

**CITY OF ARVADA
SITE DEVELOPMENT PERMIT
STORMWATER MANAGEMENT PLAN TEMPLATE**

[Below is a template recommended for use when developing a Stormwater Management Plan for construction in the City of Arvada.]
[Content in italics directs the user as to what should be added to that section.]

During the construction process, soil is the most vulnerable to erosion by wind and water. This eroded soil endangers water resources by reducing water quality, and causing the siltation of aquatic habitat for fish and other desirable species. Eroded soil also necessitates repair of sewers and ditches, and the dredging of lakes. In addition, clearing and grading during construction causes the loss of native vegetation necessary for terrestrial and aquatic habitat, and may be necessary to provide a healthy living environment for citizens of Arvada.

INTENT OF THE STORMWATER MANAGEMENT PLAN (SWMP)

The intent of the Stormwater Management Plan (SWMP) is to:

Sample language: minimize water Pollution by providing guidance on how to protect storm drain inlets and waterways during construction activities from grading, utility construction, millings/grinding operations, concrete saw water, waste materials such as concrete washout, and any disturbances to dirt/earth. Protect as much existing vegetation as possible, slow down runoff, prevent or minimize erosion form construction activities, provide incremental phased seeding and mulching, avoidance and minimization, stabilization, implementation, seeding and scheduling of the plan. Stabilize earth disturbances; prevent sediment from reaching the receiving or surface waters.

PROJECT SITE DESCRIPTION

1. *Describe the construction activity, including type of project, and a description and sequence of proposed activities, such as clearing and grubbing, grading, installation of utilities, paving, building, landscaping, and final disposition of the property.*
2. This construction project is within the City of Arvada, which has a Phase II Municipal Separate Storm Sewer System Permit from the State of Colorado.
3. Stormwater from this site discharges to:
Include the size, type and location of outfalls that discharge into the storm sewer system and the ultimate receiving water or stream.

RECEIVING WATER NAME:

DISTANCE FROM PROJECT THE RECEIVING WATER OUTFALL IS:

WETLAND IMPACTS? YES NO

STREAM IMPACTS? YES NO

THREATENED OR ENDANGERERD SPECIES? YES NO *[if yes please list]*

4. The existing soil onsite is:
Describe soil, soil erosion potential or the quality of any discharge from the site as listed in the Soil Survey of Golden Area, Colorado, published by the Soil Conservation Service, or by accessing their website at <http://websoilsurvey.NRCS.USDA.gov>.

Estimated runoff coefficient of the soils onsite before construction is _____, and after construction will be _____.

The estimated runoff coefficient can be found in Volume I of the Urban Storm Drainage Criteria Manual published by Urban Drainage and Flood Control District or by accessing the Manual through their website at <http://www.udfcd.org> and clicking on Downloads.

5. The total acres of disturbance, including all clearing, grading, excavation activities, areas receiving overburden (e.g. stockpiles), demolition areas and areas with heavy equipment/vehicle traffic and storage that will disturb existing vegetative cover is _____ acres.

Total area (acres) of construction site: _____

Total area (acres) of disturbance: _____

Total area (acres) of impervious: _____

Total area (acres) of landscaping: _____

6. *Provide a description of the existing vegetation on the site, the percent cover prior to construction, and where the information was obtained (for example, survey completed on (date).)*
7. *Provide a description and location of other non-stormwater discharges, such as springs and landscape irrigation return flow. Describe how they will be handled.*

Note that when a wet watercourse must be crossed regularly during construction, and a temporary stream crossing is needed, approval may be required by the U.S. Army Corps of Engineers. Under State requirements, documentation must be available showing that the U.S. Army Corps of Engineers was approached and either 1) permitted the crossing or 2) denied the need for a permit.

THE STORMWATER MANAGEMENT PLAN

The SWMP will be implemented in three phases: 1) first construction activity, 2) during construction, and 3) final stabilization.

Site Map Components

During construction items will be added as necessary to render the SWMP current:

1. Areas used for storage of building materials, soils or wastes.
2. Location of any dedicated asphalt or concrete batch plants.
3. Location of work access routes during construction.

4. Location of borrow and waste locations.

First Construction Activities

Clearing and Grubbing is anticipated to begin on date .

Prior to Work Commencing

1. Erosion control measures will be implemented in accordance with the approved schedule prior to any construction.
2. Perimeter control will be established as the first item on the SWMP.
3. Identify and implement BMPs for other pollutants such as equipment maintenance and vehicle washing.
4. The locations of any additional BMPs will be added to the SWMP.

Offsite Drainage

1. The project site will be evaluated for all water draining into or through it. This may mean protecting inlets not shown on the plans or downstream of the work area. The SWMP will be revised accordingly.
2. BMPs will be used to prevent off-site water from running on-site and becoming contaminated with sediment or other pollutants or to divert off-site flows away from the project site to prevent water contamination.

BMPs Installed

Provide a narrative description of the number, location, and specifications of structural BMPs installed before and during "First Construction Activities." Typical BMPs may include:

- *Perimeter Control*
- *Stockpile Perimeter Control*
- *Off-site Inlet Protection*
- *Stabilized Construction Entrance*

Also describe the maintenance, such as "Should off-site tracking occur, all practicable measures to clean roads and storm drainage ways, at a minimum by the end of each work day, will be utilized.

Details of all BMPs used must be included either on the maps or in the SWMP.

Potential Pollutants / Materials Handling and Spill Prevention

Describe the location and/or method used to control pollutant sources that may have an affect on stormwater, such as:

- *Vehicle fueling*
- *Equipment or vehicle washing*

- *Storage of fertilizers, chemicals or other materials*
- *Haul roads*
- *Loading/unloading areas*
- *Trash and construction debris*

Describe spill prevention procedures for petroleum products or chemicals, including who to call for larger spills.

During Construction

Grading and slope stabilization is anticipated to begin on date.

Installation of utilities is anticipated to begin on date.

Street construction is anticipated to begin on date.

Building construction is anticipated to begin on date.

Stabilizing Disturbances

Describe nonstructural BMPs including site-specific scheduling of seeding, mulching, geotextiles, or other interim stabilization conducted after grading. Provide stabilization schedule showing dates when areas are to be completed and stabilized. Maintain revisions to the schedule as necessary.

Possible language to add to the SWMP as it pertains to the site:

- 1. Disturbed surfaces will be left in a roughened condition at all times by equipment tracking, scarifying or disking the surface on contour with a 2 to 4 inch minimum variation in soil surface.*
- 2. Disturbed areas where work is temporarily halted will be temporarily stabilized within 14 calendar days after activity has ceased unless work is to be resumed within 45 calendar days after the activity ceased as authorized by the City Engineer.*
- 3. During the seasons when seeding does not produce vegetative cover, temporary stabilization will occur. Temporary stabilization will consist of 1.5 tons certified weed free forage per acre, mechanically crimped into the soil in combination with an organic mulch tackifier.*
- 4. Construction activities will be limited to those areas within the limits of disturbance as shown on the plans. Construction activities in addition to normal construction procedures will include the on-site parking of vehicles or equipment, on-site staging, on-site batch plants, haul roads or work access and any other action which would disturb existing conditions. Off road staging areas or stockpiles must be pre-approved by the City of Arvada. Disturbances beyond these limits will be restored to original condition.*
- 5. The permittee will tabulate additional disturbances locations and quantities not identified in the SWMP and add them to the SWMP.*

BMPs Installed

Provide a narrative description of the number, location, maintenance requirements, and specifications of structural BMPs installed “During Construction.” Typical BMPs may include:

- *Perimeter Control*
- *Inlet / Outlet Protection*
- *Stabilized Construction Entrance*
- *Concrete Washout*
- *Masonry Product Control and Washout*
- *Street Cleaning*
- *Stockpile perimeter control*
- *Check Dams*
- *Erosion Control Blanket*
- *BMPs in combination, such as steep slopes or flow paths.*
- *Other BMPs such as grassy swales or buffers, wattles, slope drains, or other.*

Details of all BMPs used must be included either on the maps or in the SWMP.

Potential Pollutants / Materials Handling and Spill Prevention

Describe the location and/or method used to control pollutant sources that may have an affect on stormwater, such as:

- *Vehicle and equipment fueling*
- *Equipment or vehicle washing*
- *Storage of chemicals or other materials*
- *Haul roads*
- *Loading/unloading areas*
- *Trash and construction debris*

Inspection and Maintenance of Erosion Control Devices

Inspections will be conducted at least every 14 days and after any significant precipitation event where erosion may have occurred. Maintenance or replacements of erosion control measures will be made within 7 days. Sediment will be cleaned out when silt depth is 50% or greater than the erosion control device.

Final Stabilization

Permanent Seeding or sod installation is anticipated to begin on date .

Final stabilization is anticipated to be completed on date .

BMPs Installed

Provide a narrative description of the number, location, maintenance requirements, and specifications of structural BMPs installed or maintained through “Final Stabilization.” Typical BMPs may include:

- *Perimeter Control*
- *Inlet / Outlet Protection*
- *Stabilized Construction Entrance*

- *Street Cleaning*
- *Stockpile perimeter control*
- *Check Dams*
- *Erosion Control Blanket*
- *BMPs in combination, such as steep slopes or flow paths.*
- *Other BMPs such as grassy swales or buffers, wattles, slope drains, or other.*

Details of all BMPs used must be included either on the maps or in the SWMP.

Potential Pollutants / Materials Handling and Spill Prevention

Describe the location and/or method used to control pollutant sources that may have an affect on stormwater, such as:

- *Vehicle and equipment fueling*
- *Equipment or vehicle washing*
- *Storage of fertilizers, chemicals or other materials*
- *Haul roads*
- *Loading/unloading areas*
- *Trash and construction debris*

Seeding Plan

Describe the seeding and sod installation proposed onsite, including:

- *Areas of irrigated turf*
- *Areas of sod*
- *Areas of seed*
- *Drill seeding depth and density*
- *Seeding in small areas not accessible to a drill*
- *Mulching application*
Describe and quantify mulching application to areas seeded. Identify the content of the mulching material, including whether it will contain tackifier.
- *Stabilization of slopes and ditches*
- *Soil conditioning and fertilizer requirements*
Describe and quantify fertilizer application to areas seeded and areas sodded.

Reseeding operations / corrective stabilization

Areas where seed has not germinated after one season will be evaluated by the City. Areas that have not germinated will have seed, mulch and mulch tackifier (or blanket) reapplied.

Termination of the Site Development Permit

BMPs will be removed when 70% of preexisting cover has been established within the disturbed project limits.

RECORDKEEPING

1. Accurate and complete records will be kept, and maintained for three years after the Site Development Permit is terminated.
2. The SWMP should be considered a "living document" that will be continuously reviewed and modified, including but not limited to: additions, deletions, and changing locations of BMPs. These changes will be marked in the plans, dated and signed at time of occurrence.
3. All inspection and maintenance activities or other repairs will be documented and the records kept for review by the City.
4. Records of spill, leaks or overflows that result in the discharge of pollutants must be documented and maintained. Information that should be recorded for all occurrences include the time and date, weather conditions, reasons for spill, etc. A release of any chemical, oil, petroleum product, sewage, etc., which may enter state waters must be reported immediately to the City at 720-898-7800 (720-898-7820 after hours), and the State of Colorado Spill Hotline at 1-877-518-5608.
5. Incidents of noncompliance, such as uncontrolled releases of pollutants including mud, muddy water or measurable quantities of sediment found off-site will be noted, along with a brief explanation as to measures taken to prevent future violations and measures taken to clean up sediment that has left the site.

Failure to Perform

Failure to implement SWMP puts the project in automatic violation of the Site Development Permit. Failure to comply with the City of Arvada Site Development Permit requirements will constitute a violation punishable by fines of up to \$999 per day per violation, withholding of building permits and/or certificates of occupancy, or stop work. Systemic violators are punishable by criminal prosecution.

Failure to comply with the Colorado Department of Public Health and Environment Permit requirements will constitute a violation by the Contractor. Civil penalties for violations can be up to \$10,000 per day, and a criminal pollution of state water is punishable by fines of up to \$25,000 per day. For additional information, review the permit on file or go on-line to the CDPHE web site at <http://www.cdphe.state.co.us/wq/permitsunit/wqcdpmt.html>.