Good Housekeeping Workshop Agenda

Workshop 1 – Parks & Recreation Areas
Tuesday, March 10, 2015 (8 - 11:00 AM)
Snow date: Thursday, March 12, 2015
Northern Essex Community College - Classroom

Workshop 2: Buildings, Facilities, Vehicle and Equipment Maintenance
Friday, March 20, 2015 (8 - 11:00 AM)
Andover Public Safety Building and Public Works Maintenance Yard

Workshop 3: Stormwater Management and Infrastructure Maintenance
Friday, April 10, 2015 (8 - 11:00 AM)
Northern Essex Community College – Classroom

- DPW Stormwater Maintenance Responsibilities
- Applicable Regulations
- Stormwater Maintenance Practices
- Operation and Maintenance Programs
- Opportunities for Regional Efficiencies
- Wrap up
Typical DPW Stormwater Maintenance Responsibilities

- Catch Basin Cleaning
- Street Sweeping
- Snow and Ice Management
- Cleaning Drainage Ditches/Swales
- Maintaining Stormwater Treatment Practices
Do you know?

1. How many miles of municipal stormwater pipes are you responsible for?
2. How many stormwater outfalls does your municipality own?
3. What waterbodies does your town drain to and are they polluted?
4. Does your town/city owns any swirl separators (e.g. Stormceptors), detention basins or bioretention systems, and where they are?
5. Bonus: What does MS4 stand for?
The Problem: Rain is clean... until it’s not. Stormwater carries pollutants to our waters.
The natural water cycle:
- Condensation
- Evapotranspiration
- Evaporation
- Runoff
- High groundwater flow
- Lots of infiltration
- Soil
- Constantly flowing stream
- Bedrock

The urban water cycle:
- Condensation
- Evaporation
- Much less infiltration
- Roofs, roads stop infiltration
- More runoff:
- More
- No rain: streams dry up
- Rain: streams flood
- Low groundwater flow
- Bedrock
- Soil

Towards a more sustainable urban water cycle:
- Contaminated runoff
- Evaporation
- Much better infiltration
- Wetland treatment
- Stream
- Bedrock

Source: Clemson University
Catch Basin Cleaning

How well are we doing?

Pollution Prevention and Good Housekeeping Metric
Average Annual Catch Basin Cleaning Frequency

Commercial/Arterial or Other Critical Streets
(Cleanings/year)

- 1.1-1.9 (4%)
- >2 (4%)
- Undefined or “as needed” basis (7%)
- <1 (19%)
- 1 (55%)

Non-Commercial/Non-Arterial Streets
(Cleanings/year)

- 1.1-1.9 (1%)
- >2 (5%)
- Undefined or “as needed” basis (6%)
- <1 (23%)
- 1 (60%)

83% reporting (193 of 232 municipalities)
84% reporting (194 of 232 municipalities)
Street Sweeping

alloveralbany.com/archive/2011/05/06/street-sweeping

http://www.cambridgema.gov/theworks.aspx

harrisonwest.org/wp-content/uploads/2012/11/Street_Sweeping_harrison-west.jpg
Pollution Prevention and Good Housekeeping Metric Average Annual Street Sweeping Frequency

Commercial/Arterial or Other Critical Streets (Cleanings/year)
- >2 27%
- 2 20%
- 1.1-1.9 45%
- Undefined or “as needed” basis 4%
- 0 1%
- <1 1%

88% reporting (203 of 232 municipalities)

Non-Commercial/Non-Arterial Streets (Cleanings/year)
- >2 10%
- 2 21%
- 1.1-1.9 64%
- Undefined or “as needed” basis 3%
- 0 0%
- <1 0%

88% reporting (205 of 232 municipalities)
Snow and Ice Management

Cleaning Drainage Ditches and Swales
Maintaining Stormwater Treatment Practices

- Detention Basins
- Constructed Wetland/ Gravel Wetland
Stormwater Treatment Practices

- Bioretention Systems
- Dry Swales
Stormwater Treatment Practices

• Infiltration chambers

• Oil/water separators

http://www.njstormwater.org/pdf/stormceptor_stc_maint.pdf
We Take Care of Problems We Can See….

MVPC Good Housekeeping Survey:
• 7 of 10 DPWs manage their maintenance schedules in response to citizen complaints
• 3 of 10 have a written annual maintenance schedule
Pollution Prevention and Good Housekeeping BMPs (MCM6)

Percent reporting the use and completion of practice among the 97% of MA municipalities reporting
Questions or Comments?
Regulations: These Affect Your Stormwater O&M Responsibilities

- NPDES MS4 General Permit
- State Wetlands Protection Regulations
- State Stormwater Management Manual
- Local Wetlands Protection Regulations
- Local Stormwater Management Regulations
- Local Zoning Code + Subdivision Regulations
Regulations – Local Boards + Commissions

• Regulations affecting municipal stormwater infrastructure:
  – NPDES MS4 General Permit
  – State Wetlands Protection Regulations
    • State Stormwater Management Manual
  – Local Wetlands Protection Regulations
  – Local Stormwater Management Regulations
  – Local Zoning Code + Subdivision Regulations
  – Other: drinking water source protection, contaminated soils regulation

Decisions by local boards/commissions
Local Stormwater Regulation - Applicability

Any impervious cover within:
- 100’ of a wetland, or
- 200’ of a stream/river

Large projects and subdivisions

Projects > 1 acre, including road projects

Wetlands Protection Regulations

Stormwater Regulations

Local Site Plan and Subdivision Regulations
Wetlands Protection Regulations

• State and Local Wetlands Protection Regulations
  – Regulate stormwater management for projects within 100 feet of a wetland, 200 feet of a stream or river
  – MA Stormwater Handbook
    • Defines the menu of treatment practices
    • Treatment (sizing and design) standards
    • Requires a written O & M Plan
Local Stormwater Management Regulations

• Required by existing 2003 NPDES MS4 Permit
• Some use the MA Stormwater Handbook
• Implementing agencies vary among towns:
  – Planning Board
  – Conservation Commission
  – Zoning Board
  – DPW
Local Zoning and Subdivision Regulations

• Usually have ‘drainage’ requirements
• Often predate the MA Stormwater Manual
• Stormwater standards often too general or poorly written to apply effectively
• Sometimes conflict with other requirements
• Implemented by:
  – Planning Board, Zoning Board
NPDES MS4 General Permit

- Federal Clean Water Act program
- Permit-holder: Local municipality for its MS4 (MS4: municipal separate stormwater sewer system)
- Goal: Reduce pollutants in local water
Overview of Requirements

Stormwater Management Plan:
• Water Quality Based Effluent Limitations
• Discharges to Certain Impaired Waters
• Reduce Pollutants to the Max Extent Practicable (MEP)
  – Public education and outreach
  – Public involvements and participation
  – Illicit discharge detection and elimination program
  – Construction site stormwater runoff control
  – Stormwater management in new dev’t and redev’t
  – Good housekeeping and pollution prevention
Welcome to the MS4 program!

NPDES MS4 General Permit
Minimum Control Measures

1. Public Education & Outreach
2. Public Involvement & Participation
3. Illicit Discharge Detection and Elimination
4. Construction Runoff
5. Post-Construction Stormwater Management
6. Pollution Prevention & Good Housekeeping in Municipal Operations

www.epa.gov/region1/npdes/stormwater/MS4_MA.html
What is Municipal Pollution Prevention/Good Housekeeping?

Our working definition:

- Assessment and subsequent alteration of municipal operations to reduce the amount of pollution entering the storm drain system and, eventually, receiving water through the implementation of Best Management Practices (BMPs)
Good Housekeeping Requirements
‘Infrastructure Operations and Maintenance’
(Permit section 2.3.7.a.iii)

• Establish a **written maintenance program** (Yr 1)

• **Catch basin** cleaning must be optimized:
  
  • Prioritize inspections near construction activities, clean more frequently if needed
  
  • Clean catch basins before they reach 50% full
  
  • Plan and tracking for optimizing catch basin cleaning throughout the system
  
  • Annual Reporting: # CBs, # inspected, # cleaned, volume or mass of material removed
Good Housekeeping Requirements
‘Infrastructure Operations and Maintenance’
(Permit section 2.3.7.a.iii)

• **Sweeping of Roads and Parking Lots**
  – Minimum 1/year in the spring
  – More frequent sweeping in targeted areas (determined by the municipality based on catch basin inspections and cleaning)
  – Rural uncurbed roads with no catch basins
    • Minimum 1/year in the spring, or
    • Develop an inspection, documentation and targeted sweeping plan (Yr 1)

• **Catch Basin Cleanings and Street Sweepings**
  – Ensure proper storage of cleanings and sweepings prior to disposal
Good Housekeeping Requirements
‘Infrastructure Operations and Maintenance’
(Permit section 2.3.7.a.iii)

- **Winter Road Maintenance**
  - Establish procedures for winter road maintenance (Yr 1)
  - Minimize use of sodium chloride, other salts
  - Evaluate opportunities for alternatives

- **Storm Drain Systems and Stormwater Treatment Structures**
  - Establish inspection and maintenance frequencies and procedures
  - Inspections 1/year
Enhanced Requirements for Discharges to Impaired Waterbody

MassDEP 2012 Integrated List of Waters (305(b)/303(d))

- 2 - Attaining some uses; other uses not assessed
- 3 - No uses assessed
- 4A - Impaired - TMDL is completed
- 4C - Impairment not caused by a pollutant
- 5 - Impaired - TMDL required
Enhanced Requirements for Discharges to Impaired Waterbody

Nitrogen/Phosphorus Impairment:
– Street and parking lot sweeping 2/yr

Chloride Impairment:
– Salt reduction plan developed (Yr 3) and implemented (Yr 5)

Solid, Oil/Grease or Metals Impairment:
– Street and parking lot sweeping increased to target high pollutant sources
– Increase catch basin inspections
Questions or Comments?
Resources

Merrimack Valley Stormwater Collaborative: http://mvpc.org/

Pollution Prevention/Good Housekeeping Practices

- EPA http://water.epa.gov/polwaste/npdes/swbmp/Pollution-Prevention-Good-Housekeeping-for-Municipal-Operators.cfm
- NH Green Snow Pro Training and Certification Program http://www.t2.unh.edu/green-snowpro-training-and-certification

Regulations

- EPA Region 1 MS4 Permit Information http://www.epa.gov/region1/npdes/stormwater/#smallms4program
Standard Operating Procedures

During Year 1 of the project, a number of Standard Operating Procedures (SOPs) were developed to guide communities towards meeting the six minimum control measures in the 2003 MS4 Permit. Some of the SOPs were created in anticipation of what is to come in the next permit. Click on the SOP below for the narrative and inspection forms associated with each.

- **Dry Weather Outfall Inspection**
- **Wet Weather Outfall Inspection**
- **Catch Basin Inspection and Cleaning**
- **Spill Response and Cleanup**
- **Construction Site Inspection**
- **Erosion and Sedimentation Control**
- **Fuel and Oil Handling**
- **Inspecting Constructed BMPs**
- **Locating Illicit Discharges**
- **Oil/Water Separator Maintenance**
- **Storage and Use of Pesticides and Fertilizer**
- **Water Quality Screening with Field Kits**
- **Private Drainage Connections**
CWP Urban Watershed Restoration Manual Series

#9 Municipal Pollution Prevention/Good Housekeeping Practices—Programs

#8 Pollution Source Control Practices—Solutions

#11 Unified Subwatershed and Site Reconnaissance: A User’s Manual—Assessment Protocols
Pollution Prevention/Good Housekeeping for Municipal Operators

Education
Municipal Employee Training and Education

Municipal Activities
Coal–Tar Sealcoats and Polycyclic Aromatic Hydrocarbons (2 pp, 589K, About PDF)
Municipal Landscaping
Municipal Vehicle Fueling
Municipal Vehicle and Equipment Maintenance
Municipal Vehicle and Equipment Washing
Parking Lot and Street Cleaning
Road Salt Application and Storage
Roadway and Bridge Maintenance
Storm Drain System Cleaning

Municipal Facilities
Hazardous Materials Storage
Materials Management
Municipal Facilities Management
Spill Response and Prevention

EPA Internet Resources:

- Urban Management Measures Guidance Chapters 7, 9 and 11 address some of the issues found in this minimum measure.
- Stormwater case studies on good housekeeping includes case studies of how a Phase I or Phase II community has implemented the good housekeeping requirements.

Other Internet Resources:

- California Municipal Stormwater BMP Handbook
- 2005 Stormwater Management Manual for Western Washington: Volume IV -- Source Control BMPs
- Example Good Housekeeping Practices – Alameda Countywide Clean
Efficiencies, Cost Sharing, Working Together

Food for Thought:
• CB Cleaning
• Street Sweeping
• Disposal Services
• Field Investigation
• Training
• Outreach
• Purchasing
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