

**VILLAGE OF LAKE ORION
CATCH BASIN CLEANING / WASTES DISPOSAL
STANDARD OPERATING PROCEDURE**

Description

As a consequence of its function, the stormwater conveyance system collects and transports urban runoff that may contain certain pollutants. Maintaining catch basins, stormwater inlets, and other stormwater conveyance structures on a regular basis will remove pollutants, prevent clogging of the downstream conveyance system, restore catch basins' sediment trapping capacity, and ensure the system functions properly hydraulically to avoid flooding.

Approach

Catch Basins/Inlet Structures

- Municipal staff inspects all catch basins annually to ensure the following:
 - Immediate repair of any deterioration threatening structural integrity.
 - Cleaning before the sump is 50% full. Catch basins are cleaned annually to meet this standard.
- Catch basins, storm drain inlets, and other conveyance structures in high pollutant load areas are cleaned first each year to remove accumulated sediments and debris.
- Inspections are conducted more frequently during the wet season for problem areas where sediment or trash accumulates more often.
- Accurate logs of the number of catch basins cleaned and the amount of waste removed from those catch basins are kept.
- Catch basin wastes are hauled to the Wastewater Treatment Plant for storage classification and disposal.
- A vactor truck mechanical cleaner is utilized for waste collection.

Storm Drain Conveyance System

- We locate reaches of storm drain with deposition problems and develop a flushing schedule that keeps the pipe clear of excessive buildup.
- Storm sewers are cleaned as needed.
- Wastes are hauled to the Wastewater Treatment Plant for storage classification and disposal.

Maintenance

Objectives

- Contain
- Educate
- Reduce/Minimize

Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	✓
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓
Oxygen Demanding	✓

<p>VILLAGE OF LAKE ORION CATCH BASIN CLEANING / WASTES DISPOSAL STANDARD OPERATING PROCEDURE</p>

- Two-person teams are typically required to clean catch basins with the vector truck.
- Identifying illicit discharges requires teams of at least two people, plus administrative personnel.
- Arrangements are made for proper disposal of collected wastes.

Illicit Connections and Discharges

- During routine dry-weather screening investigations, staff looks for evidence of illegal discharges or illicit connections, as well as accumulation of sediments in the system.
- This information is then added to the priority list as needed.

Training

- Crews are trained in proper maintenance activities, including record keeping and disposal.
- Crews are trained regarding non-stormwater discharges.
- Only properly trained individuals are allowed to handle hazardous materials/wastes.
- All field staff is trained to recognize and report illegal dumping.
- All field staff receives good housekeeping and pollution prevention training at least once within the permit period.

**VILLAGE OF LAKE ORION
MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4)
CONSTRUCTION SITE RUNOFF CONTROL PROCEDURE**

I. POLICY:

This policy is to establish the Village of Lake Orion procedures for construction site runoff control.

II. BACKGROUND:

The MDEQ NPDES Phase II Stormwater Discharge Permit Application requires a procedures for construction site runoff control that includes notification procedures and ensuring proper permits are obtained by those disturbing greater than one acre of soil within the jurisdiction.

III. PROCEDURE:

The Village will track the receipt of complaints submitted by the public or noted by staff during regular course of business of soil, sediment, or other pollutants such as pesticides, petroleum derivatives, construction chemicals, and solid wastes are being discharged into the Village Lake Orion MS4. The tracking will include:

- Name of person providing the complaint
- Location (address or nearest cross street)
- Description of follow up (e.g., date referred to the Part 91 enforcing agency).

The Village will notify the MDEQ PEAS Hotline when soil, sediment, and other pollutants such as pesticides, petroleum derivatives, construction chemicals, and solid wastes are discharged into the MS4 in a quantity that could negatively impact surface waters of the state.

{FOR NON-PART 91 AGENCIES }

The Village of Lake Orion will notify the Part 91 Agency, the Oakland County Water Resources Commissioner, when soil or sediment are discharged into the Village's MS4 in a quantity that could negatively impact surface waters of the state.

The Village of Lake Orion ensures that construction activity of one acre or greater in total earth disturbance, with the potential to discharge to the MS4, obtains a Part 91 Permit and State of Michigan Permit by Rule or is conducted by an approved Authorized Public Agency through the site plan review process. A full Soil Erosion and Sedimentation Control (SESC) Plan must be submitted as required in Section 151.02 of Chapter 151 Design and Construction Standards.

IV. OTHER:

Any questions on this policy and procedure should be directed to the Storm Water Manager.

V. PROCESS FOR UPDATING/REVISING THIS PROCEDURE

This procedure shall be reviewed on an annual basis by the Stormwater Manager for any updates to streamline the requirements.

<p>VILLAGE OF LAKE ORION MUNICIPAL-OWNED STORMWATER SYSTEM CONTRACTOR REQUIREMENTS AND OVERSIGHT</p>

I. POLICY:

This policy is to establish procedures for requiring Village of Lake Orion contractors to comply with pollution prevention and good housekeeping BMPs and providing oversight to ensure compliance.

II. BACKGROUND:

The MDEQ NPDES Phase II Stormwater Discharge Permit Application requires a procedure for requiring contractors hired by the applicant to perform municipal operation and maintenance activities comply with all pollution prevention and good housekeeping BMPs as appropriate. This procedure also identifies how the applicant provides oversight of contractor activities to ensure compliance.

III. CONTRACTOR REQUIREMENTS AND OVERSIGHT

The contractors hired by Village of Lake Orion to perform municipal operations that potentially impact stormwater are required to follow appropriate pollution prevention BMPs and are listed in the following table:

Contractor	Activity	Stormwater BMP	Procedure	Oversight
TruGreen	Apply fertilizer and weed control to municipal properties	Maintain all fertilizer and weed control on vegetated areas and off paved areas. Maintain 15' buffer from all water bodies.	Contract language requiring contractor to follow BMPs	DPW staff provide spot checks of fertilizing/ weed control activities

**VILLAGE OF LAKE ORION
MUNICIPAL-OWNED STORMWATER SYSTEM
SALT APPLICATION AND STORAGE**

Description

The application and storage of deicing materials, most commonly salts such as sodium chloride, can lead to water quality problems for surrounding areas. Salts, gravel, sand, and other materials are applied to highways and roads to reduce the amount of ice during winter storm events. Salts lower the melting point of ice, allowing roadways to stay free of ice buildup during cold winters. Sand and gravel increase traction on the road, making travel safer.

Approach

During road salt application, certain best management practices can produce significant environmental benefits. The amount of road salt applied should be regulated to prevent over-salting of motorways and increasing runoff concentrations. The amount of salt applied should be varied to reflect site-specific characteristics, such as road width and design, traffic concentration, and proximity to surface waters. Calibration devices for spreaders in trucks aid maintenance workers in the proper application of road salts.

Our Pollution Prevention Approach to Salt Applications

- The minimum amount of salt needed to get the job completed is used, while maintaining safety.
- “Low salt” areas are established near sensitive environments.
- Road temperatures are considered when determining volume of salt to apply.
- Equipment is calibrated regularly to better control the application volumes and rates.
- The storage areas (as well as the entire DPW facility) are inspected periodically by City staff and bi-annually by a Certified Storm Water Operator.

Our Pollution Prevention Approach to Salt Storage

- We store salt in a 3-sided wooden shed, protected from wind and precipitation. The salt pile is not located within 50 feet of a wetland or waterway and is not located within the 100-year floodplain. There are no interior floor drains located inside the shed, nor are there any exterior storm catch basins located within 20 feet of the salt shed.
- Excess salt is swept up from the parking lot as needed.

Truck Washing

- Salt trucks are washed indoors where the wash water is connected to the sanitary sewer system.

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment
Nutrients
Trash
Metals
Bacteria
Oil and Grease
Organics
Oxygen Demanding

**VILLAGE OF LAKE ORION
MUNICIPAL-OWNED STORMWATER SYSTEM
SALT APPLICATION AND STORAGE**

Training

- Drivers are trained to improve loading of materials, application techniques, and reduce losses.
- Field staff receives good housekeeping and pollution prevention training at least once throughout the permit cycle.

VILLAGE OF LAKE ORION
SPILL PREVENTION, CONTROL & CLEANUP
STANDARD OPERATING PROCEDURE

Description

Spills and leaks, if not properly controlled, can adversely impact the storm drain system and receiving waters. Due to the type of work or the materials involved, many activities that occur either at a municipal facility or as a part of municipal field programs have the potential for accidental spills and leaks. Proper spill response planning and preparation can enable municipal employees to effectively respond to problems when they occur and minimize the discharge of pollutants to the environment. Since spill prevention is such a broad topic, many areas related to spill prevention and control is covered throughout the SOP.

Objectives

- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	
Nutrients	✓
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓
Oxygen Demanding	✓

Approach

Pollution Prevention

- All indoor drains at the Department of Public Works Facility are piped to the sanitary sewer to avoid surface water contamination.
- All materials are stored indoors. Only small containers of cleaning supplies are stored in closed cabinets.
- Spill cleanup materials are readily available at all facilities with the potential to spill a liquid.

Protocols

- All material handling which takes place outdoors (i.e. bulk tank delivery of chemical at POTW) is handled using safety protocols, drip trays and spill clean-up equipment.
- Spill cleanup materials, such as absorbents are located at the stations where they are readily accessible (e.g. near storage and maintenance areas).

Spill Cleanup Procedures

- Small non-hazardous spills
 - Make sure area is safe for entry and the spill does not pose an immediate threat to health or safety of responder.
 - Stop source of spill (plug hole, upright the container, shut off valve).
 - Contact co-workers and Supervisor for assistance and to make them aware of the spill and potential dangers.
 - Use a rag, damp cloth or absorbent materials for general cleanup of liquids.
 - Use brooms or shovels for the general cleanup of dry materials.
 - If water is used, it must be collected and properly disposed of. The wash water cannot be allowed to enter the storm drain.
 - Dispose of any waste materials properly.
 - Clean or dispose of any equipment used to clean up the spill properly.

**VILLAGE OF LAKE ORION
SPILL PREVENTION, CONTROL & CLEANUP
STANDARD OPERATING PROCEDURE**

- Large non-hazardous spills
 - Make sure area is safe for entry and the spill does not pose an immediate threat to health or safety of responder.
 - Stop source of spill (plug hole, upright the container, shut off valve).
 - Contact co-workers and Supervisor for assistance and to make them aware of the spill and potential dangers.
 - Use absorbent materials for general cleanup of liquids
 - Use brooms, shovels or street sweepers for the general cleanup of dry materials.
 - If water is used, it must be collected and properly disposed of. The wash water cannot be allowed to enter the storm drain.
 - Dispose of any waste materials properly.
 - Clean or dispose of any equipment used to clean up the spill properly.
- Hazardous materials
 - If flammable liquid is spilled, turn off engines and nearby electrical equipment. If serious hazards are present leave the area and call 911. When in doubt consult the Material Safety Data Sheets for hazards.
 - For very large or hazardous spills, an outside contractor may be utilized.

Reporting

- Spills are reported in accordance with applicable reporting laws. Spills that pose an immediate threat to human health or the environment must be reported immediately to the MDEQ Southeast Michigan District Office at 586-753-3700 and the Pollution Emergency Alerting System (PEAS) at 1-800-292-4706.
- Spills that pose an immediate threat to human health or the environment should also be reported to the local fire department and the Local Emergency Planning Committee (LEPC).
- After the spill has been contained and cleaned up, a written report must be submitted to the MDEQ Water Resources Division Supervisor for the Southeast Michigan District. The report must contain a full written explanation of the cause, discovery, clean-up, and recovery measures taken, preventative measures to be taken, and schedule of implementation.
- A copy of the detailed spill report about the incident should be kept on file. The incident may also be used in briefing staff about proper procedures.

<p>VILLAGE OF LAKE ORION MUNICIPAL-OWNED STORMWATER SYSTEM STRUCTURAL STORMWATER CONTROLS - INSPECTION AND MAINTENANCE POLICY</p>
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I. POLICY:

This policy is to establish procedures for inspecting and maintaining Village of Lake Orion Structural Stormwater Controls.

II. BACKGROUND:

The MDEQ NPDES Phase II Stormwater Discharge Permit Application requires a procedure for inspecting and maintaining the structural stormwater controls identified in the Application. This procedure includes a description and schedule for inspecting and maintaining each structural stormwater control and the process for disposing of maintenance waste materials. All structural stormwater controls shall be maintained to reduce to the maximum extent practicable the contribution of pollutants to stormwater.

III. STRUCTURAL CONTROLS & RECOMMENDED MINIMUM INSPECTION SCHEDULE

Structural Control Type	Recommended Minimum Inspection Schedule
Catch Basins	Once every 5 years or as identified by specific facility operating procedures
Detention Basin	Annually
Vegetated Swales	Once every 5 years
Infiltration Basin/Trench	Annually
Rain Gardens	Annually

IV. PROCEDURE: *note – reference to work orders is in conjunction with asset management systems that have a tracking system for maintenance

- 1) Develop a schedule for inspecting each facility that has stormwater structure controls using the guide in Table 1. For roadways, develop a map or list that identifies areas containing structural stormwater controls for inspection each year, ensuring that all catch basins will be inspected at least once every five (5) years.
- 2) At the time of inspection, print a Structural Stormwater Control Work Order for the facility (ies) and/or roadways.
- 3) Print or have available electronically the inspection forms for each Structural Stormwater Control at the facility (ies) for inspection.
- 4) Print a map (if available) or obtain as-built plans that show all stormwater utilities and appurtenances at the facility (ies).

VILLAGE OF LAKE ORION
MUNICIPAL-OWNED STORMWATER SYSTEM
STRUCTURAL STORMWATER CONTROLS - INSPECTION AND MAINTENANCE POLICY

- 5) Visually inspect all Structural Stormwater Controls, including catch basins, manholes, outlet pipes, detention ponds and other types listed in Table 1 in accordance with each applicable inspection form.
 - a. If community/county has GIS system, coordinate GPS location of each Structural Stormwater Controls with appropriate staff responsible for inputting utilities into the community's/county's GIS system.
 - b. If necessary repairs or maintenance are required, create a separate work order for the activity. Attach scanned or electronic inspection forms and photos to the work order for required maintenance.
 - c. If any Illicit Discharge is suspected, follow Tasks 1.2 and 1.4 of the *Illicit Discharge Elimination Plan (IDEP)*. Notify the Stormwater Manager.
- 6) Complete repairs or maintenance.
- 7) Debris and maintenance wastes removed as part of the maintenance and/or repairs shall be disposed of in accordance with the *Catch Basin Cleaning and Waste Disposal Standard Operating Procedure*.
- 8) Work orders for inspection of all municipal-owned storm sewers will be generated automatically.

V. OTHER:

Any questions on this policy and procedure should be directed to the Storm Water Manager.

VI. PROCESS FOR UPDATING/REVISING THIS PROCEDURE

This procedure shall be reviewed on an annual basis by the Stormwater Manager for any updates to streamline the requirements.

**VILLAGE OF LAKE ORION
STREET AND PARKING LOT MAINTENANCE
STANDARD OPERATING PROCEDURE**

Description

Streets, roads, and highways are significant sources of pollutants in stormwater discharges, and operation and maintenance (O&M) practices, if not conducted properly, can contribute to the problem. Stormwater pollution from roadway and bridge maintenance should be addressed on a site-specific basis. Use of the procedures outlined below, that address street sweeping, and repair, bridge and structure maintenance, and unpaved roads will reduce pollutants in stormwater.

Approach

- Materials are recycled whenever possible.
- The help of citizens are used to keep yard waste, used oil, and other wastes out of the gutter.

Street & Parking Lot Sweeping and Cleaning

- The Village maintains a consistent sweeping schedule. The streets and parking lots are not prioritized. All streets and public parking lots are swept monthly from April thru October.
- Street cleaning is performed during dry weather if possible.
- Wet cleaning or flushing of streets is avoided, and dry methods are utilized where possible.
- Cleaning equipment is maintained in good working condition.
- Vehicles and equipment are regularly inspected for leaks, and repaired immediately.
- Logs of the number of curb-miles swept and the amount of waste collected are maintained.
- Street sweeping debris and dirt are properly disposed at a landfill, once dried if necessary.

Street Repair and Maintenance

- Paints containing lead or tributyltin are considered a hazardous waste and are disposed of properly.
- Water based paints are used whenever possible. If using water based paints, the application equipment is cleaned in a sink that is connected to the sanitary sewer.
- Leftover paints are stored if they are to be kept for the next job, or disposed of properly.

Objectives

- Contain
- Educate
- Reduce/Minimize

Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	✓
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓
Oxygen Demanding	✓

Concrete installation and repair

- The amount of fresh concrete or cement mortar mixed is limited. Only what is needed for the job is mixed.
- Concrete materials are stored under cover, away from drainage areas. Bags of cement are secured after they are opened. Wind-blown cement powder is kept away from streets, gutters, storm drains, rainfall, and runoff.
- Sweepings from exposed aggregate concrete are not washed into the street or storm drain.
- When making saw cuts in pavement, little water as possible is used and is performed during dry weather. After the liquid drains or evaporates, the slurry residue is shoveled or vacuumed from the pavement or gutter and removed from the site. Alternatively, a small onsite vacuum may be used to pick up the slurry as this will prohibit slurry from reaching storm drain inlets.

Patching, resurfacing, and surface sealing

- Patching, resurfacing, and surface sealing is scheduled for dry weather.
- Materials are stockpiled away from streets, gutter areas, storm drain inlets, or watercourses.
- During wet weather, stockpiles are covered with plastic tarps or berm around them if necessary to prevent transport of materials in runoff.
- Excess material from exposed aggregate concrete or similar treatments is prevented from entering streets or storm drain inlets.
- Streets are swept, never hosed down, to clean up tracked dirt. A street sweeper or vacuum truck is used. Vacuumed liquids are never dumped in storm drains.

Equipment cleaning maintenance and storage

- Equipment is inspected regularly and any leaks are repaired.

Unpaved Roads and Trails

Exposed soil areas are stabilized to prevent soil from eroding during rain events. This is particularly important on steep slopes. Quality aggregates are used to minimize transfer of fine aggregates onto paved surfaces.

Training

Employees are trained regarding proper street sweeping operation and street repair and maintenance. Employees and contractors are instructed to ensure that measures to reduce the stormwater impacts of roadway maintenance are being followed. Employees are trained on proper spill containment and clean up, and in identifying non-stormwater discharges.