YOU ARE BEING AUDITED!

OBSERVATIONS ON THE EXPERIENCE

Jim Hafner, City of Blaine
Bruce Elder, City of St. Paul

CEAM Conference
January 26, 2011
THE STORY

- Background
- What is an audit and why are they conducted
- Phase II audit
- Phase I audit
- Some observations and lessons learned
1987, Congress amended the **Clean Water Act (CWA)**
- two phase comprehensive national program for stormwater discharges.

**Phase I**, promulgated on November 16, 1990
- medium and large MS4s with populations of 100,000 or more,
  - several categories of industrial activity,
  - construction activity that disturbs five or more acres of land.

**Phase II**, promulgated on December 8, 1999
- small municipal separate storm sewer systems
  - urbanized areas
  - greater than 10,000 population
  - greater than 5,000 population and discharging to valuable or impaired waters
- construction activity generally disturbing between 1 and 5 acres.
THE PERMIT

- MPCA granted authority by EPA to administer the NPDES program in Minnesota
- MS4 permits … programmatic requirements involving the implementation of best management practices (BMPs) to reduce the discharge of pollutants to the “maximum extent practicable” (MEP). (Minnesota Rules 7001 and 7090)
  - Allows flexibility in the types of BMPs and activities implemented to meet permit requirements
  - Iterative process
WHY AUDIT

- Conduct a comprehensive program evaluation and determine if the permittee is implementing the program and reducing pollutants to the MEP.
- MPCA is required to evaluate the effectiveness and measure progress of MS4 stormwater programs
  - Assess Phase I NPDES and Phase II MS4 programs
    - compliance with NPDES/MS4 permit
    - effectiveness of water quality efforts
- Use guidance developed by US EPA
PHASE II

- MS4 permit – Stormwater Pollution Prevention Plan (SWPPP)

- Six minimum control measures (MCM)
  - Public education
  - Public participation
  - Illicit discharge detection and elimination
  - Construction activities
  - Post-construction controls and maintenance activities
  - Pollution Prevention & Good housekeeping
WHO and WHEN

- **Every MS4 once each permit cycle**
  - Random selection, mainly
    - All MS4s within a five (5) year period
      - not limited by calendar or fiscal milestones
  - MPCA team visits the MS4

- **Full or partial program audit**
  - Comprehensive audit of all six MCMs
  - Screening-level audit of selected MCMs
  - May have a field component
    - private and municipal construction or stormwater projects
NOTIFICATION

- Written notice 60 days prior
  - anticipated date
  - type of audit
  - checklist of items

- Advance submittal of requested info
  - send some info 30 days before audit
    - outreach materials
    - ordinance
    - inspection checklists
    - flow chart of personnel
    - other as requested
NOW WHAT?

- Gather documents
  - last annual report
  - record of inspections
  - ordinance
  - SWPPP
  - training documentation
- They love checklists
  - construction site inspection
  - facility inspections
MPCA IS HERE!

- MPCA team
  - 2 to 3 staff members
- MS4 team
  - person who administers SWPPP
  - other staff with responsibilities
  - inspection staff
    - construction sites
    - stormwater facilities
  - Watershed District
AUDIT FORMAT

- Evaluator asks questions from a set of program evaluation worksheets
  - EPA guidebook
- Conversational style, Q&A
  - draw out additional details
- Topics
  - program in general
  - SWPPP
  - MCMs
  - Focus on MCM 4 – construction oversight
- Field visits – if necessary
FOLLOW UP

- Brief summary at end of audit
- Most MS4’s have deficiencies
  - minimal compliance
- Official summary in writing
  - 3 to 4 months later
  - positive comments
  - highlight program deficiencies
  - recommendations for improvement: MEP
  - rule or permit violations
    - may require a follow up audit
- Respond to written report
- Amend SWPPP if necessary
CHANGES RECOMMENDED

- Develop an organizational chart
- Develop measurable goals to reduce WQ impact
- Develop strategies & measurable goals for reduction of specific pollutants
- Evaluate education methods, needs, target audience
- Develop checklists for:
  - construction site inspection
  - BMP inspection
  - plan review
- Provide training to all staff on IDDE
  - include investigative procedures
Erosion Control Inspection Notice

Permit No.: _____

Type of Inspection: Routine weekly

Subdivision Name: _____

City Project No.: _____

Address: _____

Owner/Contractor: _____

Telephone No.: _____

☐ Perimeter protection ☐ Trash containment ☐ Tree protection

☐ Site entrance ☐ Concrete washout ☐ Pond(s)

☐ Inlet protection ☐ Dewatering ☐ ________________

☐ Street condition ☐ Ditch checks ☐ ________________

☐ Stock piles ☐ Sediment trap ☐ ________________

☐ Soil stabilization ☐ Wetland protection ☐ ________________

Is site active? Yes ☐ No ☐ _____

Comments:

____________________

Inspected by: Eric Raatz

Phone: 763-717-2720
PHASE I – ST. PAUL & MPLS.

- Permit requirements
  - Storm sewer system management
  - Prohibited discharges
  - Construction activities
  - Post-construction controls
  - Public Education
  - Street sweeping
  - Pesticide and fertilizer management
  - Stormwater Monitoring
EPA vs MPCA Audit

- Random selection
- EPA contractor leads audit (PG Env.)
- Comprehensive audit with focused areas
- Field component
- Little advance notice
NOTIFICATION

- June 5 notification phone call
- June 11 planning conference call
- June 23-25 Audit
NOW WHAT?

- Gather documents
  - annual reports
  - Stormwater Management Plan
  - Monitoring reports
  - record of inspections
  - ordinance(s)
  - training documentation
  - construction site inspection records
LOGISTICS

- Private and public construction projects
- City owned facilities
- Stormwater ponds
- Staff from multiple departments
- Meeting locations and transportation
EPA IS HERE!

- **EPA team**
  - 3 EPA staff, Region 5 Chicago
  - 2 staff from PG Environmental
  - 3 MPCA staff

- **City’s team**
  - PW, Parks & DSI (Building Inspection)
  - Capitol Region Watershed District (monitoring program)
AUDIT FORMAT

- Program Management
  - Stormwater Management Plan
  - Annual Reports

- Focus Areas
  - Construction sites - erosion control, housekeeping
  - Illicit Discharges
  - Structural Controls – raingardens, ponds, infiltration BMPs
  - Stormwater Testing/Monitoring

- Field visits
  - Public and private construction sites
  - City-owned facilities
  - Right-of-Way Activities
# Agenda for MS4 Program Evaluation

of St. Paul, MN

June 23 - 25, 2009

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Team 1 Program/Agenda Item</th>
<th>Team 2 Program/Agenda Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuesday</td>
<td>12:30 pm - 1:00 pm</td>
<td>Kick-off Meeting (900 CHA) (Anne Weber, Bruce Elder, Phil Belfiori)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1:30 pm - 1:30 pm</td>
<td>Program Management Overview (900 CHA) (AW, BE, PB)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1:30 pm - 4:30 pm</td>
<td>Structural Controls/Fac Op &amp; QC/Removed Substances (Office) (700 CHA) (AW, BE, Shawn O’Keefe)</td>
<td>Areas of New Development or Construction - Erosion and Sediment Control (Office) (900 CHA &amp; DSI) (Dan Haak, PB, Larry Langs, Tom Beach)</td>
</tr>
<tr>
<td></td>
<td>4:30 pm - 5:00 pm</td>
<td>Recap and Logistics for Tuesday (900 CHA) (AW, BE, PB)</td>
<td></td>
</tr>
<tr>
<td>Wednesday</td>
<td>8:00 am - 12:00 am</td>
<td>Illicit Discharges and Improper Disposal (Office) (700 CHA) (AW, BE)</td>
<td>DSI - Areas of New Devel or Construction - Erosion and Sediment Control (Field) (PB, Inspectors)</td>
</tr>
<tr>
<td></td>
<td>12 - 1 pm</td>
<td>Lunch Break</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1:00 pm - 4:00 pm</td>
<td>Structural Controls/Illicit Discharges and Improper Disposal (Field) (AW, BE, Shawn O'Keefe, Pat Cahanes)</td>
<td>PW Streets - Areas of New Dev or Construction - Erosion and Sediment Control (Field) (Mark Finken, PB)</td>
</tr>
<tr>
<td></td>
<td>4:00 pm - 4:30 pm</td>
<td>Recap and Logistics Planning for Wednesday (AW, BE, PB)</td>
<td></td>
</tr>
<tr>
<td>Thursday</td>
<td>8:00 am - 10:00 am</td>
<td>Monitoring (Office) (700 CHA) (AW, BE)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10:00 am - 10:30 pm</td>
<td>Open Period for Additional Activities 1 (700 CHA) (AW, BE)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12 - 1 pm</td>
<td>Lunch Break</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1:00 pm - 2:00 pm</td>
<td>Closing Conference 2 (900 CHA) (AW, BE, PB, Dan Haak)</td>
<td></td>
</tr>
</tbody>
</table>

---

1 Open Period – This time slot will be used as necessary for follow-up activities, additional discussion, or records reviews.

2 The City is encouraged to invite representatives from all applicable organizational divisions/departments.
AUDIT WRAP-UP

- Closing meeting: summary of findings
- Official report in writing
  - 8 months later
  - positive comments
  - highlighted program deficiencies
  - recommendations for improvement
- City given 15 calendar days to respond.
  Requested and received a 15 day extension.
CHANGES RECOMMENDED

- Stormwater Management Plan & Annual Reports
  - Identify City Department responsible for each element of the plan
  - Identify budget and performance measures for each element (use as a planning document)
  - Develop iterative process for ongoing improvement
CHANGES RECOMMENDED

- Erosion Control and Illicit Discharges
  - Inspector Training – Building and Public Works
  - Housekeeping at maintenance yards
  - Citywide awareness (eg. Police, Fire?)

- Structural controls
  - Street Construction & Infiltration Facilities

- Monitoring
  - Use to improve program effectiveness
Street sweeper wash area
Discharge of runoff from street sweepings.
Asphalt debris pile adjacent to storm drain inlet.
Saw cutting rinse water discharging to storm drain
Discharge of equipment wash water.
Mudjacking discharge to storm drain
Mudjacking discharge to storm drain
Improper installation of silt fence (fabric ends not wrapped).
Inadequate control to prevent sediment from leaving the site.
Improperly installed and maintained storm drain inlet protection.
Drop inlet filter installed in catch basin.
Overview of street project.
Bridge project with sediment and debris on roadway.
Storm drain inlet clogged with sediment.
Bucket containing fuel filters and fuel.
Improper storage of liquid chemicals.
Debris piles without cover or controls.
Debris piles without cover or controls.
Aggregate storage adjacent to storm drain.
ST. PAUL’S RESPONSE

- Training of City Employees
  - Illicit Discharge Detection and Elimination
  - Erosion and Sediment Control Certification (MNDOT)
- Checklists and SOPs for Erosion and Sediment Control on public and private construction sites
- ROW Permits, Inspection: IDDE and ESC
- Installed BMPs at Street Maintenance, Asphalt Plant and two Park’s facilities
- Modified Annual Report and SWMP
- Parks developed a Clean Water Policy
EROSION AND SEDIMENT CONTROL FOR UTILITY PROJECT IN THE RIGHT-OF-WAY

Erosion and sediment control devices are required for any utility construction or grading project that will result in significant land disturbing activity in the public right-of-way. Sediment control practices (inlet protection and perimeter control silt fence) must be installed BEFORE any land disturbance activities begin and temporary land stabilization practices, should be installed over all temporary stockpiles on or near street daily (including plastic cover and temporary drop downs) and after work is completed over all disturbed areas not on or near the street within 7 days (including temporary seeding of spoil piles and mulching). Street and curb line should be swept daily and as-needed to prevent sediment from entering catch basins. Sediment control devices may have to be staged to provide appropriate protection as the project progresses. Listed below are some examples of sediment and erosion control devices and land stabilization practices.

SILT FENCE
Silt fence is generally used as perimeter control to keep sediment on-site and away from areas you want to protect. The most common types used are Machine-sliced and Heavy duty. In right-of-ways could be installed between top of curb and disturbed boulevard.

TEMPORARY SEEDING AND MULCHING OR PLASTIC COVER
Temporary seeding and mulching is establishment of temporary cover on all disturbed areas by seeding with fast-growing annual vegetation followed by application of straw, hydraulic mulch or other organic materials to provide a protective cover. The purpose of temporary seed and mulching is to quickly provide temporary cover that will protect the soil from erosion until establishment of permanent stabilization. Applicable areas include any topsoil stockpiles and any areas disturbed by grading activities. For areas that must be stabilized each day (located on or near the street) plastic cover should be used instead.

STORM DRAIN INLET PROTECTION
Storm drain inlet protection prevents sediment from entering a storm drain by surrounding or covering the inlet with a filtering material. This allows sediment-laden runoff to pond and settle before entering the storm drain. Several types of filters are commonly used for inlet protection, the type of filter used will depend on inlet type (curb inlet, drop inlet), slope, and amount of flow. Some commercial inlet filters are placed in front of or top of an inlet, others are placed inside the inlet and under the grate.

DAILY AND AS-NEEDED STREET SWEEPING
Street Sweeping is to clean the pavement and curb-line area on a regular basis to minimize pollutant export to receiving waters. These cleaning practices are designed to remove sediment, debris, and other pollutants from road and parking lot surfaces that are a potential source of pollution impacting urban waterways.

TEMPORARY PIPE DOWNDRAIN
A temporary pipe down drain conveys runoff down slopes or in curbs line in a pipe so that runoff will not cause erosion. Pipe down drains are installed where concentrated flow would drain onto a temporary spoil pile or disturbed slope.
Erosion and Sediment Control Worksheet

Property Address:

Inspector: Permit # (if applicable):

Inspection Date: Re-inspection Date:

Inspection Type: Size of Site:

Inspection Results:

- Sewer Inlet Protection:
  - Comments:

- Street Condition:
  - Comments:

- Rock Entrance:
  - Comments:

- Concrete Washout Area:
  - Comments:

- Silt Fence/Sediment Control:
  - Comments:

- Stock Pile Erosion Control:
  - Comments:

- Site Erosion Control:
  - Comments:

- Corrective Action:
  - Comments:
Standard Operating Procedures for Erosion and Sediment Control Complaint

1) Someone sees an erosion and sediment control issue (dirt on street, etc).
   - They should call the City Complaints Office: 651-266-8989

2) Complaint is passed on from Complaints Office to Senior Building Inspector (651-266-9021)

3) Building Inspector follows up on complaint using DSI Erosion and Sediment Control Worksheet

4) If Building Inspector determines source is from the Public Right-of-Way (ROW) or from City Construction Projects the complaint will be forwarded to the Public Works Inspectors –
   - For Private Utility Construction in ROW: 651-487-7259 (General Number for ROW Permit Section)
   - For City Construction Projects: 651-266-6081 (Street Engineering Construction Division)
   Public Works Inspector will inspect and follow up accordingly

5) First Inspection
   - DSI Erosion and Sediment Control Worksheet completed
   - If site is non-compliant: Building Inspector issues immediate verbal order, if possible, or issues a written order if no one is on site, to address situation, sets a compliance date based on the nature of the complaint, and notes details of non-compliance in Worksheet

6) Second Inspection
   - Building Inspector Conducts 2nd inspection of site after compliance date
   - 2nd DSI Erosion and Sediment Control Worksheet completed
   - If continued non-compliance: Building Inspector issues written orders, sets a new compliance date based on the nature of the complaint, and notes details of non-compliance in Worksheet

7) Third Inspection
   - Building Inspector Conducts 3rd inspection of site after compliance date
   - 3rd DSI Erosion and Sediment Control Worksheet completed
   - If continued non-compliance, proceed with stopping construction work at the site, or submitting the violation to the City Attorney for potential prosecution, or pursue abatement if sediment crosses boundary of the site and project is greater than 1 acre.
Rain garden channel construction at Parks facility
Rain garden construction at Parks facility
ST PAUL LESSONS LEARNED

- Citywide permit, not PW or Sewer permit
  - Involve Parks, Building Dept, Planning Dept
- Training – Erosion Control & IDDE
- Value of sound Right-of-Way Control
- Good preparation for the City for 2nd NPDES permit negotiations (recently issued)
- Established Water Resources Work Group
SUMMARY

- Audit can be a positive experience
- Gauge how your program is progressing
- Understand more accurately what is expected for compliance
- Clarify uncertainties & make adjustments
- Helps MPCA understand the differences and unique situations of each MS4
- Build communication with agency
QUESTIONS

- Bruce Elder  bruce.elder@ci.stpaul.mn.us
- Jim Hafner  jhafner@ci.blaine.mn.us