

+MCM No. 6 - Pollution Prevention +in Municipal Operations

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MCM#6 Pollution Prevention/Good Housekeeping

BACKGROUND



- NPDES is a program that stems from **Clean Water Act of 1972**
- The Phase II permit program regulates municipal separate stormwater systems (MS4s)
 - **requires a plan to reduce stormwater pollution**

MCM#6 Pollution Prevention/Good Housekeeping

+MCM No. 6 - Pollution Prevention +in Municipal Operations

- Municipal Facility Management
 - SWP3 for Municipal Facilities
- Grounds/Park Maintenance
- Storm Drains/Ditch Cleaning & Maintenance
- Road Salt Application & Storage

+Municipal Facility Management

The goal relative to facility management is reduction in potential sources for stormwater pollution from municipal facility runoff.

MCM#6 Pollution Prevention/Good Housekeeping

Good Housekeeping Techniques in Municipal Facilities

- Materials Use and Storage
- Signage
- Record Keeping
- Training/Education

MCM#6 Pollution Prevention/Good Housekeeping

Municipal Facilities Materials Use and Storage



Store
chemicals
properly

- Clear Labeling of Products
- Containment – **Keep it covered!**
- Access to Fire Suppressant



Municipal Facilities Materials Use and Storage

Clear Labeling



Ensure proper containment & disposal of used items



Municipal Facilities Materials Use and Storage



Use environmentally friendly solvents

Biodegradable Compounds

Organic Materials

Municipal Facilities Materials Use and Storage



Separation & Identification of Recycled Material

Spill containment in disposal areas

Municipal Facilities Materials Use

Recycling of Materials

- Batteries
- Aerosol Cans
- Fluorescent bulbs
- Ballasts from fluorescent lamp fixtures

Used Oil Recycling



Municipal Facilities Record Keeping

WASTE INFORMATION	
Paint wastes	gallons per month
Floor Oil	gallons per month
Used Oil	gallons per month
Light bulbs	bulbs used to replace
Fluorescent	per month
Batteries	per quarter
Aerosol Cans	gallons per quarter
Ballast Cans	per quarter
Oil from the shop's drains	gallons per quarter
Scrap metal, wire, hoses, fuel, filters	gallons per month for recycling
Paint waste	gallons every month
Paint gun cleaner	gallons every month
Paint Filters	how per month
Printed circuit boards	monthly per month

Vehicle and Motor Maintenance



Maintenance inside garage

Floor drains to sanitary system



Vehicle and Facility Cleaning

Clean vehicles inside garage

Wash water drains to sanitary sewer



Practice good facility management.



Do you know where it goes once it enters the drain? Do you know who maintains the drain?

Make sure catch basins are clean Clean-up of spills to stormwater catch basins



Spill Prevention and Response

- Train Employees about proper response and clean-up procedures
- **Have emergency equipment posted & available**



Spill Prevention and Response

- Emergency Spill Response Information posted by telephone.
- Educate employees about waste handling and emergency response procedures.
- Adequate space around storage areas, labels visible.

Spill Prevention and Response

- Maintain Current Material Safety Data Sheets
- Central Posting Area
- Copies in Vehicles
- Update with Introduction of New Materials



Employee Training Program

- Implement Routine Training Program on Use, Disposal and Clean-up of Products



Practice good facility management



Provide information

Use signs

Find areas for posting signs and post educational messages



Track Maintenance Activities

DATE	LOCATION	ACTIVITY	STATUS
11/15/08	301	2/4	
11/16/08			
11/17/08			
11/18/08			
11/19/08			
11/20/08			
11/21/08			
11/22/08			
11/23/08			
11/24/08			
11/25/08			
11/26/08			
11/27/08			
11/28/08			
11/29/08			
11/30/08			

Summary of Good Housekeeping Techniques in Municipal Facilities

- Materials Use and Storage
- Signage
- Record Keeping
- Training/Education

Stormwater Pollution Prevention Plans (SWP3) for Municipal Facilities

New Requirement of the Draft Renewal Permit for MS4s

- Goal of planning process is **prevention of pollution of stormwater from municipal garages and storage sites**
- SWP3 must be tailored to each site, storage facility

Stormwater Pollution Prevention Plan (SWP3) for Municipal Facilities

1. Planning and Organization
2. Assessment
3. BMP Identification and Selection
4. Implementation
5. Evaluation

Municipal Facility SWP3

Planning & Organization

- Determine person(s) responsible for plan implementation
- Establish responsibilities for implementation

Municipal Facility SWP3

Site Assessment:

- Site Plan
 - Property boundaries
 - Topography
 - Storm and Sanitary Utilities
 - Water Resources
 - Storage Areas

Municipal Facility SWP3

Site Assessment

- Material Storage/Inventory
- Existing Structural Controls
- Significant Spills/Leaks (past 3 years)
- Overall Facility Site Summary Document
 - Narrative of potential sources of contamination, storage practices, site management responsibilities

Municipal Facility SWP3

BMP Identification

- Baseline BMPs
- Site Specific BMPs for specific materials, storage areas
- Emergency Response BMPs

Municipal Facility SWP3

SWP3 Plan Implementation

- Develop implementation plan for BMPs
- Train Employees
- Establish routine training schedule
- Establish record keeping procedures
- Implement education program

Municipal Facility SWP3

Evaluation & Monitoring

- Regular evaluation and plan update required as part of compliance
 - Conduct annual inspections, evaluate BMPs
 - Maintain records, submit with Annual NPDES Report
 - Annually review and update plan

Stormwater Pollution Prevention Plan (SWP3) for Municipal Facilities - SUMMARY

Must be prepared within one year of NOI under new NPDES MS4 General Permit

1. Planning and Organization
2. Assessment
3. BMP Identification and Selection
4. Implementation
5. Evaluation

+Municipal Grounds & Park Maintenance

The goal relative to park maintenance is protection of water resources & reduction of stormwater pollution from municipal properties.

Municipal Property Maintenance



Recognize connection of park operations to community water resources

Property Management BMPs:

- Landscape planning
- Fertilizer/Insecticide Application
- Animal Waste Management
- Septic System Inspection and Maintenance
- Illicit Discharge/Dumping
- Sediment & Erosion Control

Landscape Planning

- Reduce areas requiring irrigation
- Mulch heavy use areas
- Limit use of fertilizers/herbicides

Landscape Planning

- Maintain existing water resources – provide adequate buffer



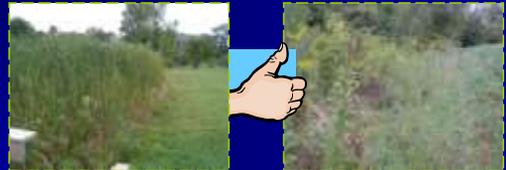
Landscape Planning

- Provide adequate buffer



Landscape Planning

- Stream protected by dense vegetation
- No chemicals applied to grassed area



Landscape Planning

- Provide signage within parks regarding importance of such features



Natural Material Recycling

- Recycle municipal and residential natural materials
- Use recycled materials in landscape management



Pet Waste Collection

- Provide ample containers for trash/pet waste collection
- Provide and maintain trash receptacles



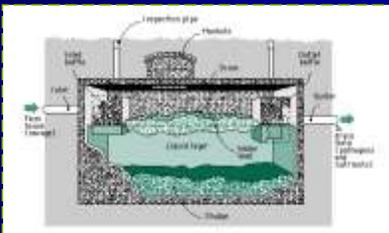
Animal Waste Management

- Pollution from geese
- Removal of nests



Septic Systems

- Maintenance and Inspection of Septic Facilities within Municipal Parks



In addition, you serve as the eyes of your community.

You have the opportunity to see your community on a regular basis.

You can make sure your community, and those working in it, are also taking care of the waterways.

Illicit Discharge Detection



Surface Discharge - Dumping pollutants into drains

Illegal Dumping

Post "No Dumping" signs to reinforce the message.

The signs will also help with enforcement if dumping occurs.



Sediment & Erosion Control

Ensure that sediment and erosion control BMPs are maintained on municipal property improvement projects



Sediment & Erosion Control

Sediment and erosion control BMPs on municipal property improvement projects



Community Review

Ensure construction entrances are in tact.



Community Review

Know who to call if something is not right.



Property Management BMPs:

- Landscape planning
- Fertilizer/Insecticide Application
- Animal Waste Management
- Septic System Inspection and Maintenance
- Illicit Discharge/Dumping
- Sediment & Erosion Control

Summary - Property Management BMPs

The Goal of NPDES Program is:

- Protection of water resources
- Reduction in sources of stormwater pollution from municipal properties.

+Municipal BMPs - Cleaning & Maintenance

The goal relative to cleaning and system maintenance is collection and removal of debris and pollutants.

Proper disposal of materials is a key factor for pollution control.

Municipal BMPs – Cleaning and Maintenance

- Street sweeping
- Storm inlet cleaning and maintenance
- Ditch maintenance
- **RECORD KEEPING**



Municipal BMPs– Cleaning and Maintenance

1. Establish maintenance program
2. Maintain records of all maintenance activities
3. Maintain records of maintenance requests from residents
 - Track and map maintenance calls
4. Maintain records of response to maintenance calls

Establish street cleaning programs.

- Clean at minimum bi-annually
- Clean urban areas more frequently
- Disposal of street sweeper material to landfill
- If stockpiled, in contained area

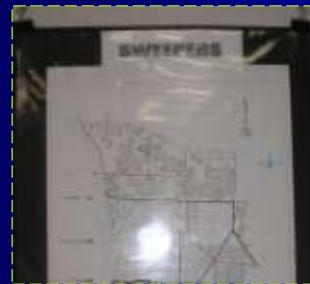


Municipal BMPs – Cleaning and Maintenance

Establish street cleaning programs



Municipal BMPs – Cleaning and Maintenance



Map of Street Cleaning Program

Municipal BMPs – Cleaning and Maintenance

Establish Storm Inlet Cleaning Program

- Clean out catch basins annually and as needed per maintenance calls



Municipal BMPs – Cleaning and Maintenance

Establish Storm Inlet Cleaning Program



Municipal BMPs – Cleaning and Maintenance

Establish Storm Inlet Cleaning Program

- Maintain records
- Log and track maintenance calls
- Map maintenance calls – indication of larger scale problem area

Municipal BMPs – Cleaning and Maintenance

- Storm drain marking program
- Public involvement (MCM #2)



Municipal BMPs – Cleaning and Maintenance

Ditch Maintenance - Cleanup Activities



Municipal BMPs – Cleaning and Maintenance

Stream Assessment



Unprotected zone has caused bank erosion.

Municipal BMPs – Cleaning and Maintenance

Record Keeping of Maintenance Activities



Municipal BMPs – Cleaning and Maintenance

Record Keeping of Maintenance Activities

Leaf Collection by Date / 2006

Date of Task	Total of Curb Tons	1	12	3	23	3
10/15/06	184.7					
10/16/06	130.8					
10/17/06	236.8	25.00		84.00		15.00
10/18/06	113.8	70.00		10.00		
10/19/06	313.4	95.40		95.00		13.00
10/20/06	7.9		7.00			
10/21/06	143.4	70.00		130.00		70.00

Municipal BMPs – Cleaning and Maintenance

Record Keeping of Maintenance Requests

CITY OF WYOMING AIRBORNE CORP
DEPARTMENT OF PUBLIC SERVICE NE 005144

REQUEST FOR SERVICE: REQUEST FOR SERVICE NEW LANDSCAPE GOLF COURSE USE

ADDRESS: _____ ZIP: _____
LOCATION: _____ DATE: _____ TIME: _____

DESCRIPTION OF PROBLEM - COMPLAINT - SERVICE REQUESTED

ASSIGNED TO: _____
SECTION: _____
ADDITIONAL: _____

PERSONNEL: _____

Municipal BMPs – Cleaning and Maintenance

Record Keeping

Street Division
Daily Work Order

Date: _____

Address: _____
Request: _____
Status: _____
Assigned To: _____
Assigned Date: _____
Assigned By: _____
Assigned To: _____

Item	Priority	Start	End	Time	Personnel	Cost	Notes

Municipal BMPs – Cleaning and Maintenance

Summary:

1. Establish maintenance program
2. Maintain records of all maintenance activities
3. Maintain records of maintenance requests from residents
 - Track and map maintenance calls
4. Maintain records of response to maintenance calls

+Road Salt Applicaton & Storage

The Goal of the NPDES Program relative to municipal salt use is reduction in product use, use of environmentally friendly alternatives.

Road Salt Application & Storage

- Environmental Consequences
- Alternative Products
 - Emerging Technologies
- Storage and Mixing
- Product Use Tracking

Road Salt – Environmental Consequences

- Growing concern over roadside habitat degradation and water-quality issues
- Runoff to surface waters and percolation to groundwater are the most common mechanisms for road salts to enter water supplies



Road Salt - Environmental Consequences

- Exposure to NaCl inhibits some soil bacteria
- Loss of bacteria creates friable soils which can lead to suspension of sediment in runoff
- Salt also disrupt the uptake of plant nutrients and inhibits long-term growth

Road Salt - Environmental Consequences

- Salt use jeopardizes the health of consumers of contaminated water supplies especially those with heart or kidney disease
- corrodes automobiles, bridges, and other infrastructure

Road Salt - Environmental Consequences

- California and Nevada restrict road-salt to reduce chloride injury to roadside trees
- Massachusetts turned to alternative road deicers to prevent contamination of residential drinking wells

Road Salt - Environmental Consequences

- Europe is about 10 years ahead of the U.S. in decreasing both costs and salt use while maintaining safety
- Increasing its use of pre-wetted solid chemicals as well as use of salt brine

Road Salt Alternative Products

- Applied in liquid or crystalline form, either of which can be used in conjunction with abrasives (sand)

Brine Storage Tank



Emerging Technologies

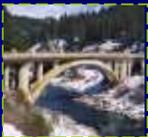
SafeLane – Alternative Pavement

- SafeLane is a surface overlay that will not eliminate chemical applications but rather lessen the frequency of use
- There is an Ohio test location for the application; I-80 eastbound, Brecksville Ohio
- Contact: Jerry Bergstrom, Ohio Turnpike

Emerging Technologies

SafeLane – Alternative Pavement

- Curing time is hours, not days
- Minimal traffic delay
- Reduced potential for work area accidents
- Can be installed over concrete, asphalt, steel, FRP or wood



Road Salt – Storage & Mixing

Salt Storage

- Keep covered
- Clean-up loading areas
- Mix inside storage area



Road Salt Application BMPs

Use salt and grit carefully during snow events...



... and exercise care washing the truck after use.

Road Salt Application BMPs

Track product usage and application areas



Road Salt Application BMPs

Track product usage and application areas



Road Salt Application & Storage

Roadway salt application is an important source of stormwater pollution.

NPDES Program goal is to reduce product use and use environmentally friendly alternatives where possible.

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- Storm Drains/Ditch Cleaning & Maintenance
- Road Salt Application & Storage

+Summary - Property Management BMPs

The Goal of NPDES Program is:

- **Protection of water resources**
- Reduction in sources of stormwater pollution from municipal operations & municipal properties

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