Waterbury Filing No. 1
Operations and Maintenance Manual
Private Storm Inspections and Maintenance (O&M)

County Job No. PCF SF237

Routine maintenance of the storm drain system consists of litter and debris pickup, vegetation management, erosion control, and sediment removal when necessary. Mowing and vegetation management shall be performed with care to ensure that soils remain stable and not to cause erosion. Noxious weed management shall be performed as necessary and as required under project approval conditions.

Removal of sediment shall be performed with the use of equipment such as a skid steer, backhoe, and front-end loader. The removed materials shall be hauled to an acceptable landfill site unless otherwise legally permitted to be utilized elsewhere. Materials are not to be stored onsite. Equipment shall utilize the designated access roads and shall not be used in a manner to cause damage to adjacent vegetated and stable areas to the extent possible. If storm drain system contain wetlands many activities, including maintenance, may be subject to regulation and permitting.

Erosion control and restoration work such as, revegetation, riprap installation, and other stabilization methods will require the use of heavy equipment.

Table 1 – General Storm Drain System Maintenance Guidelines

Activity	Maintenance Action	Frequency of Action
Debris and litter removal	Remove debris and litter from the storm drain system to improve flow characteristics and aesthetics. Dispose of as appropriate.	Routine – including annual, pre-storm season (April and May) and following significant rainfall events.
Erosion and sediment control	Repair and revegetate eroded areas in the discharge area or intake.	Non-routine –as necessary based on inspection.
Structural	Repair inlets, manholes and pipe structures as needed.	Non-routine – repair as needed based on regular inspections.
Inspections	Inspect storm drain system to ensure continued function as initially intended. Check for erosion, slumping, excessive sedimentation, overgrowth, embankment and inflow integrity, and damage to any structural elements. Report any illicit discharge immediately.	Routine – annual inspection of hydraulic and structural facilities. Also check for obvious problems during routine maintenance visits.
Nuisance control	Address odor, insects, wildlife burrows and dens and other issues associated with stagnant or standing water.	Non-routine –as necessary per inspection or complaint.
Sediment removal	Remove accumulated sediment from the inlets, manholes and pipe bottoms.	Non-routine –as necessary per inspection.

Routine Maintenance Activities

The majority of this work consists of scheduled mowing, litter and debris pickups for the storm drain during the growing season. It also includes activities such as weed control. These activities normally will be performed numerous times during the year. These items typically do not require any prior correspondence with EPC, however, completed inspection and maintenance forms shall be retained and submitted to EPC for each inspection and maintenance upon request. The Routine Maintenance Activities are summarized below, and further described in the following sections.

Table 2 – Summary of Routine Maintenance Activities

Litter / Debris Removal	Remove and dispose of litter and debris	Litter / debris in inlets, manholes and pipe	Routine – twice annually

Properly dispose of litter and debris materials at an approved landfill or recycling facility. It should be noted that major debris removal may require other regulatory permits prior to completing the work.

Minor Maintenance Activities

This work consists of a variety of isolated or small-scale maintenance/operational problems. Most of this work can be completed by a small crew, hand tools, and small

equipment. These items may require prior approval from EPC depending on the scope of work. Completed inspection and maintenance forms shall be retained for each inspection and maintenance period. In the event that the storm drain needs to be dewatered, care should be given to ensure sediment, filter material and other pollutants are not discharged. The appropriate permits shall be obtained prior to any dewatering activity.

Table 3 – Summary of Minor Maintenance Activities

Activity	Maintenance Action	Look for:	Minimum Frequency
Sediment/Pollutant Removal	Remove and dispose of accumulated sediment from the channel bottom.	Litter / debris in inlets, manholes and pipe	Non-routine – as needed based on inspection.

Major Maintenance Activities

This work consists of larger maintenance/operational problems and failures within the stormwater drainage facilities. This work will likely require approval from EPC Engineering to ensure the proper maintenance is performed. This work requires that Engineering Staff review the original design and construction drawings to assess the situation and necessary maintenance activities. This work may also require more specialized maintenance equipment, design plans/details, surveying, and assistance through private contractors and consultants. In the event that the storm drain needs to be dewatered, care should be given to ensure sediment, filter material and other pollutants are not discharged. The appropriate permits shall be obtained prior to any dewatering activity.

Table 4 – Summary of Major Maintenance Activities

Activity	Maintenance Action	Look for:	Minimum Frequency
Major Sediment / Pollutant Removal	Remove and dispose of sediment.	Large quantities of sediment in inlets, manholes and pipe and reduced conveyance rate/capacity	Non-routine –as necessary based on inspection.
Major Erosion Repair	Repair erosion – find cause of problem and address to avoid future erosion	Severe erosion including gullies, excessive soil displacement, unusual areas of settlement, holes	Non-routine –as necessary based on inspection.
Structural Repair	Structural repair to restore portions of the in inlets, manholes and pipe to its original design	Deterioration and/or damage to structural components – broken concrete, damaged pipe, drop/check structures or dissipators	Non-routine –as necessary based on inspection.
Inlets, manholes and pipe Rebuild	Contact EPC Engineering	Overall storm sewer system failure	Non-routine –as needed due to complete failure of drainage channel

Inspection Procedures

Periodic inspections of drainage channels and associated stormwater control measures in developed areas are needed in every community to prevent the accumulation of debris deposited by storms, dumping, or natural processes. Inspections must be conducted at least once each year and after each storm that could adversely impact the drainage system. Inspections are also needed in response to citizen complaints.

Conduct annual visual inspections during the dry season to determine if there are problem inlets where sediment/trash or other pollutants accumulate. Inspection and maintenance records should be used to determine problem areas that may need to be checked more often. Appropriate action must be taken after an inspection identifies the need for maintenance or cleaning.

The attached form includes the typical information necessary for and during an inspection. Similar forms or electronic record keeping may be utilized if all relevant information is recorded. The entity responsible for channel maintenance is required to submit the periodic inspection reports upon request by County Staff. Inspections involving decisions about structural issues shall be signed by a licensed professional engineer.

Inspections of inflow structures including detention spillways and water quality outlet pipes discharging to the channel shall be coordinated with channel inspections.

Illicit discharges such as dumping of home goods or garbage, appliances, yard wastes, paint spills, abandoned oil containers and other pollutants shall be immediately reported to EPC Staff and other agencies as appropriate. Reference El Paso County Ordinance No. 07-01, as amended. EPC recommends that the responsible entity encourage public reporting of improper waste disposal by posting “No Dumping” signs, neighborhood notices, and/or social media when available, with contact information to report violations.

Wetlands

If drainage channels contain wetlands many activities, including maintenance, may be subject to regulation and permitting. The responsible maintenance entity shall maintain wetlands vegetation as appropriate and in consultation with the proper authorities including the U.S. Army Corps of Engineers when applicable. The responsible maintenance entity shall ensure proper training / licensing of contractors and staff to minimize the potential for damages to the wetlands.

All applicable safety and environmental considerations with regards to the application of any pesticides or herbicides shall be verified. It is also strongly encouraged that the responsible entity employ or consult a wetlands specialist or certified arborist with the ability to identify invasive/exotic species. Due to the sensitive nature of using chemicals near water bodies, a written Quality Assurance/Quality Control (QA/QC) plan shall be implemented.

Employees shall be trained in accordance with any local, state, and federal regulations and laws prior to any application of chemicals. A copy of the QA/QC plan must be submitted to the County Environmental Division prior to any chemical applications. In addition to the

QA/QC plan, copies of the Safety Data Sheets (SDS) for all the chemicals being used shall be provided upon request.

The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The basis of the CWA was enacted in 1948 and was called the Federal Water Pollution Control Act, but the Act was significantly reorganized and expanded in 1972. "Clean Water Act" became the Act's common name with amendments in 1972.

Section 404 - establishes a program to regulate the discharge of dredged and fill material into waters of the United States, including wetlands. CWA Section 404(b)(1) Guidelines – U.S. Environmental Protection Agency (EPA) (Although they are called “guidelines,” these criteria are established in regulations (40 CFR Part 230) and are legally binding.)
https://www.epa.gov/cwa-404/clean-water-laws-regulations-and-executive-orders-related-section-404

Private Storm Drain System Inspection Report Form

Date: _____ Inspector: _____

Type of inspection: Post-Storm _____ Complaint _____ Routine _____

Location: (Identify stream or basin name, downstream and upstream streets or reference points, and location of problem. Provide sketch as needed.)

_____

_____

_____

Type of problem: Litter ___ Minor ___ Obstruction ___ Structural ___ Illicit Discharge** ___

Recommended maintenance: _____

_____

_____

Is equipment needed? _____ If so, list equipment needed: _____

_____

Date: _____ Offsite Right of entry needed? _____

Work order description: _____

_____

_____

_____

_____

State permit(s) needed? _____ Work order number: _____

Date: Crew chief: _____

Maintenance performed: _____

_____

_____

_____

Inspected by: _____

Use other side for additional recommendations for this site.

****Report illicit discharges to the County and appropriate agencies.**