the Management Plan and is the Management Plan reflective of the BMPs installed in the field?

Is erosion being controlled on the site?

Are sediment and pollutant sources being contained on the site?

Are any adjacent properties or state waters being impacted?

### Documentation

The site must have all the necessary permits secured and approved before any work begins. Some of these are listed in Section 1, Table 1 of this document.

1. The Management Plan is required to be on-site from the date of project initiation to the date of final stabilization, unless the City approves another location, specified by the owner or developer. The Management Plan needs to have the narrative report, site plans indicating BMP locations, and installation details.
2. All field inspections must be documented through an inspection report detailing site conditions, status of the required BMPs, and all other maintenance issues at the site that need to be addressed. These reports must be kept on-site in an organized fashion; along with the approved plans, copy of permits and contacts for the particular site, unless the City approves another location specified by the owner or developer.
3. Photo document the site as much as possible. If possible, take photos of the site before construction, during clearing, and during construction. Also take pictures to photo document the installation or non-installation of the required BMPs, the condition of the required and installed BMPs and the BMPs requiring maintenance. It is also useful to photo record the outflow pipes discharging runoff from the site and the conditions of existing creeks that receive runoff from the site. These photos must also be kept in an organized manner.
4. All correspondence detailing site meetings, training efforts, and orders/requests for installation and maintenance of BMPs must be kept. Letters from developers and engineers must also be maintained as part of the file for a particular project.
5. Complaints regarding a project must also be documented including all the actions that the enforcing official has taken in response to the complaint.
6. Phone calls and site conversations/meetings that are part of the compliance process must also be documented.

Note: It is important to note that these documents may become public record and should be treated as such.

## Field Inspection Sequence

1. Pre-inspection Research:
  - a. Evaluate Project Phasing
  - b. Review Management Plan
  - c. Review inspection and maintenance files
  - d. Contact City Inspector for pre-construction inspection
2. Weekly or Post-Precipitation Field Inspection
  - a. Construction Exits and Entrances
    - i. Identified on Plan?
    - ii. Installed correctly?
    - iii. Properly maintained?
    - iv. Are exits and entrances being used appropriately?
    - v. Tire wash area?
    - vi. Sediment leaving site and entering adjacent properties or roadways?
3. Are BMPs effective and are modifications necessary?
4. Walk the perimeter of the site
5. Observe terrain and perimeter controls.
  - a. Note type of sediment controls
    - i. Installed correctly?
    - ii. Properly maintained?
    - iii. According to Plan?
  - b. Sediment leaving site and entering adjacent properties or roadways?
  - c. Are BMPs effective and are modifications necessary?
6. Inspect active construction areas
  - a. Documented in Management Plan?
  - b. Mulch or temporary stabilization should be applied to all exposed areas within fourteen (14) days of disturbance.
  - c. Note type of controls;
    - i. Installed correctly?
    - ii. Properly maintained?
7. Inspect non-active disturbed areas
  - a. Areas left idle for more than thirty (30) days should be stabilized.
  - b. Note type of controls
    - i. Installed correctly?
    - ii. Properly maintained?
    - iii. Documented in Management Plan?
    - iv. Are BMPs effective and are modifications necessary?
8. Inspect discharge points and downstream, off-site areas for impact
  - a. If sediment is leaving site and impacting adjacent properties or roadways
  - b. Document downstream impacts.
  - c. Remediate potential downstream damages.
  - d. Identify and implement more effective BMPs.
9. Final Stabilization Inspections
  - a. Perimeter controls intact?
  - b. Installed correctly?
  - c. Properly maintained?
  - d. Documented in Management Plan?
  - e. Mulch cover
    - i. Estimate application density

- f. Properly secured or crimped
- 10. Contact City Inspector for Closure Inspection.

## **BMP Maintenance**

The description of potential pollutant sources, and the pollution prevention and control measures identified in the plan, shall be revised and modified as appropriate based on the results of the inspection as soon as practicable after such inspection. Maintenance or modification to sediment and erosion control measures shall be implemented in a timely manner, but in no case more than seven (7) calendar days after the inspection.

# **Attachment A**

## **Construction Activities Stormwater Management Plan Pre-Submittal Review Form**

## **Pre-Submittal Review Form for New Development or Re-development Projects**

### **Narrative Report Worksheet (5 stamped sets required)**

Name, Address, and Phone Number of Applicant  
Name, Address, and Phone Number of Local Contact/Project Manager  
Name, Address, and Phone Number of Consultant  
Project location  
Site description  
Current site conditions  
Description of adjacent areas  
Description of erosion and sediment control BMPs  
Project Description  
Placement of post-construction water quality BMPs  
Calculations and structural design for proposed permanent water quality BMPs  
Permanent Stabilization  
BMP Maintenance Schedule  
Certification Note signed by property owner (NPDES Standard Note #2)  
Professional Engineer's Statement and stamp

### **Drawings (5 stamped sets required)**

Existing and Proposed Topography extended 100 ft beyond the property boundary  
Location of existing structures on site  
Location of structures or natural features within 100' of site boundary  
Locations of nearby floodplains  
Locations of proposed structures  
Limits of grading and clearing  
Locations of storage areas  
Locations of contaminated areas  
Locations of construction entrances  
Locations for all storm runoff discharge points at site boundaries or internal to site if a drainage way is located on-site.  
  
Locations for all proposed BMPs  
Locations for all containment areas for chute washout.  
All applicable NPDES Standard Notes.  
Installation Details of all proposed BMPs  
Structural details for all proposed permanent water quality BMPs.  
Professional Engineer's stamp and signature.

### **Miscellaneous Technical Information (1 copy required)**

Copies of the following plans must be submitted with the application if the plans have been prepared. If reports have not been prepared at the time of application, submittal should occur when plan is developed. Issuance of a Construction Activities Stormwater Discharge Permit may be delayed until these plans have been reviewed.

Drainage Report (approved copy not required)  
Soils/Geotechnical Studies  
Environmental Audits (for contaminated sites only)

### **Additional Documentation and Correspondence (1 copy required)**

Copies of applications for Colorado Department of Public Health and Environment Permits  
Stormwater Discharge Associated with Construction Activity  
Minimal Discharge Industrial Wastewater Permit  
Construction Dewatering Permits  
Fugitive Dust or other Air Pollution Permits  
Copies of correspondence with other governmental jurisdictions  
Wetlands  
Floodplains  
Waterways  
Discharges to or from other jurisdictions  
Copies of agreements with adjacent land owners  
Use of land for material storage or laydown  
Stabilization and restoration of disturbed areas  
Acceptance of flow to or from adjacent sites

# **Attachment B**

## **Construction Activities Stormwater Management Plan**

### **Narrative Report Information Worksheet**

**Narrative Report Information Worksheet**  
City and County of Denver Construction Activities Stormwater Management Plan

**APPLICANT**

**Company Name:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

**City, State, Zip Code:** \_\_\_\_\_

*Phone Number:* (\_\_\_\_\_) \_\_\_\_\_ *FAX Number* (\_\_\_\_\_) \_\_\_\_\_

**LOCAL CONTACT/PROJECT MANAGER**

**Name:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

**City, State, Zip Code:** \_\_\_\_\_

*Phone Number:* (\_\_\_\_\_) \_\_\_\_\_ *FAX Number* (\_\_\_\_\_) \_\_\_\_\_

**CONSULTANT**

**Company Name:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

**City, State, Zip Code:** \_\_\_\_\_

*Phone Number:* (\_\_\_\_\_) \_\_\_\_\_ *FAX Number* (\_\_\_\_\_) \_\_\_\_\_

**Project Engineer:** \_\_\_\_\_

**PROJECT LOCATION**

Name of Project or Development: \_\_\_\_\_

Street Address\*: \_\_\_\_\_

\*\*Township: \_\_\_\_\_ Range: \_\_\_\_\_ Section: \_\_\_\_\_ Quarter Section: \_\_\_\_\_

\*\*Latitude (+/- 15"): \_\_\_\_\_, Longitude (+/- 15"): \_\_\_\_\_

Metropolitan District: \_\_\_\_\_

\*Submission of an Address Assignment Slip issued by the City Engineer's Office is required.

\*\* Required if Street Address is unavailable.

## **NATURE OF CONSTRUCTION**

Check the appropriate description(s) or provide a brief description that indicates the general nature of the construction activities. A full description of activities must be included in the Stormwater Management Plan.

- Single Family Residential Development
- Multi-Family Residential Development
- Commercial Development
- Oil and Gas Production and/or Exploration (including pad sites and associated infrastructure)
- Highway/Road Development (not including roadways associated with commercial or residential development)
- Other, Describe: \_\_\_\_\_

## **LOCATION DESCRIPTION**

### 1. Acreage

a. Total Site Acreage: \_\_\_\_\_

b. Acreage Subject to Disturbance: \_\_\_\_\_

c. Acreage Determination (Public Utility Projects):

*Area bounded by predefined construction limits:* \_\_\_\_\_

or

Pipe/Conduit Length x Right of Way Width: \_\_\_\_\_

or

Paving Length x Cartway (Paving Operation only): \_\_\_\_\_

*Calculations shall include all areas proposed for contractor laydown, materials storage, equipment storage, areas where equipment repair and fueling will occur, ingress, and egress (include haul roads and borrow pits.)*

### 2. Current Site Conditions:

a. Historical Land Use: (may be for partial site)

Known Landfill site: YES \_\_\_\_\_ NO \_\_\_\_\_

Has any of the following activities occurred on site:

- Metal Refining YES \_\_\_\_\_ NO \_\_\_\_\_

- Petroleum Refining YES \_\_\_\_\_ NO \_\_\_\_\_

- Petroleum Storage YES \_\_\_\_\_ NO \_\_\_\_\_

- Chemical Manufacturing YES \_\_\_\_\_ NO \_\_\_\_\_

- Pesticide/Fertilizer Manufacture/Storage YES \_\_\_\_\_ NO \_\_\_\_\_

- Rail Yard YES \_\_\_\_\_ NO \_\_\_\_\_

If the response to any of the above is YES, Please describe:

\_\_\_\_\_

\_\_\_\_\_

b. Possible Site Contamination: Is the site part of any of the following:

Known Denver Radium Site YES \_\_\_\_\_ NO \_\_\_\_\_

Known Denver LUST Site YES \_\_\_\_\_ NO \_\_\_\_\_

Known Superfund Site YES \_\_\_\_\_ NO \_\_\_\_\_

Known CERCLA Site YES \_\_\_\_\_ NO \_\_\_\_\_

Known RCRA Site YES \_\_\_\_\_ NO \_\_\_\_\_

If the response to any of the preceding is YES, Please describe:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Describe any other known site contamination:

\_\_\_\_\_  
\_\_\_\_\_

c. Current Land Use:

Describe existing use:

\_\_\_\_\_

Are there any building/structures on site? YES \_\_\_\_\_ NO \_\_\_\_\_

Existing Topography

- Description: \_\_\_\_\_

- Highest Elevation: \_\_\_\_\_ Lowest Elevation: \_\_\_\_\_

- Steepest Slope: \_\_\_\_\_ Average Slope: \_\_\_\_\_

- Direction \_\_\_\_\_

d. Vegetation:

Identify the types of vegetation found on-site:

\_\_\_\_\_  
\_\_\_\_\_

Estimate the existing density of vegetation:

\_\_\_\_\_  
\_\_\_\_\_

*Submittal of Photographs is not required but highly recommended*

e. Drainage:

Identify all adjacent surface water flows (run-on) that may impact and/or runoff from the subject site:

\_\_\_\_\_  
\_\_\_\_\_

Identify the State Receiving Waters:

\_\_\_\_\_

Describe the flow routing from the site to the Receiving Waters:

\_\_\_\_\_

Are there any springs or seeps located on-site? YES \_\_\_\_\_ NO \_\_\_\_\_

Are there any defined drainage channels on-site? YES \_\_\_\_\_ NO \_\_\_\_\_

Does the site fall within a Regulatory Floodplain? YES \_\_\_\_\_ NO \_\_\_\_\_

*If the answer is YES, a Floodplain Development Permit issued by the Public Works Department may be required.*

f. Wetlands:

Identify all on-site wetlands/wetlands channels:

Define the dimensions/surface areas for each identified wetland

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

Tributary or adjacent Wetlands Areas

- Upstream of the site? YES \_\_\_\_\_ NO \_\_\_\_\_

- Downstream of the site? YES \_\_\_\_\_ NO \_\_\_\_\_

Will the proposed construction work impact any of the on-site wetland areas?

YES \_\_\_\_\_ NO \_\_\_\_\_

If the answer is YES, attach copies of correspondence with the State of Colorado and U.S. Army Corps of Engineers concerning permits and approvals for the work.

g. Soils:

Identify the predominant Hydrologic Soil Group found on site.

A \_\_\_\_\_ B \_\_\_\_\_ C \_\_\_\_\_ D \_\_\_\_\_

What is the runoff coefficient for the undeveloped site?

\_\_\_\_\_

Describe the soil texture found on-site.

\_\_\_\_\_

Is there any outcropping of bedrock on site? YES \_\_\_\_\_ NO \_\_\_\_\_

Will grading or excavation on site reach bedrock? YES \_\_\_\_\_ NO \_\_\_\_\_

If YES, what is the depth of the bedrock? \_\_\_\_\_

Will grading or excavation penetrate the Water Table? YES \_\_\_\_\_ NO \_\_\_\_\_

If YES, what is the depth of the Water Table? \_\_\_\_\_

h. Erosion Potential:

Provide estimates of the potential annual soil loss from the site for the following conditions:

Erosion by water from an unprotected site \_\_\_\_\_ tons per acre per year.

Erosion by water from a protected <sup>1</sup> site \_\_\_\_\_ tons per acre per year.

Identify the procedures/formulas used to produce these estimates.

If the Universal Soil Loss Equation (USLE) has been used, provide the values used for the following.

R (Annual Erosion Index) \_\_\_\_\_

K (Soil Erodibility Factor) \_\_\_\_\_

LS (Length/percent Slope Factor) \_\_\_\_\_

C (Soil Cover Factor) \_\_\_\_\_

Provide estimates of the potential annual soil loss from the site for the following conditions:

Erosion by wind from an unprotected site \_\_\_\_\_ tons per acre per year.

Erosion by wind from a protected <sup>2</sup> site \_\_\_\_\_ tons per acre per year

Identify the procedures/formulas used to produce these estimates.

\_\_\_\_\_

G. PROJECT DESCRIPTION

Proposed Construction

Identify which of the following activities will occur during development of the site:

Clearing and Grubbing YES \_\_\_\_\_ NO \_\_\_\_\_

Mass Overlot Grading YES \_\_\_\_\_ NO \_\_\_\_\_

Cut Operations YES \_\_\_\_\_ NO \_\_\_\_\_

If YES, estimate volume of cut (cubic yards) \_\_\_\_\_

Fill Operations YES \_\_\_\_\_ NO \_\_\_\_\_

If YES, estimate volume of fill (cubic yards) \_\_\_\_\_

Building Demolition YES \_\_\_\_\_ NO \_\_\_\_\_

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<sup>1</sup> protected site: calculations shall be based on the measures proposed for use on the site

<sup>2</sup> protected site: calculations shall be based on the measures proposed for use on the site

Foundation Excavation YES \_\_\_\_\_ NO \_\_\_\_\_  
 Utility Construction YES \_\_\_\_\_ NO \_\_\_\_\_  
 Street Construction and Paving YES \_\_\_\_\_ NO \_\_\_\_\_  
 Building Construction YES \_\_\_\_\_ NO \_\_\_\_\_  
 Parking Lot Construction/Paving YES \_\_\_\_\_ NO \_\_\_\_\_  
 Landscaping YES \_\_\_\_\_ NO \_\_\_\_\_  
 Will Storm and Sanitary Sewer systems be constructed as Public Sewers? YES \_\_\_\_\_ NO \_\_\_\_\_  
 If YES, identify the SP or W Project Numbers assigned\* by WMD for each project

If sewers are private or being constructed by a governmental agency other than Public Works identify the PR, M, or O Project Numbers assigned\* by Public Works.

*\*if Public Works Project Numbers have not been assigned but will be in the future, please indicate as "Not Assigned."*

2. Construction Scheduling

a. Grading Operations

Proposed Start Date: \_\_\_\_\_

Proposed Completion Date: \_\_\_\_\_

b. Utility/Infrastructure Construction

Proposed Start Date: \_\_\_\_\_

Proposed Completion Date: \_\_\_\_\_

c. Building Construction

Proposed Start Date: \_\_\_\_\_

Proposed Completion Date: \_\_\_\_\_

d. Landscaping/Site Stabilization

Proposed Start Date: \_\_\_\_\_

Proposed Completion Date: \_\_\_\_\_

e. Detailed Construction Schedule (attach to application)

*Submission of a Detailed Construction Schedule is required. The schedule shall include all major construction activities as well as the installation of proposed erosion control measures, sediment/pollutant control measures, interim and final site stabilization measures, permanent erosion prevention measures, and permanent water quality enhancement facilities.*

3. Spill Prevention and Management (attach to application)

*Submission of a Spill Prevention and Management Plan is required. The plan shall identify the measures proposed to prevent the discharge of pollutants resulting from spills and expedite the cleanup and proper disposal of soils contaminated by chemical, petroleum or hazardous materials.*

4. Required Best Management Practices (BMP)

*As listed, under Section 3 of Information Guide document.*

5. Construction BMP Phasing

Denver recognizes 3 basic phases for all construction sites. A discussion of each phase should be included. These phases are.

a. Site Preparation/Grading

Describe the types and placements of BMPs proposed for use during clearing, grubbing, demolition, and grading operations.

Describe all measures proposed for interim site stabilization.

Describe the inspection and maintenance schedule proposed for BMPs on-site.

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b. Infrastructure/Building Construction

Describe the types and placements of BMPs proposed for use during utility construction, roadway construction, building construction and paving operations.

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Describe all measures proposed for interim site stabilization.

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Describe the inspection and maintenance schedule proposed for BMPs on-site.

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c. Site Stabilization/Landscaping

Describe the types and placements of BMPs proposed for use during site stabilization and landscaping, as well as describing all permanent water quality enhancement facilities.

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Describe all measures proposed for final site stabilization.

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Describe the inspection and maintenance schedule proposed for BMPs on-site.

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Identify any annual grasses proposed for use in stabilizing the site.

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List the perennial grasses seed mix proposed for site stabilization.

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Identify the estimated date for seeding. \_\_\_\_\_

6. Post Construction Water Quality

a. Identify permanent water quality BMPs proposed for site sediment control:

Grass Buffer	YES _____	NO _____
Grass Swale	YES _____	NO _____
Modular Block Porous Pavement	YES _____	NO _____
Porous Pavement Detention	YES _____	NO _____
Porous Landscape Detention	YES _____	NO _____
Extended Detention Basin	YES _____	NO _____
Sand Filter Extended Detention Basin	YES _____	NO _____
Constructed Wetlands Basin	YES _____	NO _____
Retention Pond	YES _____	NO _____
Constructed Wetlands Channel	YES _____	NO _____
Innovative/Proprietary Technology *	YES _____	NO _____

\*Use of Innovative/Proprietary Technology will require the submission of the technology developer's technical data, specifications, design criteria and installation requirements for review.

H. Certifications

Plans submitted for review need to bear a P.E. Stamp , signature , and a P.E. 's Certification Note and a signed Owner's Certification Note using the following language.

**Owners Certification:**

*"This Construction Activities Stormwater Management Plan has been submitted as the application for a Construction Activities Stormwater Discharge Permit filed with the Wastewater Management Division of the City and County of Denver. I understand that additional erosion control, sediment control and water quality enhancing measures may be required of the owner and his or her agents due to unforeseen pollutant discharges or if the submitted plan does not function as intended. The requirements of this plan shall be the obligation of the land owner and/or his successors or heirs; until such time as the plan is properly completed, modified, or voided."*

\_\_\_\_\_  
Owner or Authorized Agent

Date\_\_\_\_\_

\_\_\_\_\_  
Representing

**Attachment C**  
**Notice of Transfer and Acceptance Form**

**CITY AND COUNTY OF DENVER  
NOTICE OF TRANSFER AND ACCEPTANCE OF TERMS OF A CONSTRUCTION ACTIVITIES  
STORMWATER DISCHARGE PERMIT**

**1) To be completed by the NEW permittee:**

I hereby accept transfer of this Construction Activities Stormwater Discharge Permit No. \_\_\_\_\_, which was issued to, \_\_\_\_\_. I have reviewed the terms and conditions of this permit and the Construction Activities Stormwater Management Plan and accept full responsibility, coverage, and liability. This transfer will be effective on: \_\_\_/\_\_\_/\_\_\_.

Street Address: \_\_\_\_\_

City, State and Zip Code: \_\_\_\_\_

Name of facility or development: \_\_\_\_\_

The New permittee is: \_\_\_\_\_

Company Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_ City, State and Zip Code: \_\_\_\_\_

Phone No.: \_\_\_\_\_

Fed. Taxpayer (or Employer) ID No. \_\_\_\_\_

Local Contact (familiar with facility) \_\_\_\_\_ Title: \_\_\_\_\_

Phone Number: \_\_\_\_\_

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signature of Permit Applicant \_\_\_\_\_ Date Signed: \_\_\_\_\_  
(Legally Responsible Party)

Name: \_\_\_\_\_ Title: \_\_\_\_\_  
(printed)

**2) To be completed by the Previous permittee:**

As previous permittee, I hereby agree to the transfer of the above referenced permit and certification and all responsibilities thereof.

Name:

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Mailing Address:

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City, State and Zip Code:

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Phone No.:

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Fed. Taxpayer (or Employer) ID No.:

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Signature of Permit Applicant:

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(Legally Responsible Party)

Name:

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(printed)

Title:

Date Signed:

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**Attachment D**  
**Inactivation Request Form**

**CITY AND COUNTY OF DENVER  
INACTIVATION REQUEST FOR CONSTRUCTION ACTIVITIES STORMWATER  
DISCHARGE PERMIT**

Please print or type. Form must be filled out completely.

Permit Number: \_\_\_\_\_ Taxpayer ID or EIN: \_\_\_\_\_

Permittee (Company) Name: \_\_\_\_\_

Permittee Address: \_\_\_\_\_

Phone No.: \_\_\_\_\_

Site/Facility Name: \_\_\_\_\_

Site Address/Location: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Summary of work performed and **description of final site stabilization:**  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I certify under penalty of law that by the date of my signature below, all disturbed soils at the identified construction site have been finally stabilized; all temporary erosion and sediment control measures have been removed; all construction and equipment maintenance wastes have been disposed of properly; and all elements of the Stormwater Management Plan have been completed. I understand that by submitting this notice of inactivation, I am no longer authorized to discharge stormwater associated with construction activity by the CASDP. I understand that discharging pollutants in stormwater associated with construction activities to the waters of the State of Colorado, where such discharges are not authorized by a CASDP or SUDP is unlawful under the Denver Revised Municipal Code, Colorado Water Quality Control Act and the Clean Water Act. I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (See 18 U.S.C 1001 and 33 U.S.C. 1319.)

Signature of Permit Applicant: \_\_\_\_\_  
(Legally Responsible Party)

Name: \_\_\_\_\_  
(printed)

Title: \_\_\_\_\_

Date Signed: \_\_\_\_\_