

Standard Operating  
Procedures (SOPs)

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**APPENDIX H**

## Procedures for Dry Weather Screening of Outfalls

**Definition:** Dry weather screening is described as monitoring done in the absence of storm events to discharges representing, as much as possible, the entire storm drainage system for the purpose of obtaining information about illicit connections and improper dumping.

### Procedures:

1. Dry weather screening of outfalls should be performed before or after the water season when flows in outfall flows should be at their minimums.
2. The minimum requirement for screening outfalls is to inspect at least 20% of all outfalls per year. Higher priority sites shall be inspected more frequently.
3. The inspector shall use a camera, measuring tape, and clear container. The camera will be used to take pictures and document the condition of the outfall and water. The measuring tape will be used to measure the size of the pipe or channel being inspected. The clear container will be used to take a sample of the water, if any, and visually monitor the water condition.
4. A record of the inspection must be kept. Use the EPA form *Outfall Reconnaissance Inventory/Sample Collection Field Sheet*. Fill out all applicable information.
5. If any water contamination or irregularities are observed use the *Procedures for Tracing and Removing Illicit Discharges*.
6. Keep a record of all inspections performed.

## Procedures for Tracing and Removing Illicit Discharges

**Definition:** Illicit discharge means any discharge to a municipal separate storm sewer that is not composed entirely of storm water.

The following non-storm water discharges do not need to be addressed and are not considered illicit discharges:

- De-chlorinated Water line flushing
- Landscape irrigation
- Diverted stream flows
- Rising ground waters
- Uncontaminated ground water infiltration
- Uncontaminated pumped ground water
- Discharges from potable water sources
- Foundation drains
- Air conditioning condensate
- Irrigation water
- Springs
- Water from crawl space pumps
- Footing drains
- Lawn watering runoff
- Individual residential car washing
- Flows from riparian habitats and wetlands
- De-chlorinated swimming pool discharges
- Residual street wash water
- De-chlorinated water reservoir discharges
- Discharges or flows from firefighting activity

### Procedures:

1. The storm drain system map shall be kept up to date to include all new storm drain pipe, manholes, and any other conveyance structures located within the city.
2. Priority sites shall be identified and inspected at a rate of at least 20% of the sites annually. Examples of such sites are:
  - Areas with older infrastructure or history of sewer overflows or cross connections
  - Industrial, commercial, or mixed use areas
  - Areas with a history of illicit discharges
  - Areas with a history of illegal dumping
  - Areas with onsite sewage disposal systems
  - Areas upstream of sensitive waterbodies
3. The city shall publically list and promote a 24 hour hotline or local telephone number for the public to report spills and other illicit discharges. This number is (801) 927-7039. This hotline will be publicized on the city website .
4. The city will train office personnel who might receive initial reports of illicit discharges to use the *EPA Illicit Discharge Hotline Incident Tracking Sheet*.
5. The city will train field personnel who might respond to reports of illicit discharges how to trace and eliminate spills. When necessary open manholes and trace the spill upstream and to its

source. If available the use of mobile cameras, dye testers, etc. to trace the spill upstream and to its source.

6. In case of a spill or illicit discharge the following city personnel will be notified.
  1. Ted Parry, Public Works/Storm Water Management, (801) 927-7039
  2. Darren Frandsen, Public Works Superintendent, (801) 546-0861
  3. Dan Green, Public Works/Street & Utility Maintenance, (801) 546-0861
7. If a large spill or illicit discharge takes place contact the Davis County Health Department at (801) 807-8872. Notify nearby property owners of the spill or illicit discharge if necessary. Other environmental response companies that are available 24 hours a day are listed below as a resource.
8. When the spill or illicit discharge has been eliminated the *Illicit Discharge Hotline Incident Tracking Sheet* will be completed kept on record, any other necessary paper work will be completed and kept on record. Determine what actions are necessary to prevent similar spills or illicit discharges in the future. If the incident was intentional legal enforcement actions may be considered.

**Environmental Response Companies:**

<b>Name</b>	<b>Location</b>	<b>Telephone</b>
A Plus Environmental LLC	Ogden, Layton	(801) 392-6545 or (801) 391-2050
Enviro Care, Inc	North Salt Lake	(801) 299-1900 or (801) 820-9058
HMHTTC Response Inc.	Ogden	(801) 627-2240 or 800-927-9303
Lincoln Environmental Services	Ogden	800-257-5370
S & M Diesel Environmental Services	Brigham City	800-735-2004 or (435) 279-8124
USA Environmental	Layton, Ogden	(801) 390-4934

# STANDARD OPERATING PROCEDURES

Weber County Storm Water Coalition

Created: February 2010  
Davis County Storm Water Coalition  
revised for Weber County Coalition April 2010

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## **BUILDINGS – Dumpsters/Garbage Storage**

1. Preparation.
  - a. Train employees on proper trash disposal.
  - b. Locate dumpsters and trash cans in convenient, easily observable areas.
  - c. Provide properly-labeled recycling bins to reduce the amount of garbage disposed.
  - d. Install berms, curbing, or vegetation strips around storage areas to control water entering/leaving storage areas.
  - e. Whenever possible store garbage containers beneath a covered structure or inside to prevent contact with storm water.
2. Process.
  - a. Inspect garbage bins for leaks regularly, and have repairs made immediately by responsible party.
  - b. Request/use dumpsters, and trash cans with lids and without drain holes.
  - c. Locate dumpsters on a flat, hard surface that does not slope or drain directly into the storm drain system.
3. Clean-up.
  - a. Keep areas around dumpsters clean of all garbage.
  - b. Have garbage bins emptied regularly to keep from overflowing.
  - c. Wash out bins or dumpsters as needed to keep odors from becoming a problem.
4. Documentation
  - a. Document training of employees



## **BUILDINGS – Parking Lot Maintenance**

1. Preparation.
  - a. Conduct regular employee training to reinforce proper housekeeping.
  - b. Restrict parking in areas to be swept prior to and during sweeping using regulations as necessary.
  - c. Perform regular maintenance and services in accordance with the recommended vehicle maintenance schedule on sweepers to increase and maintain efficiency.
2. Process.
  - a. Sweep parking areas, as needed, or as directed by the city's responsible official.
  - b. Hand sweep sections of gutter if soil and debris accumulate.
  - c. Pick-up litter as required to keep parking areas clean and orderly.
3. Clean-up.
  - a. Dispose of sweepings properly (appropriate solid waste facility).
  - b. Street sweepers to be cleaned out in a manner as instructed by the manufacturer and in a location that swept materials cannot be introduced into a stormdrain.
  - c. Swept materials will not be stored in locations where storm water could transport fines into the stormdrain system.
4. Documentation.
  - a. Keep accurate logs to track swept parking areas and approximate quantities.
  - b. Document training of employees.

## **IDDE - Call-in Inspections**

1. Preparation
  - a. Have a system in place to receive phone calls and collect information regarding suspected illicit discharges.
2. Process
  - a. Use the Incident Tracking Sheet to collect the appropriate information from the caller. Then, transfer the Incident Tracking Sheet to the proper authority (ie. department head, stormwater specialist, construction inspector, code enforcement officer, or other assigned personnel).
  - b. Promptly investigate reported incidents.
  - c. If an illicit discharge of unknown source is confirmed, follow the procedure of SOP IDDE - Tracing Illicit Discharges.
  - d. If an illicit discharge known source is confirmed, follow the procedure of SOP IDDE - Removing Illicit Discharges.
3. Clean up
  - a. Clean catch basin, clean storm drain, or initiate spill response, as applicable. Follow relevant SOPs.
4. Documentation
  - a. File all completed forms (ie. incident tracking, catch basins cleaning, storm drain cleaning).
  - b. Document any further action taken.
  - c. Review incidents reported by citizens on an annual basis to look for patterns of illicit discharges and to evaluate the call-in inspection program.

## **IDDE - Opportunistic Illicit Discharge Observation**

1. Preparation
  - a. Be alert for potential illicit discharges to the municipal storm water system while going about normal work activities.
2. Process
  - a. Call the appropriate authority (ie. department head, stormwater specialist, construction inspector, code enforcement officer or a supervisor) if you see evidence of an illicit discharge.
  - b. Assess the general area of the illicit discharge to see if you can identify its source.
  - c. Whenever possible, take photographs of the suspected illicit discharge.
  - d. Responding stormwater department personnel or code enforcement officer will complete the following:
    1. Use the IDDE Incident Tracking Sheet to document observations.
    2. Obtain sample for visual observation and complete an Outfall Inspection Form, if applicable.
    3. Follow the procedure of SOP IDDE - Tracing Illicit Discharges.
3. Clean-up
  - a. Clean catch basin, clean storm drain, or initiate spill response, as needed. Follow relevant SOPs.
4. Documentation
  - a. File all completed forms (ie. Incident Tracking Form, Outfall Inspection Form, Catch Basin Cleaning Form, and Storm Drain Cleaning Log).
  - b. Document any further action taken.

## IDDE - Outfall Inspections

1. Preparation:
  - a. Know the past and present weather conditions. Conduct inspections during dry weather periods.
  - b. Gather all necessary equipment including: tape measure, clear container, clipboard with necessary forms, flashlight, and camera (optional).
  - c. Obtain maps showing outfall locations and identifiers.
  - d. Obtain outfall description and observations from previous inspections, so the outfall can be accurately identified and observations compared.
  
2. Process
  - a. Perform an inspection of each outfall at least once per year. Whenever, possible use the same personnel for consistency in observations.
  - b. Identify each outfall with a consistent and unique identifier. For example “Howard Slough-#13”. Use maps and previous inspection reports to confirm the outfall identity and location.
  - c. If dry weather flow is present at the outfall, then document and evaluate the discharge by completing the following steps:
    1. Collect field samples for visual observations in a clean, clear container and in a manner that avoids stirring up sediment that might distort the observation.
    2. Characterize and record observations on basic sensory and physical indicators (e.g., outfall condition, flow, odor, color, oil sheen) on the Outfall Inspection Form.
    3. Compare observations to previous inspections.
    4. If the flow does not appear to be an obvious illicit discharge (e.g., flow is clear, odorless, etc.), attempt to identify the source of the flow (groundwater, intermittent stream, etc.)
  - d. If an illicit discharge (such as raw sewage, petroleum products, paint, etc.) is encountered or suspected, follow the procedure of SOP IDDE - Tracing Illicit Discharges.
  
3. Cleanup - as necessary
  
4. Documentation
  - a. File completed outfall inspection forms.
  - b. Update maps if new outfalls are observed and inspected.

## **IDDE - Removing Illicit Discharges**

1. Preparation
  - a. Obtain available property ownership information for the source of the illicit discharge.
2. Process
  - a. Determine who is financially responsible; and follow associated procedures as given below.

For Private Property Owner:  
Contact Owner,  
Issue Notice of Violation for violations of the municipal ordinance, and  
Determine schedule for removal.

For Municipal Facility:  
Notify appropriate municipal authority or department head,  
Schedule removal, and  
Remove illicit connection.
  - b. Suspend access to storm drain if threats of serious physical harm to humans or the environment are possible.
  - c. Direct responsible party to initiate repairs/corrections/cleanup. Coordinate with enforcement official for escalating penalties in accordance with the municipal ordinance.
  - d. Repair/correct cause of discharge if municipality is responsible. Schedule the work through the appropriate municipal authority or department head..
  - e. Seek technical assistance from the Weber-Morgan Health Department or Utah Department of Water Quality, if needed.
3. Clean up
  - a. Confirm illicit discharge is removed or eliminated by follow-up inspection.
4. Documentation
  - a. Maintain records of notice of violation and penalties.
  - b. Document repairs, corrections, and any other actions required.

## IDDE - Tracing Illicit Discharges

1. Preparation
  - a. Review / consider information collected when illicit discharge was initially identified and document using Incident Tracking Form or Outfall Inspection Form.
  - b. Obtain storm drain mapping for the area of the reported illicit discharge.
  - c. Gather all necessary equipment including: tape measure, clear container, clipboard with necessary forms, flashlight, and camera (optional).
2. Process
  - a. Survey the general area / surrounding properties to identify potential sources of the illicit discharge as a first step.
  - b. Trace illicit discharges using visual inspections of upstream points as a second step. Use available mapping to identify tributary pipes, catch basins, etc.
  - c. If the source of the illicit discharge cannot be determined by a survey of the area or observation of the storm drain system, then consider the following additional steps:
    1. Use weirs, sandbags, dams, or optical brightener monitoring traps to collect or pool intermittent discharges during dry weather.
    2. Smoke test or televise the storm drain system to trace high priority, difficult to detect illicit discharges.
    3. Dye test individual discharge points within suspected buildings.
    4. Consider collecting bacterial samples of flowing discharges to confirm/refute illicit discharge.
  - d. If the source is located, follow SOP IDDE - Removing Illicit Discharges.
  - e. If the source cannot be found, add the location to a future inspection program.
3. Clean up
  - a. Clean catch basin, clean storm drain, or initiate spill response, as applicable. Follow relevant SOPs.
4. Documentation
  - a. Document tracing results for future reference.

## **PARKS – Chemical Application Pesticides, Herbicides, Fertilizers**

1. Preparation
  - a. Make sure your state Chemical Handling Certification is complete and up-to-date before handling any chemicals.
  - b. Calibrate fertilizer and pesticide application equipment to avoid excessive application.
  - c. Use pesticides only if there is an actual pest problem and periodically test soils for determining proper fertilizer use
  - d. Time and apply the application of fertilizers, herbicides or pesticides to coincide with the manufacturer's recommendation for best results ("Read the Label").
  - e. Know the weather conditions. Do not use pesticides if rain is expected. Apply pesticides only when wind speeds are low (less than 5 mph).
  
2. Process
  - a. Always follow the manufacturer's recommendations for mixing, application and disposal. ("Read the Label").
  - b. Do not mix or prepare pesticides for application near storm drains, preferably mix inside a protected area with impervious secondary containment (preferably indoors) so that spills or leaks will not contact soils.
  - c. Employ techniques to minimize off-target application (e.g. spray drift, over broadcasting.) of pesticides and fertilizers.
  
3. Clean-up
  - a. Sweep pavements or sidewalks where fertilizers or other solid chemicals have fallen, back onto grassy areas before applying irrigation water.
  - b. Triple rinse containers, and use rinse water as product. Dispose of unused pesticide as hazardous waste.
  - c. Always follow all federal and state regulations governing use, storage and disposal of fertilizers, herbicides or pesticides and their containers. ("Read the Label")
  
4. Documentation
  - a. Keep copies of MSD sheets for all pesticides, fertilizers and other hazardous products used.
  - b. Record fertilizing and pesticide application activities, including date, individual who did the application, amount of product used and approximate area covered.

## **PARKS – Cleaning Equipment**

1. Preparation
  - a. Review process with all Parks employees
  
2. Process
  - a. Wipe off dirt, dust and fluids with disposable towel
  - b. Wash equipment in approved wash station
  
3. Clean-up
  - a. Dispose of towels in proper trash receptacle
  - b. Sweep floor and dispose of debris.



## **PARKS – Mowing and Trimming**

1. Preparation
  - a. Process overview with all employees
  - b. Check the oil and fuel levels of the mowers and other equipment; fill if needed.
  
2. Process
  - a. Install temporary catch basin protection installed on affected basins
  - b. Put on eye and hearing protection
  - c. Mow and trim the lawn
  - d. Sweep or blow clippings to grass areas
  - e. Remove inlet protection
  
3. Clean-up
  - a. Mowers are to be scraped and brushed at shop – dry spoils are dry swept and disposed of
  - b. Wash equipment in approved wash station

## **PARKS – Open Space Management**

1. Preparation
  - a. Provide a regular observation and maintenance of parks, golf courses, and other public open spaces.
  - b. Identify public open spaces that are used for stormwater detention and verify that detention areas are included on the storm drain system mapping, inspection schedules, and maintenance schedules.
  
2. Process
  - a. Ensure that any storm drain or drainage system components on the property are properly maintained.
  - b. Avoid placing bark mulch (or other floatable landscaping materials) in stormwater detention areas or other areas where stormwater runoff can carry the mulch into the storm drainage system.
  - c. Follow all SOPs related to irrigation, mowing, landscaping, and pet waste management.
  
3. Clean Up
  - a. Keep all outdoor work areas neat and tidy. Clean by sweeping instead of washing whenever possible. If areas must be washed, ensure that wash water will enter a landscaped area rather than the storm drain. Do not use soap for outdoor washing.
  - b. Pick up trash on a regular basis.
  
4. Documentation
  - a. Document any observed deficiencies for correction or repair.

## **PARKS – Pet Waste**

1. Preparation
  - a. Adopt and enforce ordinances that require pet owners to clean up pet wastes and use leashes in public areas. If public off-leash areas are designated, make sure they are clearly defined. Avoid designating public off-leash areas near streams and water bodies.
  - b. Whenever practical and cost effective, install dispensers for pet waste bags and provide disposal containers at locations such as trail heads or parks where pet waste has been a problem. Provide signs with instructions for proper cleanup and disposal.
2. Process
  - a. Check parks and trails for pet waste as needed.
  - b. Check public open space for pet waste prior to mowing and watering.
  - c. Provide ordinance enforcement as needed.
3. Clean up
  - a. Remove all pet waste, provide temporary storage in a covered waste container, and dispose of properly. Preferred method of disposal is at a solid waste disposal facility.
4. Documentation
  - a. Document problem areas for possible increased enforcement and/or public education signs.

## **PARKS – Planting Vegetation (Starters)**

1. Preparation
  - a. Call the Blue Stakes Center of Utah at least 2 working days before any digging will be done, to reveal the location of any underground utilities.
  - b. Dial 811 or 1-800-662-4111
  - c. Decide where any spoils will be taken.
  
2. Process
  - a. Dig holes; place spoils near the hole where they may easily be placed back around roots. Avoid placing spoils in the gutter.
  - b. Bring each plant near the edge of the hole dug for it.
  - c. Check the depth of the hole, and adjust the depth if necessary. The depth of the hole for a tree should be as deep as the root ball, so that the top of the root ball is level with the top of the hole.
  - d. Carefully remove pot or burlap.
  - e. Place the plant in the hole.
  - f. Backfill the hole with existing spoils, compost, and a litter fertilizer if desired. Do not use excessive amendments.
  - g. Water the plant.
  - h. Stake the plant, if necessary, to stabilize it.
  
3. Clean-up
  - a. Move any extra spoils into truck or trailer. Place the spoils on a tarp if there is a likelihood that some of the dirt would be lost through openings in the bed.
  - b. Sweep dirt from surrounding pavement(s) into the planter area
  - c. Transport spoils to their designated fill or disposal area.

## **PARKS – Planting Vegetation (Seeds)**

1. Preparation
  - a. Call the Blue Stakes Center of Utah at least 2 working days before any digging will be done, to reveal the location of any underground utilities.
  - b. Dial 811 or 1-800-662-4111
  - c. Decide on the application rate, method, water source, and ensure adequate materials are on hand.
  - d. Grade and prepare the soil to receive the seed. Place any extra soil in a convenient location to collect.
  
2. Process
  - a. Place the seed and any cover using the pre-determined application method (and rate).
  - b. Lightly moisten the seed.
  
3. Clean-up
  - a. Move any extra spoils into truck or trailer. Place the spoils on a tarp if there is a likelihood that some of the dirt would be lost through openings in the bed.
  - b. Sweep dirt, seed, and any cover material from surrounding pavement(s) into the planter area
  - c. Transport spoils to their designated fill or disposal area.

## **PARKS – Transporting Equipment**

1. Preparation
  - a. Determine equipment needed for transport and method (trailer, truck bed) needed to transport equipment.
  - b. Conduct pre- trip inspection of equipment
2. Process
  - a. Load and secure equipment on trailer or truck
  - b. Load and secure fuel containers for equipment usage
3. Clean-up
  - a. Off load equipment
  - b. Store equipment and trailer in proper locate on
  - c. Conduct post-trip inspection of equipment
  - d. Wash equipment, if needed, according to the SOP for Cleaning Equipment SOP
4. Documentation
  - a. Pre-trip and post trip inspection report

## STREETS/STORM DRAIN – Catch Basin Cleaning

1. Preparation:
  - a. Clean sediment and trash off grate.
  - b. Do visual inspection on outside of grate.
  - c. Make sure nothing needs to be replaced.
  - d. Do inside visual inspection to see what needs to be cleaned.
  
2. Process
  - a. Clean using a high powered vacuum truck to start sucking out standing water and sediment.
  - b. Use a high pressure washer to clean any remaining material out of catch basin, while capturing the slurry with the vacuum.
  - c. After catch basin is clean, send the rodder of the vacuum truck downstream to clean pipe and pull back sediment that might have gotten down stream of pipe.
  - d. Move truck downstream of pipe to next catch basin.
  
3. Clean-up
  - a. When vacuum truck is full of sediment take it to the designated location to dump all the sediment out of truck into a drying bed.
  - b. When it evaporates, clean it up with a backhoe, put it into a dump truck and take it to the landfill.
  
4. Documentation
  - a. Keep logs of number of catch basins cleaned.
  - b. Record the amount of waste collected.
  - c. Keep any notes or comments of any problems.

## STREETS/STORM DRAIN – Curb Painting

1. Preparation
  - a. Calculate the amount of paint required for the job
  - b. Use water based paints if possible.
  - c. Determine whether the wastes will be hazardous or not and the required proper disposal of said wastes
  - d. Determine locations of storm drain inlets and sewer inlets that may need to be protected
  - e. Prepare surfaces to be painted without generating wastewater by sandblasting and/or scraping.
  - f. Thoroughly sweep up all sand, blastings, and/or paint scrapings
  - g. If paint stripping is needed, use a citrus-based paint remover whenever possible, which is less toxic than chemical strippers
  - h. If wastewater will be generated, use curb, dyke, etc. around the activity to collect the filter and collect the debris.
2. Process
  - a. Paint curb.
  - b. Prevent over-spraying of paints and/or excessive sandblasting
  - c. Use drip pans and drop clothes in areas of mixing paints and painting
  - d. Store latex paint rollers and brushes in air tight bags to be reused later with the same color.
  - e. Have available absorbent material and other BMP's ready for an accidental paint spill.
3. Clean-up
  - a. Paint out brushes and rollers as much as possible. Squeeze excess paint from brushes and rollers back into the containers prior to cleaning them.
  - b. Pour excess paint from trays and buckets back into the paint can containers and wipe with cloth or paper towels. Dispose of the towels according to the recommendations on the paint being used.
  - c. Rinse water-based paint brushes in the sink after pre-cleaning. Never pour excess paint or wastewater from cleanup of paint in the storm drain.
  - d. Cleanup oil based paints with paint thinner. Never clean oil based brushes in a sink or over a storm drain. Filter solvents for reuse if possible and/or store in approved drum for recycling.
  - e. Dispose of waste collected by placing it in a garbage container. Left-over paint and solvents should be stored for later use (do not place these liquids in the garbage).



4. Documentation
  - a. Write-up/report of any discharges into storm drain system

## STREETS/STORM DRAIN – Detention Pond Cleaning

1. Preparation:
  - a. Schedule the Pond cleaning work for a time when dry weather is expected.
  - b. Remove any sediment and trash from grates, placing it in a truck for disposal.
  - c. Do a visual inspection to make sure any grates, structures, manholes, boxes, and pipes are in good working order. Remove manhole covers and grates as necessary for inspecting.
  
2. Process
  - a. Provide outlet protection where feasible to minimize the amount of debris that might leave basin during cleaning process.
  - b. Start cleaning basin by using backhoe to remove debris and sediment off the bottom.
  - c. Continue cleaning structures and pond bottom as necessary by sweeping and shoveling.
  - d. Put all material removed from the pond into a dump truck.
  - e. Some structures may require use of a vector truck. If so use the same procedures described for cleaning catch basins.
  
3. Clean-up
  - a. After cleaning basins, clean off the concrete pads using dry methods (sweeping and shoveling).
  - b. Make sure they are swept up and clean.
  - c. Take the material that was removed to the landfill for final disposal.
  
4. Documentation
  - a. Keep a logs of each detention basins/pond cleaned including date, individuals involved in cleaning, and a description of the type of debris removed.
  - b. Record the amount of waste collected.
  - c. Keep any notes or comments of any problems.

## STREETS/STORM DRAIN – Creek Management

1. Preparation
  - a. Monitor streams on a regular basis (Suggested interval?).
  - b. Check culverts and crossings after every storm.
  - c. Maintain access to stream channels wherever possible.
  - d. Identify areas requiring maintenance
  - e. Determine what manpower or equipment will be required.
  - f. Identify access and easements to area requiring maintenance.
  - g. Determine method of maintenance that will be least damaging to the channel.
  - h. Obtain Stream Alteration Permit.
  
2. Process
  - a. Remove unwanted material (debris, branches, soil) from the creek channel and place it in a truck to be hauled away
  
3. Clean-up
  - a. Stabilize all disturbed soils.
  - b. Remove all tracking from paved surfaces near maintenance site, if applicable.
  - c. Haul all debris or sediment removed from area to approved dumping site.
  
4. Documentation
  - a. Keep log of actions performed including date and individuals involved.
  - b. Record the amount of materials removed or imported.
  - c. Keep any notes or comments of any problems.
  - d. Use “before” and “after” photographs to document activities as applicable.

## STREETS/STORM DRAIN – Ditch Management

1. Preparation
  - a. Monitor ditches on a regular basis (Suggested interval?).
  - b. Maintain access to ditch channels wherever possible.
  - c. Contact affected property owners and utility owners.
  
2. Process
  - a. Identify areas requiring maintenance
  - b. Determine what manpower or equipment will be required.
  - c. Identify access and easements to area requiring maintenance.
  - d. Determine method of maintenance that will be least damaging to the channel and adjacent properties or utilities.
  
3. Clean-up
  - a. Stabilize all disturbed soils.
  - b. Remove all tracking from paved surfaces near maintenance site, if applicable.
  - c. Haul all debris or sediment removed from area to approved dumping site.
  
4. Documentation
  - a. Keep log of actions performed including date and individuals involved.
  - b. Record the amount of materials removed or imported.
  - c. Keep any notes or comments of any problems.
  - d. Use “before” and “after” photographs to document activities as applicable.

## STREETS/STORM DRAIN – Chip Seal

1. Preparation
  - a. Clean and dry areas where materials are to be applied.
  - b. Apply temporary covers to manholes and catch basins to prevent oil and materials from getting inside of them.
  
2. Process
  - a. Apply emulsion at recommended rate.
  - b. Spread chips closely behind emulsion distributor, slowly such that the chips do not roll when they hit the surface.
  - c. Roll chips. Rollers follow closely behind the chip spreader. Roll entire surface twice.
  - d. Maximum speed 5 mph.
  
3. Clean-up
  - a. All loose aggregate is removed from the roadway by sweeping it up (see SOP for Street Sweeping).
  - b. Excessive asphalt applications and spills are removed with shovels and scraping tools.
  - c. Remove the temporary covers from manholes and catch basins. If it appears that any chip seal materials have gotten into the inlet boxes, remove the material according to the SOP for inlet boxes.
  - d. Dispose of the waste material that has been swept and scraped up by taking it to the landfill.
  
4. Documentation
  - a. Record location and date on the maintenance database and map

## STREETS/STORM DRAIN – Slurry Seal

1. Preparation
  - a. Remove weeds from the roads. Sweep areas where materials are to be applied, and allow to dry, if necessary. Verify that existing pavement has been inspected for detrimental effects of poor drainage.
  - b. Cover/protect catch basins and manholes.
  
2. Process
  - a. Apply materials in a smooth and uniform manner. Slurry material should not run onto adjacent pavement surface, curb and gutter or waterways.
  
3. Clean-up
  - a. If loose aggregate is remaining in street or curb, sweep it up.
  - b. Ensure that excess emulsion materials are removed from the site and stored for later use in an area or container that is not exposed to the weather.
  - c. Remove covers/protection from catch basins and manholes, and valves.
  
4. Documentation
  - a. Record location and date on the maintenance database and map

## STREETS/STORM DRAIN – Overlays and Patching

1. Preparation
  - a. Measure and mark locations of manholes and valves on the curb
  - b. Manholes and catch basins are covered as needed to prevent oil and materials from getting inside the structures or system.
  - c. Cracks should be properly sealed. Alligator cracks and potholes should be removed and patched. Rutting should be milled.
  - d. Surface should be clean and dry.
  - e. Uniform tack coat applied and cured prior to placement of overlay.
  - f. If milling is required, install inlet protection as needed.
  
2. Process
  - a. Check hot asphalt mix for proper temperature, percentage asphalt, gradation, air voids and any other agency requirements.
  - b. Raise manhole lids and valves to elevation of new asphalt surface with riser rings.
  - c. Surface texture should be uniform, no tearing or scuffing.
  - d. Rolling should be done to achieve proper in-place air void specification.
  
3. Clean-up
  - a. Covering should be removed as soon as the threat of imported materials entering the system is reduced and prior to a storm event.
  - b. After pavement has cooled, sweep gutters to remove loose aggregate.
  
4. Documentation
  - a. Record location and date on the maintenance database and map

## **STREETS/STORM DRAIN – Crack Seal**

1. Preparation
  - a. Cover Manholes and catch basins to prevent oil and materials from getting inside the structures or system.
  - b. Remove weeds from the road
  - c. Air-blast the cracks to remove sediments from the crack to allow for proper adhesion.
  - d. Ensure that surface is clean and dry.
  
2. Process
  - a. Proper temperature of material should be maintained.
  - b. Sufficient material is applied to form the specified configuration.
  
3. Clean-up
  - a. Excessive sealant application or spills are removed.
  - b. Sweep all loose debris from the pavement and dispose of it in the local landfill.
  
4. Documentation
  - a. Record location and date on the maintenance database and map



## **STREETS/STORM DRAIN – Shouldering and Mowing**

1. Preparation
  - a. Set up temporary traffic control devices according to part VI of the MUTCD.
  
2. Process
  - a. Place import material as needed and perform grading to achieve proper drainage.
  - b. Mulch clippings to help reduce the amount of supplemental fertilizer required
  
3. Clean-up
  - a. Clean any loose material off asphalt or gutter.
  
4. Documentation
  - a. Record location and date on the maintenance database and map

## **STREETS/STORM DRAIN – Secondary Road Maintenance**

1. Preparation
  - a. Determine length amount and type of roadbase or gravel that will be needed.
  - b. Determine proper equipment to be used and or any safety hazards.
  - c. Design proper drainage: slopes, berms etc.
  
2. Process
  - a. Have truck drivers follow a designated route for hauling in the soil (See SOP for transporting Soil and Gravel).
  - b. If soil is too dry to achieve compaction, loosen surface material and moisture condition.
  - c. Smooth or grade soil with the desired crown or cross-slope.
  - d. Compact soil.
  
3. Clean-up
  - a. Replace filter fabric with washed rock (if necessary) on monthly maintenance.
  - b. Clean up equipment according to the SOP for Cleaning Equipment
  - c. Clean up any debris on traveled roads, and dispose of it in the landfill.
  
4. Documentation
  - a. Fill out daily activity report in log book or journal. Include Date, time, personnel, and location.

## STREETS/STORM DRAIN – Concrete Work

1. Preparation
  - a. Train employees and contractors in proper concrete waste management.
  - b. Store dry and wet materials under cover, away from drainage areas
  - c. Remove any damaged concrete that may need to be replaced.
  - d. Prepare and compact sub-base.
  - e. Set forms and place any reinforcing steel that may be required.
  - f. Determine how much new concrete will be needed.
  - g. Locate or construct approved concrete washout facility.
  
2. Process
  - a. Install inlet protection as needed.
  - a. Avoid mixing excess amounts of fresh concrete on-site.
  - b. Moisten subbase just prior to placing new concrete. This helps keep the soil from wicking moisture out of the concrete into the ground.
  - c. Place new concrete in forms.
  - d. Consolidate new concrete
  - e. Screed off surface
  - f. Let concrete obtain its initial set
  - g. Apply appropriate surface finish
  - h. Remove forms when concrete will not slump
  
3. Clean-up
  - a. Perform washout of concrete trucks and equipment in designated areas only
  - b. Do not washout concrete trucks or equipment into stormdrains, open ditches, streets or streams
  - c. Cement and concrete dust from grinding activities is swept up and removed from the site.
  - d. Remove dirt or debris from street and gutter.

## STREETS/STORM DRAIN – Garbage Storage

1. Preparation
  - a. Locate dumpsters and trash cans with lids in convenient, easily observable areas.
  - b. Provide properly-labeled recycling bins to reduce the amount of garbage disposed.
  - c. Provide training to employees to prevent improper disposal of general trash.
  
2. Process
  - a. Inspect garbage bins for leaks regularly, and have repairs made immediately by responsible party.
  - b. Locate dumpsters on a flat, impervious surface that does not slope or drain directly into the storm drain system.
  - c. Install berms, curbing or vegetation strips around storage areas to control water entering/leaving storage areas.
  - d. Keep lids closed when not actively filling dumpster.
  
3. Clean-up
  - a. Keep areas around dumpsters clean of all garbage.
  - b. Have garbage bins emptied as often as needed to keep from overfilling.
  - c. Wash out bins or dumpsters as needed to keep odors from becoming a problem. Wash out in properly designated areas only.

## **STREETS/STORM DRAIN – Snow Removal and De-icing**

1. Preparation
  - a. Store de-icing material under a covered storage area or in an area where water coming off the de-icing materials is collected and delivered to the sanitary sewer or reused as salt brine.
  - b. Slope loading area away from storm drain inlets
  - c. Design drainage from loading area to collect runoff before entering storm water system
  - d. Wash out vehicles (if necessary) in approved washout area before preparing them for snow removal.
  - e. Calibrate spreaders to minimize amount of de-icing material used and still be effective
  - f. Provide vehicles with spill cleanup kits in case of hydraulic line rupture or other spills
  - g. Train employees in spill cleanup procedures and proper handling and storage of de-icing materials
  
2. Process
  - a. Load material into trucks carefully to minimize spillage
  - b. Periodically dry sweep loading area to reduce the amount of de-icing materials exposed to runoff
  - c. Distribute the minimum amount of de-icing material to be effective on roads
  - d. Do not allow spreaders to idle while distributing de-icing materials.
  - e. Park trucks loaded with de-icing material inside when possible
  
3. Cleanup
  - a. Sweep up all spilled de-icing material around loading area
  - b. Clean out trucks after snow removal duty in approved washout area
  - c. Provide maintenance for vehicles in covered area
  - d. If sand is used in de-icing operations, sweep up residual sand from streets when weather permits

## STREETS/STORM DRAIN – Street Sweeping

4. Preparation
  - a. Prioritize cleaning routes to use at the highest frequency in areas with the highest pollutant loading.
  - b. Restrict street parking prior to and during sweeping using regulations as necessary
  - c. Increase sweeping frequency just before the rainy season, unless sweeping occurs continuously throughout the year.
  - d. Perform preventative maintenance and services on sweepers to increase and maintain their efficiency
  
5. Process
  - a. Streets are to be swept as needed or specified by the city. Street maps are used to ensure all streets are swept at a specified interval
  - b. Drive street sweeper safely and pickup debris
  - c. When full, take the sweeper to an approved street sweeper cleaning station.
  
6. Clean-up
  - a. Street sweepers are to be cleaned out in an approved street sweeper cleaning station
  - b. Street sweeping cleaning stations shall separate the solids from the liquids.
  - c. Once solids have dried out, haul them to the local landfill
  - d. Decant water is to be collected and routed to an approved wastewater collection system area only.
  - e. Haul all dumped material to the landfill.
  
7. Documentation
  - a. Keep accurate logs to track streets swept and streets still requiring sweeping.
  - b. Log the amount of debris collected and hauled off.

## STREETS/STORM DRAIN – Transporting Soil and Gravel

1. Preparation
  - a. Dry out wet materials before transporting.
  - b. Spray down dusty materials to keep from blowing.
  - c. Make sure you know and understand the SWPPP requirements for the site you will be working at.
  - d. Determine the location that the truck and other equipment will be cleaned afterwards
  
2. Process
  - a. Use a stabilized construction entrance to access or leave the site where materials are being transported to/from.
  - b. Cover truck bed with a secured tarp before transporting.
  - c. Follow the SWPPP requirements for the specific site to/from which the materials are being hauled.
  - d. Make sure not to overfill materials when loading trucks.
  
3. Clean up
  - a. Use sweeper to clean up any materials tracked out on the roads from site.
  - b. Wash out truck and other equipment when needed in properly designated areas.
  
4. Documentation
  - a. Keep records of any material that is tracked out of site and what was done to clean it up and how long it took to clean up and what the weather conditions were at the time.

## VEHICLES – Fueling

1. Preparation
  - a. Train employees on proper fueling methods and spill cleanup techniques.
  - b. Install a canopy or roof over aboveground storage tanks and fuel transfer areas.
  - c. Absorbent spill clean-up materials and spill kits shall be available in fueling areas and on mobile fueling vehicles and shall be disposed of properly after use.
2. Process
  - a. Shut off the engine.
  - b. Ensure that the fuel is the proper type of fuel for the vehicle.
  - c. Nozzles used in vehicle and equipment fueling shall be equipped with an automatic shut off to prevent overfill.
  - d. Fuel vehicle carefully to minimize drips to the ground.
  - e. Fuel tanks shall not be ‘topped off’.
  - f. Mobile fueling shall be minimized. Whenever practical, vehicles and equipment shall be transported to the designated fueling area in the Facilities area.
  - g. When fueling small equipment from portable containers, fuel in an area away from storm drains and water bodies.
3. Clean Up
  - a. Immediately clean up spills using dry absorbent (e.g., kitty litter, sawdust, etc.) sweep up absorbent material and properly dispose of contaminated clean up materials.
  - b. Large spills shall be contained as best as possible and the HazMat team should be notified ASAP.
4. Records
  - a. Comply with underground storage tank records and monitoring requirements.
  - b. Document training of employees.



## VEHICLES – Vehicle and Equipment Storage

1. Preparation
  - a. Inspect parking areas for stains/leaks on a regular basis.
  - b. Provide drip pans or adsorbents for leaking vehicles.
2. Process
  - a. Whenever possible, store vehicles inside where floor drains have been connected to sanitary sewer system.
  - b. When inside storage is not available, Vehicles and equipment will be parked in the approved designated areas.
  - c. Maintain vehicles to prevent leaks as much as possible.
  - d. Address any known leaks or drips as soon as possible. When a leak is detected a drip pan will be placed under the leaking vehicle to collect the drip.
  - e. The shop will provide a labeled location to empty and store drip pans.
  - f. If any leaks are discovered, a drip pan will be used to collect the fluids and vehicle will be scheduled for repairs.
  - g. Clean up all spills using dry methods.
  - h. Never store leaking vehicles over a storm drain.
3. Clean Up
  - a. Any leaks that are spilled on the asphalt will be cleaned up with dry absorbent; the dry absorbent will be swept up and disposed of in the garbage.
  - b. The paved surfaces around the building will be swept every two weeks, weather permitting.

## VEHICLES – Washing

1. Preparation
  - a. Provide wash areas for small vehicles inside the maintenance building that has a drain system which is attached to the sanitary sewer system.
  - b. Provide wash areas for large vehicles on an approved outside wash pad that has a drain system which is attached to the sanitary sewer system.
  - c. No vehicle washing will be done where the drain system is connected to the storm sewer system.
2. Process
  - a. Minimize water and soap use when washing vehicles inside the shop building.
  - b. Soap should not be used when washing vehicles outside the shop building. Water Only.
  - c. Use hoses with automatic shut off nozzles to minimize water usage.
  - d. When washing outside the building, it is the operators' responsibility to make sure all wash water is contained on the wash pad and does not have access to the storm drain.
  - e. Never wash vehicles over or a storm drain.
3. Clean Up
  - a. Sweep wash areas after every washing to collect what solids can be collected to prevent them from washing down the drain system.
  - b. Clean solids from the settling pits on an as needed basis.

## **WATER – Planned Waterline Excavation Repair/Replacement**

1. Preparation
  - a. Determine where discharge flow will go
  - b. Place inlet protection at nearest downstream storm drain inlet
  - c. Clean Gutters leading to inlet
  - d. Isolate waterline to be worked on
  - e. Neutralize any chlorine residual before discharging water
  
2. Process
  - a. Make efforts to keep water from pipeline from entering the excavation
  - b. Direct any discharge to pre-determined area
  - c. Backfill and compact excavation
  - d. Haul of excavated material or stock pile nearby
  
3. Clean up
  - a. Clear gutter/waterway where water flowed
  - b. Clean up all areas around excavation
  - c. Clean up travel path of trucked material
  
4. Documentation
  - a. Complete paperwork

## **WATER – Unplanned Waterline Excavation Repair/Replacement**

1. Preparation
  - a. Make sure service trucks have wattles, gravel bags, or other materials for inlet protection.
  
2. Process
  - a. Slow the discharge.
  - b. Inspect flow path of discharged water
  - c. Protect water inlet areas
  - d. Follow planned repair procedures.
  - e. Haul off spoils of excavation
  - f. Consider use of silt filter bags on pumps
  
3. Clean-up
  - a. Repair eroded areas as needed
  - b. Follow planned repair procedures
  - c. Clean up the travel path of trucked excavated material

## **WATER – Transporting Dry Excavated Materials & Spoils**

1. Preparation
  - a. Utilize truck with proper containment of materials
  - b. Determine disposal site of excavated materials
  
2. Process
  - a. Load
  - b. Check truck after loading for possible spillage
  - c. Transport in manner to eliminate spillage & tracking
  - d. Utilize one route for transporting
  
3. Clean-up
  - a. Clean loading area
  - b. Clean transporting route
  - c. Wash off truck and other equipment in a designated equipment cleaning area

## **WATER – Transporting Wet Excavated Materials & Spoils**

1. Preparation
  - a. Utilize truck with containment for material
  - b. Determine disposal site of excavated material
  
2. Process
  - a. Load and Transport in manner to minimize spillage & tracking of material
  - b. Check truck for spillage
  - c. Utilize one route of transport
  
3. Clean-up
  - a. Clean route of transport to provide cleaning of any spilled material
  - b. Wash out equipment truck and other equipment in designated wash area

## **WATER – Waterline Flushing for Routine Maintenance**

1. Preparation
  - a. Determine flow path of discharge to inlet of waterway.
  - b. Determine chlorine residual
  - c. Neutralize chlorine residual
  
2. Process
  - a. Clean flow path.
  - b. Protect inlet structures.
  - c. Use diffuser to dissipate pressure to reduce erosion possibilities.
  
3. Clean-up
  - a. Clean flow path
  - b. Remove inlet protection .
  
4. Documentation
  - a. Residual tests of discharge water.

## **WATER – Waterline Flushing after Construction/System Disinfection with Discharge to Storm Drain**

1. Preparation
  - a. Determine chlorine content of discharged water, and select de-chlorination equipment to be used.
  - b. Determine flow path of discharge.
  
2. Process
  - a. Protect inlets in flow path
  - b. Install de-chlorination equipment
  - c. Sweep and clean flow path
  - d. Use diffuser to reduce velocities
  
3. Clean-up
  - a. Pick up inlet protection
  - b. Clean flow paths
  - c. Remove equipment from flush point
  
4. Documentation
  - a. Residual test of discharged water



**WATER – Waterline Flushing after Construction/System Disinfection with Discharge with Haul Off (Used for Dust Control/Compaction)**

1. Preparation
  - a. Determine chlorine content of discharged water
  - b. Determine appropriate construction activity for treatment
  
2. Process
  - a. Flush to tanker for disposal on unpaved construction activity for dust control or compaction
  - b. Conform that application of water is in appropriate location
  
3. Clean-up
  - a. Remove equipment from flush point
  
4. Documentation
  - a. Residual test of discharged water
  - b. Location of water discharged

## WATER – Chemical Handling/Transporting and Spill Response

1. Preparation
  - a. Understand MSDS sheets for handling of product
  - b. Determine proper place of handling
  - c. Have necessary containment and spill kits at handling place
  
2. Process
  - a. Begin transfer process
  - b. Discontinue operations if spill levels occurs
  - c. Disconnect and store handling equipment
  
3. Clean-up
  - a. Clean up spills with proper material
  - b. Dispose of contaminated material at appropriate facility
  
4. Documentation
  - a. Report spills to Davis County
    - 5 gallons of hydro fluoride acid
    - Work hours      451-3296
    - After hours      451-4151      Davis County dispatch