



# Standard Operating Procedures for Municipal Operations

DOUGLAS COUNTY

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SUMMARY OF DOUGLAS COUNTY STANDARD PROCEDURES (AMENDED JUNE 2017)

Site	Equipment and/or Vehicle Maintenance	Large Outdoor Festivals and Events	Outdoor Material Storage (" Bulk Storage" )	Power Washing	Snow and Ice Control	Snow Storage	Spill Prevention and Response	Street, Curb, and Gutter Maintenance, Replacement, and Construction	Utility and Storm Sewer Replacement and Construction	Storm Sewer, Culverts, and Pond Maintenance	Gravel Road Maintenance	Bridge Cleaning or Painting	Street Sweeper Cleaning	Street / Parking Lot Sweeping	Fuel Storage and Dispensing	Parks and Open Space Maintenance	Fertilizers and Pesticides Storage and Application	New Construction - Sediment and Erosion Control	Facility Good Housekeeping	Parking Lot Operation and Maintenance	Used Oils, Solvents, and Cleaners Disposal	HVAC Maintenance	Stormwater Training for Employees	Revisions to Standard Operating Procedures
SOP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
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## LIST OF ACRONYMS

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BMP	Best Management Practices
CDPHE	Colorado Department of Public Health and Environment
CDPS	Colorado Discharge Permit System
CR	Castle Rock
CRS	Colorado Revised Statutes
EPA	Environmental Protection Agency
GB	Gailen Buck Service Center
GESC	Grading, Erosion, and Sediment Control
MCM	Minimum Control Measures
MS4	municipal separate storm sewer system
MSDS	Material Safety Data Sheet
NPDES	National Pollutant Discharge Elimination System
NW	Douglas County Northwest
OSHA	Occupational Safety and Health Administration
POLs	petroleum fuels, oils and lubricants
SE	Douglas County Southeast
SOP	Standard Operating Procedures
SPCC	Spill Prevention Control and Countermeasures
WQCD	Water Quality Control Division



## **INTRODUCTION**

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This document provides a compilation of Standard Operating Procedures (SOPs) for municipal operations, relative to hazardous materials and stormwater management activities, conducted by Douglas County personnel and contractors working for, or on behalf of, Douglas County at County-owned or operated facilities.

### **Background**

Douglas County is a designated municipal separate storm sewer system (MS4) owner and operator under the National Pollutant Discharge Elimination System (NPDES) Phase II Stormwater Program. Within the State of Colorado, the NPDES Phase II program is administered by the Colorado Department of Public Health and Environment (CDPHE), Water Quality Control Division (WQCD). Each designated MS4 owner or operator must submit an application to the CDPHE for coverage to discharge stormwater from the MS4 to waters of the State. The coverage in the State of Colorado is granted under the Colorado Discharge Permit System (CDPS).

One of the requirements for CDPS coverage is to develop a stormwater management program that addresses six minimum control measures (MCMs), which are also known as “minimum measures”. One of the six MCMs includes the requirement to develop a municipal pollution prevention or “good housekeeping” program. This document presents a summary of SOPs to be employed at applicable County facilities to reduce the potential for polluting or negatively impacting local receiving water quality from stormwater runoff.

### **Use of this Document**

The development of these SOPs for municipal operations seeks to ensure consistent effective practices are implemented at all County-owned or operated facilities to minimize the potential for degrading local receiving water quality. These SOPs do not address issues such as worker safety, which are covered under separate work place safety regulations, including Occupational Safety and Health Administration (OSHA) standards. In no case should worker safety be compromised to conform to pollution prevention SOPs. If a procedure is described herein that contradicts allowable procedure with respect to worker safety, the deficient procedure should be revised to meet both the goals of maintaining worker safety and preventing the pollution of local receiving waters.

The SOPs described herein are not intended to be all encompassing, but rather provide a framework for improving processes at County facilities. These SOPs should be reviewed on at least an annual basis to ensure they account for changing pollution prevention/control technologies and potential changes in regulatory requirements.

## 1.0 EQUIPMENT AND VEHICLE MAINTENANCE

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### 1.1 Description

Regular maintenance of County vehicles and equipment, or County-contracted vehicles and equipment prolongs the life of the County's assets and prevents the leaking of hazardous fluids commonly associated with normal wear and tear of vehicles and equipment.

Potential pollutants generated at vehicle maintenance facilities include oil, antifreeze, brake fluid and cleaner, solvents, batteries, and fuels.

When services are contracted, this written procedure should be provided to the contractor so they have the proper operational procedures. In addition, the contract should specify that the contractor is responsible for abiding by all applicable municipal, state, and federal codes, laws, and regulations.

### 1.2 Procedure

Maintenance activities should be performed inside a maintenance building unless the equipment is too large to fit inside or temporary repairs need to be made before the equipment can be moved to the maintenance building.

#### VEHICLE STORAGE

- Monitor vehicles and equipment closely for leaks and use drip pans as needed until repairs can be performed;
- When drip pans are used, check frequently to avoid overtopping and properly dispose of fluids; and
- Drain fluids from leaking or wrecked vehicles and from motor parts as soon as possible. Dispose of fluids properly.

#### VEHICLE MAINTENANCE

- Conduct routine inspections of heavy equipment and vehicles to proactively identify potential maintenance needs;
- Perform routine preventive maintenance to ensure heavy equipment and vehicles are operating optimally;
- Recycle or dispose of all wastes properly and promptly; and
- Do not dump any liquids or other materials outside, especially near or in storm drains or ditches. Sweep and pick up trash and debris as needed.

### BODY REPAIR AND PAINTING

- Whenever possible, conduct all body repair and painting work indoors;
- Use dry cleanup methods such as vacuuming or sweeping to clean up all metal filings, dust, and paint chips from grinding, shaving, and sanding, and dispose of the waste properly. Debris from wet sanding can be allowed to dry overnight on the shop floor, then swept or vacuumed. Never discharge these wastes to the storm or sanitary sewer system;
- Minimize waste from paints and thinners by carefully calculating paint needs based on surface area and using the proper sprayer cup size;
- Do not use water to control over-spray or dust in the paint booth unless this wastewater is collected. This water should be treated and permission granted by the wastewater treatment plant prior to discharge into the sanitary sewer system;
- Do not dispose of spray gun cleaner waste in the storm drain; and
- Use sanding tools equipped with vacuum capability (if available) to pick up debris and dust.

### MATERIAL MANAGEMENT

- Store maintenance materials and waste containers (e.g., used oil and antifreeze) in labeled containers under cover or in secondary containment (e.g., double-walled tanks). Chemicals should not be combined in containers;
- All hazardous wastes must be labeled and stored according to hazardous waste regulations;
- Carefully transfer fluids from collection devices to designated storage areas as soon as possible. Do not store the transferred fluids adjacent to the containers (for example, oil drip pans with used oil in them should not be placed next to the used oil tank);
- Store new batteries securely to avoid breakage and acid spills;
- Store used batteries indoors or in secondary containment to contain potential leaks. Recycle used batteries;
- Conduct periodic inspections of storage areas to detect possible leaks;
- Do not wash or hose down storage areas except where wash water will enter the sanitary sewer as an approved discharge. Use dry clean-up methods whenever possible;
- Keep lids on waste barrels and containers, and store them indoors or under cover to reduce exposure to rain; and
- Periodically inspect and maintain all pretreatment equipment, including sumps, separators, and grease traps to ensure proper functioning.

### PARTS CLEANING

- Use designated areas for engine, parts, or radiator cleaning. Do not wash or rinse parts outdoors. If parts cleaning equipment is not available, use drip pans or other containment to capture parts cleaning fluids;
- Use steam cleaning or pressure washing of parts whenever possible instead of solvent cleaning;
- When steam cleaning or pressure washing, only discharge wastewater to an oil/water separator connected to the sanitary sewer;
- When using solvents to clean parts, rinse and drain parts over the designated solvent tank so that fluids will not drip or spill onto the floor. Use drip boards or pans to catch excess solutions and divert them back to the tank. Allow parts to dry over the hot tank; and
- Recycle cleaning solution when it becomes too dirty to use. Never discharge cleaning waste to the sanitary sewer or storm sewer.

### VEHICLE AND EQUIPMENT WASHING

- Vehicles should be washed in the County's vehicle and equipment wash area/bay or taken to a commercial car wash.
- Vehicle washing may also be accomplished with portable steam cleaning equipment, subject to each of the following conditions:
- Portable steam cleaning equipment for vehicle washing may only be used at the Douglas County Northwest (NW) Facility, the Douglas County Southeast (SE) Facility, the Gailen Buck Service Center (GB), and/or the Castle Rock (CR) Facility, respectively;
- Cleaning is limited to removal of snow, ice, mud, and dirt from the surface of the vehicles only;
- Engines and other separate parts may not be cleaned with a portable steam cleaner;
- No added chemicals or detergents are allowed to be used with the portable steam cleaning equipment;
- Vehicles being cleaned at the NW and SE Facilities must be positioned so that all runoff from the cleaning operation is directed into existing on-site stormwater quality facilities; and
- Vehicles at the CR and GB Facilities must be cleaned in the existing vehicle wash area/bay.

## **1.3 Employee Training**

- Train employees who perform heavy equipment and vehicle maintenance on this written procedure. Information regarding how to avoid and report spills will be presented during the training; and
- Periodically conduct refresher training on the SOP for applicable employees who perform heavy equipment and vehicle maintenance.

Further information can be found in the [Stormwater Training SOP](#).

## 1.4 Records

The following records could be used to document activities performed:

- Record of any major spills and the action taken;
- Records of employee training with sign-in sheet; and
- Heavy equipment and vehicle maintenance logs.

## 1.5 References

Center for Watershed Protection, Municipal Pollution Prevention/Good Housekeeping Practices: Version 1.0, September 2008.

City of Centennial SOP: Vehicle and Equipment Storage SOP, August 2007.

City of Centennial SOP: Vehicle Maintenance SOP, August 2007.

City of Centennial SOP: Vehicle Washing SOP, August 2007.

City of Golden. Fleet Maintenance Standard Operating Procedure, 29 July 2007.

City of Lafayette Standard Operating Procedure: Vehicle and Equipment Maintenance Repair, March 2009.

City of Lafayette Standard Operating Procedure: Vehicle and Equipment Washing, March 2009.

Mesa County, Municipal Operation and Maintenance Program, 4 July 2005.

Partners for a Clean Environment. Stormwater Protection: Vehicle Repair. Spring 2009.

USEPA Menu of BMP: Municipal Vehicle and Equipment Maintenance, [cfpub.epa.gov/npdes/stormwater/menuofbmps/](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/), accessed 27 May 2009.

USEPA Menu of BMP: Municipal Vehicle and Equipment Washing, [cfpub.epa.gov/npdes/stormwater/menuofbmps/](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/), accessed 27 May 2009.

## 2.0 LARGE OUTDOOR FESTIVALS AND EVENTS

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### 2.1 Description

Large outdoor festivals and events operated and controlled by the County have the potential to impact stormwater quality. For clarification purposes, this SOP is intended to include events for which street closure permits are issued by the County. Potential contaminants may include trash, septage, and organics.

For organizations (non-County) requesting street closure permits, the requirements as set forth in this SOP will be communicated at the time of application. Applicants granted a street closure permit for an activity will be expected to follow the same procedures as if the event were County sponsored.

A large event would meet all of the following criteria:

- Portable toilets;
- Trash receptacles; and
- Food and beverage vendors.

When services are contracted, this written procedure should be provided to the contractor so they have the proper operational procedures. In addition, the contract should specify that the contractor is responsible for abiding by all applicable municipal, state, and federal codes, laws, and regulations.

### 2.2 Procedure

#### TRASH COLLECTION AND REMOVAL

- Provide adequate trash receptacles for vendors and guests;
- Monitor and respond to leaking waste containers;
- Empty trash receptacles to prevent overflow;
- Store waste containers under cover or on grassy areas, if possible;
- Do not wash out trash receptacles unless wash water will be discharged to the sanitary sewer;
- Walk the outdoor festival and event area during and after every large event to pick up loose trash and debris. Properly dispose of this material;
- Sweep the roadway and parking lots after the large festival or event;
- Follow the Power Washing SOP for clean-up procedures (as required); and

- Follow the Spill Prevention and Response SOP. Have spill kits available and ensure that vendors understand that it is prohibited to dump any pollutants into the storm sewer system.

### PORTABLE TOILET SERVICE

Portable toilets are used at most large outdoor festivals and events. All portable toilet waste is classified as septage. The County will use a licensed waste hauler to dispose of their waste for any large outdoor festival or event that has portable toilets. The units will be removed as soon as the festival or event is completed so that they do not become a nuisance or vandalized.

### FOOD AND BEVERAGE VENDOR WASTE

Waste generated by food and beverage vendors is regulated by the Colorado Retail Food Rules and Regulations.

## **2.3 Employee Training**

- Train applicable employees who perform trash collection and street sweeping and issue leases/permits for large outdoor festivals and events on this written procedure. Information on how to respond to spills will be presented during the training; and
- Periodically conduct refresher training on the SOP for applicable employees who perform trash collection and street sweeping activities.

## **2.4 Records**

The following records could be used to document activities performed:

- Records of employee training with sign-in sheet.

## **2.5 References**

City of Greeley, Department of Public Works: Street Sweeping Program, June 2008.

Mesa County, Municipal Operation and Maintenance Program, 4 July 2005.

Partners for a Clean Environment. Stormwater Protection: Special Event BMPs. Spring 2009.

## **3.0 OUTDOOR MATERIAL STORAGE (“BULK STORAGE”)**

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### **3.1 Description**

The responsible management of automotive products, fertilizers, pesticides, paints, chemicals, and other materials at a municipal facility can significantly reduce polluted stormwater runoff. All materials should be handled properly including unloading, use, storage, and disposal. Proper management of materials can also reduce the likelihood of accidental spills or releases.

Bulk storage is defined in the stormwater permit and pertains to the primary source storage (containment to be drawn from or added to) of material, including petroleum products and other chemicals and materials, such as used antifreeze and liquid deicer (magnesium chloride). Bulk fuel storage is specifically addressed in the Fuel Storage SOP. Bulk storage does not include electrical, operating, or manufacturing equipment, mobile power containers, magnesium chloride containers on trucks for application, and ancillary product piping. Bulk storage on mobile refuelers that are subject to the authority of the United States Department of Transportation, as defined in the Memorandum of Understanding between the Secretary of Transportation and the Administrator of the United States Environmental Protection Agency (EPA) dated November 24, 1971 are not subject to these requirements.

When services are contracted, this written procedure should be provided to the contractor so they have the proper operational procedures. In addition, the contract should specify that the contractor is responsible for abiding by all applicable municipal, state, and federal codes, laws, and regulations.

### **3.2 Procedure**

#### GENERAL

- Establish material storage and inventory controls to minimize the amount of materials used and stored;
- Periodically inspect material storage areas to ensure that all materials are being stored properly when not in use;
- Clean the material storage area when necessary using dry cleanup methods;
- Properly dispose of unused materials; and
- Store materials in a manner that reduces the potential for transport in stormwater flows.

#### MATERIALS STORED IN CONTAINERS

- Whenever possible, containerize and cover stored materials to prevent stormwater from coming in contact with materials.



- Secondary containment is required for all bulk storage structures (containers) with a capacity greater than 55 gallons. If a single containment system will be used for multiple containers, the secondary containment must have sufficient capacity to contain 10% of the combined volume of the containers or 110% of the volume of the largest individual container, whichever is greater;
- Store containers in a location where they will not be accidentally damaged by equipment or vehicles;
- Provide tight-fitting lids for all containers;
- Follow the Spill Prevention and Response SOP to respond to and clean up any spills or leaks;
- Inspect storage containers regularly for signs of leaking or deterioration;
- Replace or repair leaking storage containers;
- Use care to avoid spills when transferring materials from one container to another; and
- Use powered equipment or get assistance when moving materials to and from a storage area. Handle containers appropriately and get help if needed. Use care to prevent punctures in the containers from equipment.

#### LOOSE MATERIALS

- Consolidate loose material (gravel, mulch, etc.) and berm where needed to prevent run-on of stormwater;
- Follow the Salt and Sand Storage procedure (below) for piles of salt and sand;
- Large inert materials such as piping and road signs can be stored outside without a protective covering. These materials do not impact stormwater quality; and
- Rusting iron is a potential source for stormwater pollution and should not come in contact with stormwater.

#### SALT AND SAND STORAGE

When siting a material stockpile either for temporary or long-term storage, the overall site drainage system, including stormwater controls, must be considered. For facilities with detention basins, siting material stockpiles within areas that drain to the detention basin provides a good source of secondary treatment for any material that does migrate from the stockpile. However, detention basins should not be used as a primary control due to the potential increase in maintenance activity and the decrease in facility effectiveness due to the increase in sediment loading.

- To the maximum extent practicable, material stockpiles should not be located in close proximity to storm sewer inlets. If there is insufficient space to provide a significant distance from the storm sewer inlet, inlet protection should be provided;
- The primary mechanism for transport from a material stockpile is raindrop impact, particle detachment, and transport. This migration can be limited by:

- ❑ Preventing rainfall from directly impacting the stockpile (cover or storage beneath a roof);
- ❑ Preventing the transport of material from the stockpile (physical barrier such as a silt fence or berm, etc.); or
- ❑ Grading the surrounding ground surface to prevent transport away from the stockpile.

To the maximum extent practicable, salt/sand, landscaping materials, and debris from storm sewer maintenance activities that are stored outdoors should be covered. The cover can be in the form of a roof or a tarp or similar type cover.

In the absence of a cover, to the degree that the topography of the available stockpile area allows, physical barriers, such as silt fencing or concrete (Jersey) barriers should be set on the downgradient edge of the stockpile to prevent migration of stockpile material during rainfall events.

When locating a material stockpile, grading the ground below the stockpile and in the immediate vicinity to drain back toward the stockpile can also prevent material migration. This option must be carefully evaluated due to the potential for saturating the stockpiled materials if there is not a drainage outlet.

### HAZARDOUS MATERIALS

- Identify all hazardous materials stored at the facility;
- Maintain a Material Safety Data Sheet (MSDS) for each hazardous chemical;
- Clearly label all containers with the name, chemical, unit number, expiration date, handling instructions, and health and environmental standards; and
- Provide special handling, storage (e.g., metal lockers), and disposal for all hazardous materials.

## **3.3 Employee Training**

- Train applicable employees on this written procedure. Information on how to respond to spills will be presented during the training; and
- Periodically conduct refresher training on the SOP for applicable employees who perform outdoor material storage activities.

## **3.4 Records**

The following records could be used to document activities performed:

- Records of employee training with sign-in sheet;
- MSDSs; and
- Packing lists, purchasing records, and inventory records.

### **3.5 References**

City of Centennial SOP: Good Housekeeping, August 2007.

City of Centennial SOP: Materials Storage, August 2007.

Mesa County, Municipal Operation and Maintenance Program, 4 July 2005.

USEPA Menu of BMP: Materials Management, [cfpub.epa.gov/npdes/stormwater/menuofbmps/](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/), accessed 1 July 2009.

## 4.0 POWER WASHING

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### 4.1 Description

Wastewater from power washing must not be allowed to enter the storm sewer system and must be disposed properly. Power washing combined with proper wastewater collection can prevent or reduce fine-grained sediment particles, anti-freeze, oil, paint, or trash from polluting stormwater.

When services are contracted, this written procedure should be provided to the contractor so they have the proper operational procedures. In addition, the contract should specify that the contractor is responsible for abiding by all applicable municipal, state, and federal codes, laws, and regulations.

### 4.2 Procedure

#### GENERAL

- Use dry methods for surface pre-cleaning, such as using sorbent material on small oil spots and sweeping up trash, debris, dirt, and used sorbent before power washing;
- Minimize the amount of water used during power washing activities; and
- Avoid using cleaning products that contain hazardous substances (e.g., hydrofluoric acid, muriatic acid, sodium hydroxide, bleach) that can turn wastewater into hazardous waste.

#### WASTEWATER COLLECTION

- Identify the locations of all storm drains in the area and place inlet protection or drain covers at all locations, as needed;
- Locate high and low spots on the property to determine the area where wastewater will be pooled for collection;
- Equipment to contain and collect wastewater generated by power washing includes: vacuum pumps, booms, berms, portable containment areas, weighted storm drain covers, inflatable plumber's plugs, oil and water separators, holding tanks, portable sump pumps, hoses, and absorbent pads;
- Avoid mixing non-hazardous wastewater with wastewater known to contain hazardous substances or hazardous levels of pollutants. Mixing these wastes may increase the characteristic and/or total volume of waste, resulting in more expensive disposal and additional regulatory requirements;
- Place an oil-absorbent mat or pad on top of collected wastewater to help reduce ("skim") the amount of oil re-deposited on the surface of the collection area;

- Wastewater can be filtered through an oil absorbent boom or oil/water separator and a filter to decrease the concentration of oil in the liquid and the amount of solids in the wastewater; and
- Once wastewater has been collected, visible solids remaining in the collection area after liquids have evaporated must be swept up and properly disposed to prevent future discharges to the storm sewer system.

### WASTEWATER DISPOSAL

- Do not dispose of power washing wastewater into the storm sewer system;
- Power washing wastewater may be disposed in an inside drain connected to the sanitary sewer system with the permission of the wastewater treatment plant (may require a permit) and the facility owner where the work is being performed. Collected wastewater can also be discharged to the sanitary sewer system at the power washer's place of business with the permission of the wastewater treatment plant, or can be taken directly to a wastewater treatment plant;
- Do not remove sewer manhole covers to dispose of wastewater to the sanitary sewer system without prior approval; and
- Power washing wastewater may be discharged to landscaped areas if it is not harmful to vegetation, there is no ponding, and there is no runoff from the site to the storm sewer system.

## **4.3 Employee Training**

- Train employees who perform power washing activities on this written procedure. Information regarding how to avoid and report spills will be presented during the training; and
- Periodically conduct refresher training on the SOP for employees who perform power washing.

## **4.4 Records**

The following records could be used to document activities performed:

- Records of employee training with sign-in sheet; and
- List of power washing activities and departments responsible for conducting power washing.

## **4.5 References**

City of Fort Collins, Regulatory and Government Affairs Division, *Power Washing Guidance*, no date.

City of Golden, *BMPs for Pressure Washing*, January 2004.

Partners for a Clean Environment, *Water Protection Guide: Pressure Washers*, no date.

Colorado Department of Public Health and Environment, *Discharge of Process Wastewater from Power Washing Operations*, no date.

## 5.0 SNOW AND ICE CONTROL

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### 5.1 Description

Deicers can contaminate surface and ground water and damage vegetation adjacent to roadways. Salt will change the chemical balance of local waterways and sand can be picked up by stormwater resulting in higher dissolved and suspended sediment loads in waterways. Sand also presents an air quality concern.

When services are contracted, this written procedure should be provided to the contractor so they have the proper operational procedures. In addition, the contract should specify that the contractor is responsible for abiding by all applicable municipal, state, and federal codes, laws, and regulations.

### 5.2 Procedure

#### PLOWING

- Inspect plowing equipment for leaks prior to use. Follow the Equipment and Vehicle Maintenance SOP for responding to leaking vehicles;
- Take care when connecting or releasing plow shovels and clean up any hydraulic fluid that may leak onto the pavement following the Spill Prevention and Response SOP;
- Wash snow removal equipment only at approved washing stations following the Equipment or Vehicle Maintenance SOP; and
- Do not pile snow in front of storm sewer inlets to allow inflow of snowmelt runoff.

#### DEICER APPLICATION - ROADWAYS

- Apply only the recommended amount of deicer to roadways;
- Spreaders should be calibrated at the beginning of each season and inspections for maintenance or repair should be conducted after each storm; and
- As soon as weather conditions allow, follow-up with street sweeping to remove remaining deicer from roadways.

#### DEICER APPLICATION – WALKWAYS

- Apply only the recommended amount of deicer to walkways;
- Use hand spreaders to ensure uniform distribution of deicing product to walkway surface; and
- As soon as weather conditions allow and the ice has melted, sweep up the excess product and dispose of it in an approved waste receptacle.

## ICE CUTTING

- Gutters and storm sewer inlets should be cleared of ice to allow drainage of snowmelt or ice-melt.

### **5.3 Employee Training**

- Train employees who are involved in snow and ice control on this written procedure. Information regarding proper storage practices and how to prevent and report spills will be presented during the training; and
- Periodically conduct refresher training on the SOP for employees who are involved in snow and ice control.

### **5.4 Records**

The following records may be used to document activities performed:

- Record of any major spills and the action taken; and
- Records of employee training with sign-in sheet.

### **5.5 References**

City of Centennial SOP: Snow Removal SOP, August 2007.

City of Golden, Snow and Ice Control Action Plan, Winter 2008-2009.

City of Greeley: Snow and Ice Control Plan, No Date.

City of Lafayette SOP: Salt Chemical Storage SOP, March 2009.

Mesa County, Municipal Operations and Maintenance Program, July 2005.



## 6.0 SNOW STORAGE

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### 6.1 Description

Snow may have to be stored during major winter storms to increase street accessibility. It is possible for pollutants such as sediment, organics, oil, and grease to be concentrated at snow storage locations and to impact stormwater quality.

When services are contracted, this written procedure should be provided to the contractor so they have the proper operational procedures. In addition, the contract should specify that the contractor is responsible for abiding by all applicable municipal, state, and federal codes, laws, and regulations.

### 6.2 Procedure

#### SNOW STORAGE

- Snow should be stored away from storm sewer inlets and waterways;
- When possible, snow should be stored on a pervious surface to allow infiltration;
- Snowmelt runoff should be routed through a best management practice (BMP) (e.g., extended detention basin, oil/water separator, vegetated buffer) prior to reaching a water body; and
- Sweep or vacuum impervious snow storage areas once snow has melted.

### 6.3 Employee Training

- Train employees who are involved with snow storage on this written procedure. Information regarding proper storage practices and how to prevent and report spills will be presented during the training; and
- Periodically conduct refresher training on the SOP for employees who are involved with snow storage activities.

### 6.4 Records

The following records could be used to document activities performed:

- Records of employee training with sign-in sheet.

### 6.5 References

City of Centennial SOP: Snow Removal SOP, August 2007.

City of Golden SOP: Snow Storage SOP, No Date.

City of Lafayette SOP: Snow Disposal SOP, March 2009.

## 7.0 SPILL PREVENTION AND RESPONSE

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### 7.1 Description

Due to the type of work and the materials involved, many activities that occur either at a municipal facility or as part of municipal operations have the potential for accidental spills. Some municipal facilities operate under Spill Prevention Control and Countermeasures (SPCC) Plans that include procedures for spill response related to petroleum fuels, oils, and lubricants (POLs). Proper spill response planning and preparation enables employees and contractors to effectively respond to problems and minimize the discharge of pollutants to the storm sewer system. Douglas County is required under the MS4 General Permit to create and implement an Illicit Discharge Detection and Elimination (IDDE) Program designed to address any non-stormwater discharges to the storm sewer system.

When services are contracted, this written procedure should be provided to the contractor so they have the proper operational procedures. In addition, the contract should specify that the contractor is responsible for abiding by all applicable municipal, state, and federal codes, laws, and regulations.

### 7.2 Procedure

#### SPILL PREVENTION

- Keep work areas neat and well organized;
- Maintain a Material Safety Data Sheet (MSDS) for each hazardous chemical. Follow the Outdoor Material Storage SOP (Section 3.0 in this Manual);
- Provide tight fitting lids for all containers;
- Keep containers clearly and properly labeled. Labels should provide name and type of substance, stock number, expiration date, health hazards, handling suggestions, first aid information, and, when applicable (i.e., after use), whether the contents are “used” and to be recycled or “hazardous waste” and to be disposed properly;
- Store containers, drums, and bags away from direct traffic routes to prevent accidental spills;
- Inspect storage containers regularly for signs of leaking or deterioration;
- Replace or repair leaking storage containers;
- Use care to avoid spills when transferring materials from one container to another;
- Use powered equipment or get assistance when moving materials to and from a storage area. Use care to prevent puncturing containers with the equipment;

- Do not wash down or hose down any outdoor work areas or trash/waste container storage areas except where wash water is captured and discharged into the sanitary sewer (if approved);
- Conduct periodic inspections to ensure that materials and equipment are being handled, disposed/recycled, and stored correctly;
- Provide adequate spill kits or lockers with sufficient equipment and supplies necessary for each work area where the potential for spills or leaks exists;
- Inspect each spill kit or locker regularly and after each spill response. Replace any spent supplies or repair any equipment that is worn or not suitable for service; and
- Stock adequate personal protective equipment.

### SPILL RESPONSE

#### **Safety**

Consider safety at all times. Anticipate and avoid all likely hazards. Never approach, contact, or sample an unknown substance. If a highly toxic or flammable substance is discovered, staff should leave the immediate area and contact the appropriate identified response authority, such as the fire department. If there is any question about a substance, contact the appropriate identified response authority or other designated representative.

#### **Procedures**

- Stop the leading edge of the spill. Block or divert the spill to avoid discharge to the storm sewer system and to minimize the area requiring clean up;
- Determine the source of the spill and stop the spill at its source by closing a valve, plugging a leak, or setting a container upright. Transfer material from a damaged container to prevent additional spillage;
- Identify the material and volume spilled. Contact the appropriate identified response authority or other designated representative if you cannot identify the material and its properties;
- Before initiating any type of cleanup activity, refer to the applicable MSDS(s) to determine appropriate personal protective equipment, such as gloves and safety glasses and appropriate cleanup methods;
- Clean up spills immediately to prevent spreading of wastes by wind, rain, and vehicle traffic and potential safety hazards;
- Use sand absorbents or socks, pillows, or pads to quickly capture spilled liquid and properly dispose of all clean-up materials. Use dry clean-up methods only (do not use water to “wash down” any remaining spilled product);
- Notify the Douglas County Engineering Stormwater Group ([stormwater@douglas.co.us](mailto:stormwater@douglas.co.us)) for any spills that enter an inlet, pond, open channel, or any other stormwater conveyance

feature. **Incidental spills that are spot-cleaned do not require notification to the Engineering Stormwater Group;** and

- Complete all necessary reporting requirements, including completing the **Spill Notification Form** (if required), located at the end of this Section.

### 7.2.1 Minor Spill Response

A “Minor Spill Response” is defined as one that poses no significant threat to human health or the environment. These spills generally involve an identified (reasonably known) material, a spilled volume of less than five gallons, and can usually be cleaned up by Douglas County personnel. Other characteristics of a minor spill include:

- The spilled material is easily stopped or controlled at the time of the spill;
- The spill is localized;
- The spilled material is not likely to reach surface water or groundwater;
- There is little danger to human health; and
- There is little danger of explosion.

In the event of a “Minor Spill” at a County facility, the following procedure shall be used:

- The facility manager (or senior on-site employee) and the Engineering Stormwater Group ([stormwater@douglas.co.us](mailto:stormwater@douglas.co.us)) will be notified of the spill;
- If necessary, the spill will be physically contained to prevent further migration from the facility;
- The spill will be cleaned-up using OIL-DRY or equivalent absorbent material. A supply of OIL-DRY material is stored near the fueling facility at each site;
- The contaminated material (spill debris) will be placed in an approved and properly labeled container (noting date of spill, material spilled, etc.) and placed in the on-site Spill Receptacle. If the facility does not have a Spill Receptacle, the container should be transported to the nearest County facility that has a Spill Receptacle. Facilities that currently (as of August 2018) have Spill Receptacles include Castle Rock Ops, Parker (Gailen Buck) Ops, and Highland Heritage Park Administration; and
- The spill will be reported using a **Spill Notification Form** (located at the end of this Section) and sent to the facility’s Designated Responsible Person and the Engineering Stormwater Group ([stormwater@douglas.co.us](mailto:stormwater@douglas.co.us)).

In the event of a “Minor Spill” off-site, the following procedure shall be used:

- The reporting County employee’s Supervisor and the Engineering Stormwater Group ([stormwater@douglas.co.us](mailto:stormwater@douglas.co.us)) will be notified of the spill;
- If necessary, the spill will be physically contained to prevent further migration;
- Measures (traffic cones, flagging, etc.) will be taken to exclude the public from the spilled material to prevent tracking of the spilled material until the cleanup is complete;

- The spill will be cleaned-up using OIL-DRY or equivalent absorbent material;
- The contaminated material (spill debris) will be placed in an approved and properly labeled container and transported to the nearest County facility with a Spill Receptacle. Facilities that currently (as of August 2018) have Spill Receptacles include Castle Rock Ops, Parker (Gailen Buck) Ops, and Highland Heritage Park Administration; and
- The spill will be reported using a **Spill Notification Form** (located at the end of this Section) and sent to the facility's Designated Responsible Person and the Engineering Stormwater Group (stormwater@douglas.co.us).

## 7.2.2 Major Spill Response

A "Major Spill Response" is defined as one involving a spill in which the spilled material is unknown or a known material is spilled and cannot be safely and or adequately controlled or cleaned up by on-site personnel. Characteristics include the following:

- The spill is large enough to spread beyond the immediate spill area;
- The spilled material enters surface water or groundwater (regardless of spill size);
- The spill requires special training and equipment to clean up;
- The spilled material is a threat to human health; and/or
- There is a danger of fire or explosion.

In the event of a "Major Spill" at a County facility, the following procedure shall be used:

- All workers shall immediately evacuate the spill site and move to a safe distance away from the spill;
- A senior on-site person shall call the Fire Department for medical assistance if workers are injured and Emergency Services will be called for emergency spill response;
- A senior on-site person shall contact the Facility Manager and the Engineering Stormwater Group (stormwater@douglas.co.us) and provide details regarding the spill;
- The State Environmental Emergency Response Center (303-756-4455) and the National Response Center (1-800-424-8802) must be contacted. Calls will be documented on the **Spill Notification Form** (included at the end of this Section);
- The Facility Manager will coordinate cleanup and seek assistance from a cleanup contractor, as necessary; and
- The spill will be reported using a **Spill Notification Form** (located at the end of this Section) and sent to the facility's Designated Responsible Person and the Engineering Stormwater Group (stormwater@douglas.co.us).

In the event a "Major Spill" is identified off-site, the following procedure shall be used:

- Measures will be taken to immediately evacuate the spill site, move any people to a safe distance away from the spill, and establish a perimeter (using traffic cones, flagging, vehicle, equipment, etc.) to prevent any people from getting too close to the spill;

- The reporting County employee shall call the Fire Department for medical assistance if anyone is injured and Emergency Services will be called for emergency spill response;
- The reporting County employee shall contact their Supervisor and the Engineering Stormwater Group (stormwater@douglas.co.us) and provide details regarding the spill;
- The State Environmental Emergency Response Center (303-756-4455) and the National Response Center (1-800-424-8802) must be contacted. Calls will be documented on the **Spill Notification Form** (included at the end of this Section);
- The Supervisor, Manager, or Contractor in charge of the work or the equipment that caused the spill will coordinate cleanup and seek assistance from a cleanup contractor, as necessary; and
- The spill will be reported using a **Spill Notification Form** (located at the end of this Section) and sent to the Engineering Stormwater Group (stormwater@douglas.co.us).

Petroleum releases of 25 gallons or more (or that can cause a sheen on nearby surface waters) from regulated aboveground and underground fuel storage tanks must be reported to the State Oil Inspector within 24 hours. This includes spills from fuel pumps. Any release that has or may impact waters of the State (which include surface water, ground water and dry gullies or storm sewers leading to surface water), no matter how small, must be reported immediately to the CDPHE as per Section 25-8-601 of the Colorado Revised Statutes (CRS).

In the case of on-site spills, if a senior on-site person is not available at the time of the spill, then the Douglas County employee in command shall assume responsibility. Due to the volume of oil stored at most County facilities, spills of more than 10,000 gallons are not expected to occur; however, should a spill over 1,000 gallons or two spills (over 42 gallons) occur within any 12-month period at any facility, the prescribed report will be prepared, recorded in the facility's SPCC Plan, and submitted to the Environmental Protection Agency (EPA) Regional Administrator (as per the requirements of 40 CFR 112).

Table 1 presents the telephone numbers that are to be used to contact appropriate response personnel or agency in the event of an emergency. This table should be reviewed and updated, as necessary, on a monthly basis.

**TABLE 1: EMERGENCY TELEPHONE NUMBERS**

Contact	Phone Number
Fleet Manager	(303) 660-7480
Fire Department	911
Police Department	911
National Response Center	(800) 424-8802
State Oil Inspector	(303) 318-8547
State Environmental Emergency Response	(303) 756-4455
CDPHE Environmental Emergency Spill Reporting	(877) 518-5608
Kubat Equipment (Maintenance Contractors)	(303) 777-2044

### 7.2.3 Spill Reporting

- A spill of any chemical, oil, petroleum product, or sewage that enters waters of the state of Colorado (that include surface water, ground water, and dry gullies and storm sewers leading to surface water) must be reported immediately to the CDPHE;
- Release of a substance into a storm drain, or onto a parking lot or roadway as part of a storm sewer leading to surface water, is reportable. However, if the material can be contained and cleaned within the storm sewer system to the degree that a subsequent flow in the storm sewer will not flush the substance to waters of the State, it may not need to be reported;
- Contact the appropriate identified response authority within the County or other designated representative and be prepared to provide details needed to report the spill to the necessary agencies; and
- Detailed spill reporting guidance can be found at:
  - <http://www.cdphe.state.co.us/op/wgcc/Resources/Guidance/spillguidance.pdf>; and
  - <http://www.cdphe.state.co.us/hm/spillsandreleases.htm>.

### 7.3 Employee Training

- Train employees who perform spill prevention and response on this written procedure. Information regarding how to avoid and report spills will be presented during the training; and
- Periodically conduct refresher training on the SOP for employees who perform spill prevention and response activities.

### 7.4 Records

The following records could be used to document activities performed:

- Records of any major spills and the action taken; and
- Records of employee training with sign-in sheet.

### 7.5 References

City of Centennial, Department of Public Works: Good Housekeeping, No Date.

City of Centennial, Department of Public Works: Materials Management, No Date.

City of Centennial, Department of Public Works: Spill Prevention and Control, No Date.

City of Golden, Stormwater Quality Pollution Prevention Guide for Municipal Operations: Parks Department Golf Course, January 2004.

City of Lafayette, Spill Clean Up, No Date.

Colorado Department of Public Health and Environment, Environmental Spill Reporting, January 2009.

Mesa County, Municipal Operation and Maintenance Program, July 4, 2005.

USEPA Menu of BMP: Spill Response and Prevention,  
[cfpub.epa.gov/npdes/stormwater/menuofbmps/](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/), accessed July 5, 2009.



# DOUGLAS COUNTY SPILL NOTIFICATION FORM

**DEFINITION OF AN ILLICIT DISCHARGE** – The term “Illicit Discharge” is defined in the MS4 Phase II General Permit as “Any discharges to an MS4 that is not composed entirely of stormwater except discharges specifically authorized by a CDPS or NPDES Permit and discharges resulting from emergency firefighting activities.”

Email this completed form to the Engineering Stormwater Group:  
[stormwater@douglas.co.us](mailto:stormwater@douglas.co.us)

**NOTE: Potentially dangerous spills (e.g., fuel, chemicals, hazardous materials) shall be referred to Emergency Services.**

DATE OF REPORT \_\_\_\_\_ DATE OF DISCHARGE \_\_\_\_\_

LOCATION OF DISCHARGE \_\_\_\_\_  
\_\_\_\_\_

DISCHARGE REPORTED BY \_\_\_\_\_

	YES	NO
Is this an active discharge?		
Did this discharge enter the MS4? Where? <input type="checkbox"/> Gutter; <input type="checkbox"/> Inlet; <input type="checkbox"/> Junction; <input type="checkbox"/> Drainageway; <input type="checkbox"/> Transfer off-site; <input type="checkbox"/> Other (specify) _____		
Has this illicit discharge been field verified?		
Is a follow-up visit needed? If so, when is this scheduled to occur? _____		
Has containment of the illicit discharge occurred?		
Has this been reported to the Emergency Services?		

What type of discharge has occurred?  Motor Oil;  Antifreeze;  Transmission Fluid;  Hydraulic Fluid;  Detergents;  Solvents/Degreaser;  Paint/Paint products;  Fuel < 25 Gallons;  Fuel 25 Gallons or Greater;  Construction Debris;  Trash;  Other (specify) \_\_\_\_\_

TYPE OF MITIGATION USED \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

COMMUNICATION LOG (include notes from emails and phone calls) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NAME/TITLE OF STAFF PERSON TAKING REPORT \_\_\_\_\_

## 8.0 STREET, CURB, AND GUTTER MAINTENANCE, REPLACEMENT, AND CONSTRUCTION

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### 8.1 Description

Street, curb, and gutter activities include concrete and asphalt installation, maintenance, repair, and replacement; bridge maintenance; and painting and striping. Procedures involving the maintenance of streets, curbs, and gutters have the potential to impact stormwater quality. Materials involved in these activities should be used efficiently and disposed properly.

When services are contracted, this written procedure should be provided to the contractor so they have the proper operational procedures. In addition, the contract should specify that the contractor is responsible for abiding by all applicable municipal, state, and federal codes, laws, and regulations.

### 8.2 Procedure

#### GENERAL

- Obtain all applicable federal, state, and local permits for construction projects;
- The Colorado Stormwater Construction General permit applies to construction sites disturbing one acre or more, or less than one acre but part of a larger common plan of development;
- Douglas County's Grading, Erosion, and Sediment Control (GESC) program requires all projects (including County projects), regardless of the amount of disturbance, to obtain a permit through the GESC program or a waiver after a demonstration of no or minimal impact;
- A larger common plan of development is defined as a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under one plan;
- A dewatering permit may be required if construction activities require the removal and discharge of groundwater offsite;
- A U.S. Army Corps of Engineers (USACE) Section 404 Permit may be needed if the work will be conducted in or impact waters of the United States, including wetlands, and creeks;
- Where practicable, non-structural controls will be used, such as phased construction, dust control, good housekeeping practices, and spill prevention and response procedures;
- Best management practices (BMPs) will be implemented as appropriate and they will be inspected and maintained in accordance with approved design criteria, manufacturer's recommendations, or industry standards;

- Wash out mixers, delivery trucks, or other equipment in designated washout areas only;
- Locate concrete washout, portable toilets, and material storage away from storm drain inlets;
- Material stockpiles will not be stored in stormwater flow lines. Temporary sediment control will be used during temporary, short-term placement while work is actively occurring;
- Protect storm drain inlets and drains with curb socks, rock berms, inlet protection, or drain covers/mats prior to any maintenance activity;
- When saw cutting, ensure that no slurry enters the storm drain, let the slurry dry, sweep it up, and properly dispose of the sweepings;
- Do not perform concrete or asphalt patch work during wet conditions whenever possible;
- Leaking material containers should be properly discarded and replaced;
- Store materials in containers under cover when not in use and away from any storm drain inlet;
- Monitor equipment for leaks and use drip pans as necessary; and
- Sweep or vacuum the roadway once maintenance activities are complete.

#### BRIDGE MAINTENANCE

- Do not transfer or load any materials directly over waterways;
- Secure lids and caps on all containers when on bridges; and
- Suspend drop cloths or nets below any bridgework where wastes, scraps, or drips might be spilled into a waterway.

#### CONCRETE MAINTENANCE

- Minimize the drift of chemical cure on windy days by using the curing compound sparingly and applying it close to the concrete surface;
- Ensure there is a concrete truck washout area available or require the contractor to wash out at the batch plant; and
- Whenever possible, recycle concrete rubble; otherwise, dispose of it as solid waste.

#### ASPHALT MAINTENANCE

- Sweep to minimize sand and gravel from new asphalt from getting into storm drains, streets, and creeks;
- Do not allow asphaltic concrete grindings, pieces, or chunks used in embankments or shoulder backing to enter any storm drain or watercourses. Apply temporary perimeter controls. Install silt fence until the structure is stabilized or permanent controls are in place;
- Whenever possible, recycle broken asphalt. If recycling is not feasible, dispose of as solid waste; and

- Drainage inlet structures shall be covered with inlet protection during application of seal coat, tack coat, slurry seal, and/or fog seal.

### PAINING AND STRIPING

- If possible, schedule painting and striping projects during dry weather;
- Use thermoplastic or epoxy markings in place of paint whenever feasible; and
- The pre-heater for thermoplastic striping and the melting tanks used during pavement marking must be filled carefully to prevent splashing or spilling of materials. Leave six inches at the top of pre-heater and the melting tanks to allow room for material to move and splash when vehicles are deadheaded.

## **8.3 Employee Training**

- Train employees who perform street, curb, and gutter maintenance on this written procedure. Information regarding how to avoid and report spills will be presented during the training; and
- Periodically conduct refresher training on the SOP for employees who perform street, curb, and gutter maintenance.

## **8.4 Records**

The following records could be used to document activities performed:

- Records of employee training with sign-in sheet.

## **8.5 References**

City of Centennial, Department of Public Works: Asphalt and Concrete Program, No Date.

City of Centennial, Department of Public Works: Asphalt Program, No Date.

PACE, Stormwater Best Management Practices: Street Maintenance, No Date.

City of Glendale, Department of Public Works; Glendale Municipal Operation SOPs, Revised December 2016.

## 9.0 UTILITY AND STORM SEWER REPLACEMENT AND CONSTRUCTION

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### 9.1 Description

Procedures involving the replacement and construction of utilities and storm sewers have the potential to impact stormwater quality. Materials involved in these activities should be used efficiently and disposed properly.

When services are contracted, this written procedure should be provided to the contractor so they have the proper operational procedures. In addition, the contract should specify that the contractor is responsible for abiding by all applicable municipal, state, and federal codes, laws, and regulations.

### 9.2 Procedure

#### GENERAL - CONSTRUCTION

- Obtain all applicable federal, state, and local permits for construction projects;
- The Colorado Stormwater Construction General permit applies to construction sites disturbing one acre or more, or less than one acre but part of a larger common plan of development;
- A larger common plan of development is defined as a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under one plan;
- A dewatering permit may be required if construction activities require the removal and discharge of groundwater offsite;
- A U.S. Army Corps of Engineers (USACE) Section 404 Permit may be needed if the work will be conducted in or impact waters of the United States, including wetlands, and creeks;
- Where practicable, non-structural controls will be used, such as phased construction, dust control, good housekeeping practices, and spill prevention and response procedures;
- BMPs will be implemented as appropriate and they will be inspected and maintained in accordance with approved design criteria, manufacturer's recommendations, or industry standards;
- When feasible, grading activities will be scheduled during dry weather;
- Wash out mixers, delivery trucks, or other equipment in designated washout areas only;
- Locate concrete washout, portable toilets, and material storage away from storm drain inlets;

- Material stockpiles will not be stored in stormwater flow lines. Temporary sediment control will be used during temporary, short-term placement while work is actively occurring;
- Protect storm drain inlets and drains with curb socks, rock berms, inlet protection, or drain covers/mats prior to any maintenance activity;
- When saw cutting, ensure that no slurry enters the storm drain, let the slurry dry, sweep it up, and properly dispose of the sweepings;
- Do not perform concrete or asphalt paving work during wet conditions whenever possible;
- Leaking material containers should be properly discarded and replaced;
- Store materials in containers under cover when not in use and away from any storm drain inlet;
- Monitor construction equipment for leaks and use drip pans as necessary; and
- Sweep or vacuum the roadway as needed during construction and once construction is complete.

### EMERGENCY REPAIR AND REPLACEMENT

Emergency discharges are defined as situations in which it is not possible to implement all of the available BMPs due to the uncontrolled nature of the discharge. The primary focus during these events is to identify and mitigate the cause as soon as practicable following the emergency. Refer to the Spill Prevention and Response SOP for reporting requirements.

## **9.3 Employee Training**

- Train employees who perform construction or replacement of utilities and storm sewer on this written procedure; and
- Periodically conduct refresher training on the SOP for employees who perform construction and replacement activities.

## **9.4 Records**

The following records could be used to document activities performed:

- Records of employee training with sign-in sheet.

## **9.5 References**

City of Glendale, Department of Public Works; Glendale Municipal Operation SOPs, revised December 2016.

## 10.0 STORM SEWER, CULVERTS, AND PONDS MAINTENANCE

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### 10.1 Description

Regular maintenance activities for storm sewer and culverts include flushing the culvert barrels or pipes of accumulated debris and sediment. Regular maintenance of ponds and catch basins may include the removal of accumulated sediment and debris. Appropriate measures need to be taken to ensure the sediment and debris flushed from the culvert barrels as well as the wash water used to flush the debris is contained, collected, and properly disposed. The debris removed from pond and catch basins must also be properly disposed. Maintenance activities should be completed during periods of low or no flow (preferable). In the event there is flow in the local waterway, an upstream temporary check dam may need to be installed to allow a pumped bypass to be used to keep the work area dry. In the event a pumped bypass is used, special consideration should be given to operating equipment (pumps, generators, etc.) near the water.

### 10.2 Procedure

#### STORM SEWER AND CULVERT MAINTENANCE

- A vacuum truck is used to collect all debris and sediment (and any water used in the jetting process) at the end of the culvert or pipe; and
- Properly dispose of all accumulated debris, sediment, and water at a County-approved disposal location.

#### POND AND CATCH BASIN MAINTENANCE

- A shovel, backhoe or similar equipment may be used to clean out accumulated debris and sediment from catch basins and ponds depending upon the size of the structure. A vacuum truck may also be used on smaller structures; and
- During removal activities, debris should be loaded out from the site as soon as possible and disposed at a County-approved disposal location. Temporary storage of removed debris should be minimized, but if necessary, debris should be stored away from the water (pond or catch basin) outside of any existing flowlines with BMP(s) in place to prevent stormwater from coming in contact with the debris and potentially remobilizing the debris.

### 10.3 Employee Training

- Train employees who perform culvert cleaning on this written procedure. Information regarding how to avoid and report spills will be presented during the training; and
- Periodically conduct refresher training on the SOP for employees who perform culvert cleaning.

## **10.4 Records**

The following records could be used to document activities performed:

- Records of employee training with sign-in sheet.

## **10.5 References**

Personal communication with Douglas County Road & Bridge personnel. 20 April 2009 and 25 November 2009.



## 11.0 GRAVEL ROAD MAINTENANCE

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### 11.1 Description

Douglas County contains a significant amount of gravel roads. Gravel roads require maintenance on a regular schedule to ensure the road surface is trafficable. Gravel road maintenance activities include:

- Reworking or regrading the actual road surface;
- “Pulling ditches” (removing accumulated sediment out of the road side ditch);
- Applying dust suppressant;
- Re-gravelling the road (approximately every five to ten years); and
- Repair of erosion damage.

### 11.2 Procedure

#### REGRAIDING ROAD SURFACE

- To the maximum extent practicable, regrading activities will attempt to balance cut to fill for regrading activities to minimize the need to haul material from the work site;
- Roadside ditches down gradient of the extents of regrading will have temporary check dams installed to capture sediment that may be mobilized during construction;
- To the maximum extent practicable, regrading activities will be conducted during periods when there is a low likelihood of rainfall activity; and
- Any excess material will be transported to a County-approved location and stabilized in place.

#### DITCH MAINTENANCE

- Over time, material from the shoulder of the road works its way into the roadside ditch. A motor grader (blade) is used to pull the material out of the ditch and up on to the shoulder;
- Install a removable (temporary) check dam in the roadside ditch down gradient of the area to be re-worked;
- Using a motor grader (blade) pull the material from the ditch and re-distribute evenly on the shoulder of the road. If there are significant accumulations in the ditch, a backhoe may be used to remove the material from the ditch;
- Remove any sediment or debris accumulation from the upstream side of the temporary check dam; and
- Dispose of the accumulated debris or sediment at a County-approved location.

### APPLICATION OF DUST SUPPRESSANT

- Dust suppressant (APEX, a magnesium chloride blend) is applied on 100 miles of the most traveled gravel roads in the County;
- The application of the dust suppressant occurs between late April and early October depending upon the weather conditions;
- The dust suppressant is continually applied in response to identified needs on the roads;
- A contractor supplies the dust suppressant (liquid) to the project where it is transferred to County trucks;
- The Spill Response SOP should be followed in the event of any spillage during transfer operations;
- Dust suppressant is applied according to manufacturer's recommended application rates;
- Application equipment should be checked regularly (weekly) to ensure the suppressant is applied at the correct rate; and
- In all cases, the rate of application should be low enough to prevent runoff of dust suppressant product into roadside ditches.

### RE-GRAVELLING ROADS

- Approximately every five to ten years (depending upon traffic volume), gravel roads require the re-application of gravel to the road surface.
- Install temporary (removable) check dams in the roadside ditch down gradient of the extents of re-gravelling;
- Apply rock evenly over the road surface;
- Remove any accumulated sediment from upstream side of temporary check dam, dispose of in a County-approved location; and
- Remove temporary check dam from roadside ditch.

### REPAIR OF EROSION DAMAGE

- Occasionally, inflow to roadside ditches causes bank erosion in the roadside ditch. Regular maintenance activities include the repair of these areas.
- Install temporary (removable) check dams in the roadside ditch down gradient of the area to be repaired;
- Rework the eroded area, adding additional fill if necessary to restore the original contour that existed prior to the erosion;
- Re-seed the regraded soil. If necessary, use erosion control blanket to stabilize the regraded soil until vegetation is re-established;
- After the area has stabilized, remove any accumulated sediment from the upstream side of the temporary check dam, dispose of in a County-approved location; and

- Remove temporary check dam from roadside ditch.

### **11.3 Employee Training**

- Train employees who perform gravel road maintenance activities on this written procedure; and
- Periodically conduct refresher training on the SOP for employees who perform gravel road maintenance activities.

### **11.4 Records**

The following records could be used to document activities performed:

- Records of employee training with sign-in sheet.

### **11.5 References**

Personal communication with Douglas County Road & Bridge personnel, 20 April 2009.

## 12.0 BRIDGE CLEANING OR PAINTING

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### 12.1 Description

Regular maintenance activities for bridges may include cleaning the painted surfaces and/or removing accumulated debris from the underside of bridge deck. Maintenance activities, including cleaning or painting, have the potential to introduce pollutants into waterways beneath the bridge.

### 12.2 Procedure

#### CLEANING

- Check the weather to ensure activities will be completed on a dry day when rain is not expected;
- Work on bridges should be scheduled during periods when waterways beneath the bridge (if any) are at annual low flows (or preferably non-existent). If the bridge is over a roadway, work should be scheduled during non-peak traffic times when traffic lanes beneath the bridge may be temporarily closed;
- Appropriate fall protection should be used by any personnel working in areas where there is a potential for a fall;
- When cleaning the deck of the bridge do not use water. Use a street sweeper/vacuum truck or hand brooms (if there are space constraints) to pick up debris. See Street Sweeping SOP for additional details;
- If cleaning requires the use of sandblasting equipment or sanders, vacuum bag attachments should be used to capture debris;
- If working on the sides or the underside of the bridge deck to remove accumulated debris, nets or tarps may need to be suspended below the bridge to catch falling debris; and
- All debris collected during the cleaning process should be properly disposed.

#### BRIDGE PAINTING

- The bridge surfaces to be painted should be properly cleaned and prepared prior to painting (see Cleaning Procedures, above);
- Check the weather to ensure activities will be completed on a dry day when rain is not expected;
- Work on bridges should be scheduled during periods when waterways beneath the bridge (if any) are at annual low flows (or preferably non-existent). If the bridge is over a roadway, work should be scheduled during non-peak traffic times when traffic lanes beneath the bridge may be temporarily closed;

- Appropriate fall protection should be used by any personnel working in areas where there is a potential for a fall;
- Calculate the amount of paint required for the job;
- Transport and store paint and materials in containers with secure lids;
- Do not transfer, store, or load paint on a bridge;
- Avoid over-spraying or over-applying paint. Drip pans or drop cloths may be used in areas where painting will occur (if limited in area). Tarps may need to be suspended below the bridge to catch any overspray or dripping paint if working on the sides, or the underside, of the bridge;
- Have absorbent material and other BMPs ready for an accidental paint spill. In the event of a spill, promptly clean up and properly dispose of the materials used in the clean-up;
- Pour excess paint from trays or buckets back into paint can containers and wipe outsides of containers with cloth or paper towels. Dispose of the towels according to the recommendations on the paint being used; and
- NEVER dispose of paint or waste paint products into the storm drain system, into a water body, or onto the ground.

### **12.3 Employee Training**

- Train employees who perform bridge cleaning or painting on this written procedure. Information regarding how to avoid and report spills will be presented during the training; and
- Periodically conduct refresher training on the SOP for employees who perform bridge cleaning or painting.

### **12.4 Records**

The following records could be used to document activities performed:

- Records of employee training with sign-in sheet.

### **12.5 References**

City of Pleasant Grove SOP: Storm Water Pollutant Management for Parking Lot Maintenance, no date.

PACE, SOP for Street and Road Maintenance and Repair, Revised December 31, 2009.

## 13.0 STREET SWEEPER CLEANING

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### 13.1 Description

The operation and maintenance of street sweepers, if not conducted properly, can contribute to stormwater pollution. In addition, all sweeper waste must be disposed properly. All sweeper waste must be taken directly to a permanent disposal site or to a secure temporary storage area at the municipal yard.

When services are contracted, this written procedure should be provided to the contractor so they have the proper operational procedures. In addition, the contract should specify that the contractor is responsible for abiding by all applicable municipal, state, and federal codes, laws, and regulations.

### 13.2 Procedure

#### SWEEPER DEBRIS DISPOSAL

- Do not empty sweeper hoppers, even temporarily, onto areas near storm drains or surface water bodies or where wind or rain could wash the debris into the storm sewer system or scatter the debris;
- Dispose of sweeper debris at a designated dump site or at the designated area at the municipal facility. The temporary storage area for debris is protected from wind, rain, and surface runoff (when applicable);
- If unusual sweeping materials are identified, bring the issue to the attention of a supervisor for evaluation and proper disposal; and
- If dirt or traffic accident debris is swept up, it must be disposed properly.

#### SWEEPER WASH OUT

Sweepers must be washed every day at the end of the day (or other frequency as determined by the County). Follow the Equipment and Vehicle Maintenance SOP for vehicle washing procedures.

### 13.3 Employee Training

- Train employees who perform street sweeping on this written procedure. Information on how to avoid and report spills will be presented during the training; and
- Periodically conduct refresher training on the SOP for employees who perform street sweeping.

## 13.4 Records

The following records could be used to document activities performed:

- Records of employee training with sign-in sheet.

## 13.5 References

Center for Watershed Protection, Municipal Pollution Prevention/Good Housekeeping Practices: Version 1.0, September 2008.

City of Centennial SOP: Street Sweeping, August 2007.

City of Golden Street Sweeping Plan, no date.

City of Greeley, Department of Public Works: Street Sweeping Program, June 2008.

City of Lafayette Standard Operating Procedure: Street Sweeping, March 2009.

Mesa County, Municipal Operation and Maintenance Program, July 4, 2005.

USEPA Menu of BMP: Parking Lot and Street Cleaning,  
[cfpub.epa.gov/npdes/stormwater/menuofbmps/](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/), accessed May 27, 2009.

## 14.0 STREET / PARKING LOT SWEEPING

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### 14.1 Description

The sweeping of streets and parking lots gives the County an overall clean appearance, and aids in helping reduce traffic accidents and air pollution caused by fine dust particles. Street sweeping can prevent pollutants such as sediment particles, organics, oil, grease, trash, road salt, and trace metals from entering and plugging the storm sewer system.

When services are contracted, this written procedure should be provided to the contractor so they have the proper operational procedures. In addition, the contract should specify that the contractor is responsible for abiding by all applicable municipal, state, and federal codes, laws, and regulations.

### 14.2 Procedure

#### GENERAL

- Operate all sweepers according to manufacturer's recommended settings and standards;
- Do not conduct street sweeping during or immediately after rainstorms;
- Conduct regular maintenance of sweepers in accordance with the master schedule or as needed (see Equipment and Vehicle Maintenance SOP);
- Prior to operating the sweeper, perform a routine inspection, including checking for leaks. Follow procedures outlined in the Spill Prevention and Response SOP if a leak is observed;
- Do not wash down any streets or curbs for routine cleaning. If medians or signs are washed seasonally, follow the Power Washing SOP;
- Immediately contain and properly clean up all spills (see the Spill Prevention and Response procedure); and
- Handle sweeper debris as detailed in the Street Sweeper Cleaning SOP.

#### FREQUENCY

- Streets are swept in accordance with the master schedule;
- Schedule can be broken out by type (i.e., once a year on County-owned parking lots, once a year on residential streets, once a year for alleys, twice a year on roadways, as needed on snow emergency routes), season, crew.
- Increase the frequency of street sweeping in areas prone to litter and dust/dirt accumulation, sensitive areas (i.e., adjacent to a sensitive water body), and areas that have a history of storm drain plugging;



- Schedule additional sweeping, where feasible:
  - ❑ Construction conducted by the County where there is temporary storage of construction materials like dirt, sand, and road base along the roadway;
  - ❑ Special events (e.g., street fairs, art shows, and parades) where additional debris is likely to have accumulated;
  - ❑ Grass cutting, including and mowing, trimming, and edging – make sure that all debris created from maintenance of lawns, medians and open spaces is either blown back into the existing landscape with a handheld or back pack blower or swept up by hand and disposed of properly (i.e., not in the street or parking lot);
  - ❑ Landscape planting;
  - ❑ After heavy rainstorms in which sediment is present on the streets; and
  - ❑ After snows melt where large coarse sediments and garbage have been left behind.

### 14.3 Employee Training

Train employees who perform street sweeping on this written procedure. Information on how to avoid and report spills will be presented during the training.

Periodically conduct refresher training on the SOP for employees who perform street sweeping.

### 14.4 Records

The following records could be used to document activities performed:

- Annually updated master schedule with priority areas for sweeping indicated;
- Annually updated master schedule with priority areas for sweeping municipal parking lots, sidewalks, and other municipally-owned large outdoor paved surfaces areas;
- Log of the number of curb-miles swept each year; and
- Records of employee training with sign-in sheet.

### 14.5 References

Center for Watershed Protection, Municipal Pollution Prevention/Good Housekeeping Practices: Version 1.0, September 2008.

City of Centennial SOP: Street Sweeping, August 2007.

City of Golden Street Sweeping Plan, no date.

City of Greeley, Department of Public Works: Street Sweeping Program, June 2008.

City of Lafayette Standard Operating Procedure: Street Sweeping, March 2009.

Mesa County, Municipal Operation and Maintenance Program, 4 July 2005.

USEPA Menu of BMP: Parking Lot and Street Cleaning,  
[cfpub.epa.gov/npdes/stormwater/menuofbmps/](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/), accessed 27 May 2009.

## 15.0 FUEL STORAGE AND DISPENSING

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### 15.1 Description

The improper storage and transfer of fuel can directly lead to the release or spill of fuel product, which in turn can potentially degrade the quality of local receiving waters. Both State and Federal programs for above-ground storage exceeding 1,320 gallons or underground storage exceeding 42,000 gallons at any given facility, respectively, regulate the storage of fuel products. Douglas County has SPCC Plans in place for all County facilities where fuel storage capacity meets or exceeds the above-mentioned criteria.

When services are contracted, this written procedure should be provided to the contractor so they have the proper operational procedures. In addition, the contract should specify that the contractor is responsible for abiding by all applicable municipal, state, and federal codes, laws, and regulations.

### 15.2 Procedure

All County facilities with above ground fuel storage of greater than 1,320 gallons or underground storage greater than 42,000 gallons have SPCC Plans in place. The Plans will be reviewed a minimum of once every five years and annual training will be provided to all employees working at a facility requiring a SPCC Plan (as per SPCC requirements contained in the Federal requirements of 40 CFR 112).

For facilities storing fuels in quantities less than that requiring a SPCC Plan, good housekeeping measures will be put in place, including the use of secondary containment for all containers with a storage capacity greater than 15 gallons and regular inspection of tanks, pipes, and peripheral equipment.

Spill response procedures (as outlined in the [Spill Prevention and Response SOP](#)) will be used at all facilities, regardless of the requirement for a SPCC Plan.

#### 15.2.1 Receipt of Product

During the receipt of product at the facility, County employees must do the following:

- Gauge the receiving tank to verify that tender can be accepted without a chance of overfill;
- Make sure that the unloading hose and nozzle are in good condition;
- Make sure there are no fire (ignition) sources near the facility;
- Ensure that the person delivering the fuel is on hand during the entire filling operation;
- Make sure the hose and nozzle are removed from the tank before the driver gets in the truck's cab;
- Re-gauge the tank to verify the amount of product received; and

- Record the receipted amount in the inventory record.

### **15.2.2 Fueling Vehicles and Equipment Fuel Tanks**

When fueling vehicles and equipment at the facility, County employees must do the following:

- Position the vehicle near the dispenser, ensuring that the tank filler neck can be reached without stretching the fueling hose;
- Turn the engine off;
- Ensure that no ignition sources are present;
- Check the condition of the hose and the nozzle;
- Insert the magnetic card in the card reader (if facility has card reader system). If authorized for dispensing fuel, continue;
- Insert the nozzle in the tank and turn the pump on;
- Turn the pump off when the nozzle shuts off;
- Return the nozzle to its boot; and
- Replace the filler cap in the tank filler neck.

### **15.3 Employee Training**

- All employees who use County fueling facilities should be made aware of this written procedure. Information on how to avoid and report spills will be presented during the annual stormwater training;
- Inform contractors (fuel delivery to County fueling facilities) of these written procedures and establish the expectation that the contractors will follow County procedures unless the contractor's own procedures are more stringent (to be reviewed and determined by County personnel); and
- Periodically conduct refresher training on the SOP for employees who use the County fueling facilities.

### **15.4 Records**

The following records could be used to document activities performed:

- Records of any major spills and the action taken; and
- Records of employee training with sign-in sheet.

### **15.5 References**

Douglas County SOP: Fuel Storage, December 2003.

## 16.0 PARKS AND OPEN SPACE MAINTENANCE

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### 16.1 Description

Parks and open space maintenance activities involve the operation of equipment such as mowers and tractors; disposal of waste from mowing, planting, weeding, raking, pruning and trash collection; application of pesticides, herbicides and fertilizers, cleaning and maintenance of park amenities such as play equipment, restrooms, and structures; and snow removal.

When services are contracted, this written procedure should be provided to the contractor so they have the proper operational procedures. In addition, the contract should specify that the contractor is responsible for abiding by all applicable municipal, state, and federal codes, laws, and regulations.

### 16.2 Procedures

#### GENERAL

- Repair damage to landscaped areas as soon as possible. Mulch or vegetate bare areas to minimize erosion;
- Remove (sweep or shovel) materials such as soil, mulch and grass clippings from parking lots, streets, curbs, gutters and sidewalks;
- Collect and dispose of trash;
- Do not attempt to clean up any unidentified or possibly hazardous materials found on or around landscaped areas during maintenance; notify the supervisor immediately upon discovery of hazardous materials; and
- Refer to the Fertilizer and Pesticide Storage and Application SOP for information on the application of landscape chemicals.

#### MAINTENANCE

- Management of wastewater from power washing signs, structures, or bleachers must adhere to the Power Washing and Sandblasting SOP; and
- When painting park equipment, use a drop cloth and clean up any spills immediately. Do not leave open containers on the ground where they may accidentally tip over.

#### MOWING

- Remove paper, debris, and trash from the landscaped and surrounding areas prior to mowing;
- Collect grass clippings and leaves that are on the walks and other hard surfaces. Do not blow or wash them into the street, gutter or drainage ways; and

- Properly recycle or dispose of organic wastes after mowing, weeding, and trimming.

#### IRRIGATION

- Repair broken sprinkler heads as soon as possible; and
- Only irrigate at a rate that can infiltrate into the soil to limit run-off.

#### LANDSCAPE EQUIPMENT

- Brush off mowers (reels and decks) and tractors over grassy areas or in contained washout areas;
- Leave clippings on grassy areas or dispose of in trash or by composting. Do not hose off mowers over paved areas that drain to the storm drain system;
- Maintain (including washing) all equipment by following the Equipment and Vehicle Maintenance SOP; and
- Do not allow grease from the grease fittings (zerks) on mowers to fall onto areas where they can be washed into the storm drain.

#### SNOW REMOVAL

- Conduct snow and ice removal operations using the Snow and Ice Control SOP; and
- Store all salt or sand that will be used on walks inside or under a roof or in a covered container.

#### OTHER ACTIVITIES

- Utilize pet waste stations with bags and trash receptacles; and
- All portable toilets should be located on flat, secure locations where they are less likely to be knocked or blown over. All portable toilets should be in a location that would retain any spillage opposed to washing into a storm sewer or waterway. Ensure routine maintenance and cleaning is conducted.

### **16.3 Employee Training**

- Train employees who are involved with parks and open space maintenance activities on the content of this written procedure; and
- Periodically conduct refresher training on the SOP for employees who are involved with parks and open space maintenance activities.

### **16.4 Records**

The following records could be used to document activities performed:

- Records of employee training with sign-in sheet.

## **16.5 References**

City of Glendale, Department of Public Works; Glendale Municipal Operation SOPs, Revised December 2016.

## 17.0 FERTILIZER, HERBICIDE, AND PESTICIDE STORAGE AND APPLICATION

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### 17.1 Description

It is important to properly store, handle, apply, and clean up all fertilizers, herbicides, pesticides, and other landscaping chemicals. These chemicals can cause water pollution. Excessive fertilizer application can also contribute to algae blooms and deplete oxygen from waterways.

When services are contracted, this written procedure should be provided to the contractor, so they have the proper operational procedures. In addition, the contract should specify that the contractor is responsible for abiding by all applicable municipal, state, and federal codes, laws, and regulations.

### 17.2 Procedure

#### GENERAL

The following general procedures will be used when applying fertilizer, herbicide, fungicide, or pesticide:

- Follow label directions when applying, storing, handling, mixing, recycling, and disposing of chemicals and empty containers;
- Use care when transferring, mixing, or disposing of chemicals. Never perform these activities near storm drains or drainage areas; and
- Have spill cleanup materials available in case of a spill and clean up chemicals promptly using dry methods, if possible. Refer to the Spill Prevention and Response SOP.

#### APPLICATION

- Staff performing chemical applications should wear all appropriate protective garments;
- All chemicals shall be used strictly in accordance with their labels and all applicable federal, state, and local laws, regulations, and ordinances;
- Always follow the manufacturer's recommendation on handling and applying the chemicals;
- Chemicals should not be applied right before or during rain storms or while the area is being irrigated;
- Chemicals should not be applied right before or during high-wind events;
- Apply only the recommended amounts of chemicals to avoid chemicals being picked up by irrigation or stormwater runoff;

- Be careful not to overspray chemicals onto an impervious surface, such as a sidewalk or roadway. These chemicals will wash into the storm drain inlet during the next rainstorm;
- Clean up all over-sprayed chemicals;
- Do not apply landscape chemicals to frozen ground; and
- Avoid application of chemicals at the water's edge. Maintain a native buffer between treated turf and waterways.

#### CHEMICAL STORAGE

- Materials shall be stored in accordance with all current federal, state and local laws, regulations and ordinances;
- Chemicals should be stored inside when not in use; and
- Recycle or dispose of all spent or excess chemicals properly and promptly.

#### APPLICATION EQUIPMENT

- Sprayers shall be used to apply only materials that are suitable for spraying;
- Spreaders shall be used to apply only materials that are available in granular forms;
- Fertilizers and pesticides should be loaded into application equipment over impervious surfaces, so that any spills can be easily cleaned;
- Properly calibrate application equipment to ensure the proper amount of chemical is applied;
- Keep application equipment clean; do not allow chemical buildup; and
- Maintain (including washing) all equipment by following the Equipment and Vehicle Maintenance SOP.

### **17.3 Employee Training**

It is recognized that additional training and certifications exist that describe procedures for chemical application, handling, and storage. The appropriate employees and supervisors must have these certifications.

- All employees who apply fertilizer, herbicide, pesticide, or fungicide should be made aware of this written procedure. Information on how to avoid and report spills will be presented during the annual stormwater training;
- Inform contractors who may perform these services on behalf of the County (if applicable) of these written procedures and establish the expectation that the contractors will follow County procedures unless the contractor's own procedures are more stringent (to be reviewed and determined by County personnel); and
- Periodically conduct refresher training on the SOP for employees who perform subject activities.



## **17.4 Records**

The following records could be used to document activities performed:

- Records of any major spills and the action taken; and
- Records of employee training with sign-in sheet.

## **17.5 References**

Colorado Stormwater Council SOP: Fertilizer, Herbicide, and Pesticide Application and Storage.  
May 2020.

Douglas County SOP: Application of Fertilizers, Herbicides, and Fungicides, and Pesticides  
December 2003.

## 18.0 NEW CONSTRUCTION - SEDIMENT AND EROSION CONTROL

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### 18.1 Description

The NPDES Phase II Stormwater regulations (addressed in the State of Colorado by the CDPS stormwater discharge permit for MS4 owners and operators) require the owners and operators of MS4s, including Douglas County, to implement sediment and erosion control programs to regulate construction or redevelopment activities to ensure potential impacts to receiving water quality is minimized. One of the more significant provisions of the CDPS stormwater regulations is the expiration of the municipal (<100,000 population) exemption from the CDPS stormwater construction permit requirements. As of March 10, 2003, municipal activities such as facility and road construction and quarrying activities that disturb greater than one acre of land are required to obtain a CDPS stormwater construction activity permit, which requires the preparation of an erosion and sediment control plan for the project. In addition, if the municipality has their local erosion and sediment control program in place (which Douglas County does through the Grading, Erosion and Sediment Control (GESC) Criteria Manual and Program, the municipal construction or disturbance activity must obtain a permit from the local (County) program as well (e.g., a County GESC Permit).

### 18.2 Procedure

All County construction or redevelopment activities (does not include maintenance, which is defined as restoring original grade or capacity) that disturb greater than one acre of land must include both preparation of a GESC Plan and coverage under the CDPS stormwater construction permit program. The GESC program requires all projects (including County projects), regardless of the amount of disturbance, to obtain a permit through the GESC program or a waiver after a demonstration of no or minimal impact. The Douglas County Engineering Division administers the GESC program.

BMPs for temporary erosion and sediment control and for maintaining permanent water quality must be designed and incorporated into all County projects to minimize potential impacts during, and following the completion of, construction activities in accordance with the GESC Manual and the Douglas County Storm Drainage Design and Technical Criteria Manual, as amended. In addition, the specific requirements for development or redevelopment activities within both the Cherry Creek Reservoir Basin (as outlined in the Cherry Creek Reservoir Control Regulation No. 72) and the Chatfield Reservoir Basin (as outlined in the Chatfield Reservoir Control Regulation No. 73) must be incorporated into project designs.

### **18.3 Employee Training**

- All employees who are involved with County construction activities should be made aware of this written procedure;
- Inform contractors who may perform these services on behalf of the County (if applicable) of these written procedures and establish the expectation that the contractors will follow County procedures; and
- Periodically conduct refresher training on the SOP for employees.

### **18.4 Records**

The following records could be used to document activities performed:

- Records of any major sediment releases from County projects and the action taken to remedy the situation;
- Records of failed inspections and actions taken to remedy the situation; and
- Records of employee training with sign-in sheet.

### **18.5 References**

Douglas County (2004); Grading, Erosion, and Sediment Control (GESC) Manual; Department of Public Works Engineering Division; March 2004, as amended.

## **19.0 FACILITY GOOD HOUSEKEEPING**

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### **19.1 Description**

The improper disposal of solid waste (e.g., common trash) at County facilities can potentially lead to the degradation of local receiving water quality. In addition, sediment and other debris that accumulates on, or is tracked onto the property by vehicles, can also have negative effects on water quality if the sediment or debris is washed into storm drains or other collector drains during rainfall events. Fuel (gasoline or diesel), oil, and/or other automotive fluids (brake fluid, transmission fluid, or antifreeze/coolant) leaking from stored vehicles or maintenance equipment also poses a significant threat to local receiving water quality. Leaked materials accumulate on parking or storage surfaces and are washed into storm drains during rainfall events. The potential impacts to water quality due to these factors can be eliminated or significantly reduced by keeping the grounds of the County facilities clean through a regular cleaning and inspection program.

When services are contracted, this written procedure should be provided to the contractor so they have the proper operational procedures. In addition, the contract should specify that the contractor is responsible for abiding by all applicable municipal, state, and federal codes, laws, and regulations.

### **19.2 Procedure**

To minimize the potential for the accumulation of common trash and debris at County facilities, including parking lots, each facility will be inspected a minimum of once per month to identify the need to clean accumulated trash or debris. All common household trash (from office operations, trash from employees such as food waste, etc.) should be properly disposed in a dumpster or trash can for household waste disposal. Under no circumstances should non-household waste (including liquids) be placed in these receptacles.

The storage of vehicles and equipment that have the potential for leaking fuels, oils, and other automotive liquids (e.g., brake fluid, transmission fluid, or antifreeze/coolant) at a facility requires a higher level of care to be taken to ensure there are no releases from the site. Drip pans or other appropriate containment products should be used to ensure the potential for releases of product to the environment is minimized to the maximum extent practicable. All equipment stored at a site should be visually inspected on a weekly basis to identify any leaks occurring from the vehicles or equipment. Any identified leaks should be reported to the Facility Manager, repaired, and cleaned up immediately following the protocol presented in Section 7.0 of these SOPs. The monthly facility inspection will document any identified deficiencies in the overall facility vehicle and equipment storage practices.

When maintenance operations produce wash water, such as from power washing buildings or other structures, the wash water must be collected and disposed of in the sanitary sewer system

or directed to landscaping so it does not enter the storm sewer system. The Power Washing SOP (Section 4.0) should be referenced prior to conducting any power washing activity.

The removal of any accumulated sediment or debris from storm sewer inlets, detention ponds, or vehicle washing areas should be temporarily stored in an appropriate container or stockpile with secondary containment until the material can be removed from the site. Sediment removed from vehicle washing areas (sediment traps, etc.) may need to be characterized prior to disposal to ensure there is no contamination (petroleum or metals) that requires specialized handling and disposal. Any waste characterization should be documented and filed with waste disposal manifests or reports.

The employee conducting the inspection will prepare the monthly facility inspection report. The following points should specifically be noted in the facility inspection report:

- Identification and location of leaking vehicles and equipment;
- Identification of the use of appropriate containment devices such as drip pans under stored vehicles and equipment and their adequacy for containing leaks;
- Presence of trash along the fence lines or around the facility's disposal receptacles (dumpsters, etc.);
- Accumulation of sediment in or around the entrances to storm drain inlets at or in the vicinity of the facility; and
- Accumulation of sediment or debris in or around the facility's stormwater controls (i.e., at the outlet structure of a detention pond or in a drainage channel or swale).
- A log of facility inspections should be kept at the site noting at a minimum:
  - The date of the inspection;
  - The name of the person performing the inspection; and
  - Actions completed and any recommended actions (i.e., service requests or similar).

### **19.3 Employee Training**

- Train employees who perform good housekeeping inspections on this written procedure; and
- Periodically conduct refresher training on the SOP for employees at each County facility.

### **19.4 Records**

The following records could be used to document activities performed:

- Facility inspection log; and
- Records of employee training with sign-in sheet.

### **19.5 References**

Douglas County SOP: Facility Good Housekeeping, December 2003.

## 20.0 PARKING LOT OPERATION AND MAINTENANCE

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### 20.1 Description

The operation and maintenance of parking lots, if not conducted properly, can contribute to stormwater pollution. This SOP applies to municipal parking lots, sidewalks and other municipally owned large outdoor-paved surfaces.

### 20.2 Procedures

- Schedule a cleaning anytime storm drains have debris blocking the water flow to storm sewers or excessive debris is being carried into the storm sewers;
- Schedule more frequent cleanings in areas that have high pollutant loadings;
- Immediately treat spills of any pollutants, large or small, such as oil, diesel, and transmission fluids using the procedures outlined in the Spill Prevention and Response SOP; and
- Review parking lot cleaning and maintenance schedule (i.e., sweeping, crack filling and overlaying) annually to ensure priority areas are properly maintained, and new areas of development are incorporated in master schedule. All maintenance activities must comply with the Street, Curb, and Gutter Maintenance, Replacement, and Construction SOP.

### 20.3 Employee Training

- Provide training to employees who perform parking lot maintenance.

### 20.4 Records

The following records could be used to document activities performed:

- Records of employee training with sign-in sheet.

### 20.5 References

City of Glendale, Department of Public Works; Glendale Municipal Operation SOPs, Revised December 2016.

## 21.0 USED OILS, GREASE, AND CLEANERS DISPOSAL

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### 21.1 Description

The improper disposal of used oil, solvents, and cleaners can lead to the degradation of local receiving water quality. Proper disposal is described in the following two ways: on-site material disposal and off-site material disposal. On-site disposal describes the procedure for temporarily storing used oil or other liquid products at a facility until they are transported off-site for disposal.

When services are contracted, this written procedure should be provided to the contractor so they have the proper operational procedures. In addition, the contract should specify that the contractor is responsible for abiding by all applicable municipal, state, and federal codes, laws, and regulations.

### 21.2 Procedure

#### ON-SITE MATERIAL DISPOSAL

The following applies to all waste or used products temporarily stored at County facilities:

- Used oils, solvents, cleaners, and any other liquid products should only be stored in material-appropriate containers;
- All containers containing used products should be clearly and correctly labeled, identifying the material stored within the container;
- Waste or used products having differing chemical compositions should not be mixed in the same storage container;
- The chemical compatibility of waste or used products should be considered prior to storing containers. Compatibility and storage data contained in each waste or used product's MSDS should be consulted to ensure only compatible materials are stored in close proximity to each other;
- All containers with a storage capacity greater than 15 gallons should have secondary containment. Secondary containment should provide 110% of the individual container storage volume or, if a single secondary containment is used for multiple containers, the secondary containment must provide the greater of 110% of the largest individual container or 10% of the total stored container volume, whichever is greater; and
- Any minor spills of waste or used products that occur during transfer to the storage container should be cleaned up immediately.

Under no circumstances should waste or used products be poured into floor drains, storm sewer inlets, or directly poured onto the ground. In addition, in the case of minor spills, free product

(used oil, antifreeze, etc.) should be cleaned up using absorbent material, not washed with water. For additional guidance, see the Spill Prevention and Response SOP.

### OFF-SITE MATERIAL DISPOSAL

To the maximum extent practicable, Douglas County attempts to recycle or find secondary use for its waste or used products. Outside contractors are used to collect waste or used products from County facilities and either recycles, re-uses, or properly disposes of the waste or used products. **Under no circumstance should Douglas County employees transport or dispose of used oil products or other liquids off-site, unless properly authorized to do so.** In addition, records or manifests for off-site waste or used product disposal, which include the date of the pick-up, the name of the disposal company and disposal location, must be kept at the site.

## **21.3 Employee Training**

- Train employees whose activities include the disposal of used oil or other greases or cleaners on this written procedure; and
- Periodically conduct refresher training on the SOP for employees at each County facility.

## **21.4 Records**

The following records could be used to document activities performed:

- Records of employee training with sign-in sheet.

## **21.5 References**

Douglas County SOP: Disposal of Used Oils, Solvents, and Cleaners; December 2003.



## 22.0 HVAC MAINTENANCE

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### 22.1 Description

The cleaning of HVAC coils includes rinsing the coils to remove accumulated sediment (dust) and debris. The rinse water must be contained and not discharged to the storm sewer. Douglas County generally has three types of HVAC systems that require maintenance:

- Roof-mounted equipment;
- Ground-mounted equipment; and
- Cooling towers.

When services are contracted, this written procedure should be provided to the contractor so they have the proper operational procedures. In addition, the contract should specify that the contractor is responsible for abiding by all applicable municipal, state, and federal codes, laws, and regulations.

### 22.2 Procedure

#### 22.2.1 Roof-mounted Equipment

- For flat roofs:
  - ❑ Plug all roof drains and overflows to contain all of the rinse water; and
  - ❑ Monitor roof for complete evaporation of rinse water before removing plugs.
- For sloped roofs:
  - ❑ Use absorbent sock barriers around all equipment;
  - ❑ Plug all downspouts; and
  - ❑ Monitor for complete evaporation before removing sock barriers and plugs.

#### 22.2.2 Ground-mounted Equipment

- Use absorbent sock barriers around all equipment; and
- Monitor for complete evaporation before removing sock barriers.

#### 22.2.3 Cooling Towers

- All solid scale and debris is to be put into properly labeled containers and disposed accordingly; and
- All rinse water is to be contained for complete evaporation.

## **22.3 Employee Training**

- Train employees who perform HVAC maintenance activities on this written procedure;
- Train contractors who may perform HVAC maintenance activities on behalf of the County (if applicable) on this written procedure; and
- Periodically conduct refresher training on the SOP for employees.

## **22.4 Records**

The following records could be used to document activities performed:

- Records of employee training with sign-in sheet.

## **22.5 References**

Personal communication with County Personnel. April 2009.

## **23.0 STORMWATER TRAINING FOR EMPLOYEES**

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### **23.1 Description**

As part of the NPDES Phase II and CDPS stormwater permit requirements, all employees of an MS4 owner or operator whose activities can potentially impact local receiving water quality are required to receive training regarding stormwater quality at least once per year. The training must address how the employees' activities can potentially impact water quality.

### **23.2 Procedure**

All County employees whose activities can potentially impact water quality will be given an introductory training session upon being hired and thereafter will receive annual stormwater refresher training. The training will seek to educate the employees about stormwater issues, inform them of recent developments in the stormwater field, present and review SOPs developed for maintaining or potentially improving water quality, and provide a forum to present and discuss changes in operational procedures with the goal of improving efficiency and reducing the potential for discharging pollutants to the environment. Dates, times, attendees, and subject matter shall be recorded and included in the County's Annual Stormwater Phase II Report to the CDPHE-WQCD.

### **23.3 Employee Training**

Conduct annual refresher training for all employees whose activities (covered by these SOPs) can impact local water quality.

### **23.4 Records**

The following records could be used to document activities performed:

- Records of employee training with sign-in sheet.

### **23.5 References**

None.

## **24.0 REVISIONS TO STANDARD OPERATING PROCEDURES**

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### **24.1 Description**

These SOPs will be reviewed, at a minimum, on an annual basis to determine their effectiveness in preventing the degradation of local receiving water quality. Changes may be made due to improvements in pollution control technology or changes in County policy. The Engineering Services Director or a designated representative will approve any changes in stormwater management policy.

### **24.2 Procedure**

Employees from the Douglas County Engineering Division will review the SOPs on an annual basis and solicit input from the various operating divisions (Parks and Open Space, Road and Bridge Maintenance, Operations, etc.) to determine the effectiveness of the SOPs as written. The decision to modify the SOPs will be made by the Douglas County representative with responsibility over the County's Stormwater (CDPS permit program compliance) program, as any changes will have to be reported to the CDPHE.

### **24.3 Employee Training**

None required.

### **24.4 Records**

Changes to the County's SOPs should be documented within this master document (SOP Manual). Information that should be documented includes:

- Effective date of change; and
- Brief description of change (e.g. "modification to SOP No. 14" or "addition of SOP No. 21") in a table at the beginning of the document.

### **24.5 References**

None.

## 25.0 REFERENCES

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Tetra Tech (2009) *Standard Operating Procedures for Douglas County Municipal Operations*. Prepared for Douglas County Department of Public Works, Engineering Division. Report Dated March 2009, Amended March 2012.

Vector Colorado, LLC (2003) *Standard Operating Procedures for Douglas County Municipal Operations*. Prepared for Douglas County Department of Public Works, Engineering Division. Report Dated December 31, 2003.

Colorado Stormwater Council (2009) *Stormwater Standard Operating Procedures, Templates for SOP Development*. August 2009. [www.coloradostormwatercouncil.org](http://www.coloradostormwatercouncil.org) Templates downloaded August 3, 2009.