Metro Nashville
Stormwater Control Measures
Inspection and Maintenance
Program Overview and Lessons Learned
Agenda

• Brief History of SCM Regulations in Nashville
• Importance of Post Construction Stormwater Control Measure (SCM) Maintenance
• Metro Nashville’s Current Program to Regulate Stormwater Control Measure Maintenance
• Lessons Learned
History of SCM Regulations in Nashville

• The first SCM with Maintenance Agreement on Record was in 1979. (Water Quantity Only)
• In the late 1990’s New Regulations required to treat post-construction Water Quality.
History of SCM Regulations in Nashville

• Due to the ever-changing regulations, Metro Nashville has many different types of SCMs.
  – Dry Detention Ponds
  – Proprietary Water Quality Devices (Many different manufacturers)
  – Wet Ponds
  – Bioretention
  – Pervious Pavement/Pavers
  – Water Quality/Grass Swales
History of SCM Regulations in Nashville

• SCMs took off in the early 2000’s when grading permit regulations changed significantly.
• Started promoting use of Low Impact Design (LID) SCMs in regulation revisions in 2007.
• Started Requiring owner inspection/reporting in 2007 regulations.
• Use of LID SCMs became mandatory in 2016.
Importance of Post-construction SCM Maintenance

• Now Have over 5,100 SCMs (Add about 50-70 per month)
Importance of Post Construction SCM Maintenance

- Over 2,000 within watersheds, listed as being impaired for sedimentation.
Importance of Post Construction SCM Maintenance

• If these structures are not maintained, they may be bypassing with little to no treatment.
Nashville’s Program for SCM Inspection & Maintenance

• 2 Main Components
  – Metro-owned SCMs (560 structures)
  – Privately-owned SCMs (4,540 Structures)
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• Metro-owned SCM structures
  – Have MOUs with various departments requiring them to do the necessary maintenance.
  – MWS inspects all Annually and provide a summary report of maintenance requirements to each department.
  – Continual coordination with other departments to ensure maintenance is performed.
Nashville’s Program for SCM Inspection & Maintenance

• Metro-owned SCM structures
  – 14 Different Departments
Nashville’s Program for SCM Inspection & Maintenance

• Metro-owned SCM structures
  – 14 Different Departments
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• Privately-owned SCM structures (4,540)
  – Require Owner-Submitted Inspection and Maintenance Reports (after 2007).
  – Perform inspections and coordination (Enforcement) to require owners to perform necessary maintenance.
Nashville’s Program for SCM Inspection & Maintenance

• SCM Owner-submitted Annual Reports
  – One Staff Member (Howard Jackson) overseeing this process
  – Due July 1st Each Year
  – Should be on checklist in Maintenance Agreement
  – Should list what site it is for (Grading Permit #)
  – Should list maintenance work performed
  – Should be filled out for all SCMs on the site
Nashville’s Program for SCM Inspection & Maintenance

• SCM Owner-submitted Annual Reports
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- SCM Owner Annual Report Actualities
  - Low participation rate (less than 1/3)
  - A variety of formats submitted
  - Many do not include photographs or notes on maintenance records
  - Many don’t list Grading Permit Tracking #
  - Only submitted for 1 SCM on property that has many other SCMs
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• SCM Owner Annual Report Actualities
Nashville’s Program for SCM Inspection & Maintenance

- SCM Owner Annual Report Actualities

To Whom It May Concern,

Our annual inspection found some washout in our dry pond that needs to be addressed. We are reaching out to some of the provided maintenance companies and will have all repairs completed within 90 days.

Regards,
Nashville’s Program for SCM Inspection & Maintenance

- SCM Annual Reporting Improvements
  - Develop a new form that can be filled out (1-page) for the entire site (all SCMs)
  - Create an online mapping system that allows users to update each structure.
  - Send out routine public education mail-outs or posts on social media informing owners of responsibilities.
Nashville’s Program for SCM Inspection & Maintenance

• SCM Annual Reporting Improvements
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• SCM Annual Reporting Improvements
Nashville’s Program for SCM Inspection & Maintenance

• Routine inspections and follow-up by MWS Staff for privately-owned SCMs
  – Majority of our resources are dedicated as a program to inspecting and following up.
  – Internal program goal to inspect and follow-up with all privately-owned SCMs once/3 years.
  – Inspection is easy, following-up/requiring maintenance is the challenging aspect.
Nashville’s Program for SCM Inspection & Maintenance

• Routine inspections and follow-up by MWS Staff for privately-owned SCMs
  – Began staffing up resources in 2017:
    • Liz Stienstraw – SCM Enforcement Compliance – (County)
    • Kalee Hotchkiss – Metro/Downtown SCM inspection
    • Jessica Bell – SCM Inspection (West)
    • Matthew Lockhart - SCM Inspection (East)
Nashville’s Program for SCM Inspection & Maintenance

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Stormwater Control Measures (SCM)

What is Bioretention?

A bioretention cell, or rain garden, is a device that gradually adds and spreads water to reduce and control flow of stormwater and prevent erosion problems.

Maintaining and Inspecting Your Stormwater Control Measure

Property owners are responsible for inspecting and maintaining SCMs on their property. A maintenance and inspection document for your SCM is included with your property deed. These documents are available through Metro Nashville Register of Deeds.

Typical Inspection and Maintenance Concerns Include:

- Observe the SCM, does the grass soil look healthy? Is the soil dry? Does the mulch or stone need to be replaced? If so, make sure it is done correctly and properly.
- Inspect for cracks or holes in the SCM.
- Inspect for drainage issues and excess water around the SCM.

How long does it take to fill? Is the bioretention system holding stormwater effectively? Is the grass healthy and growing? Is there excess water accumulating around the SCM?

If maintenance needs are identified during the inspection, ensure that it is performed in a timely manner to prevent legal problems from occurring in the future.
Nashville’s Program for SCM Inspection & Maintenance

- Routine inspections and follow-up by MWS Staff for privately-owned SCMs
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- Enforcement actions
Nashville’s Program for SCM Inspection & Maintenance

• Successes of the SCM inspection program
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Nashville’s Program for SCM Inspection & Maintenance

• Lessons Learned from Nashville’s SCM program
  – Inspection is easy, follow-up is challenging
  – LID practices require frequent maintenance
  – Need to provide QA/QC back to Engineers to promote low-maintenance design
  – SCMs don’t always look like you expect, but at the end of the day, are they functioning
Nashville’s Program for SCM Inspection & Maintenance

• Lessons Learned from Nashville’s SCM program
  – Functionality vs. Aesthetics
  • Bioretention Basin – Not Functioning
Nashville’s Program for SCM Inspection & Maintenance

• Lessons Learned from Nashville’s SCM program
  – Functionality vs. Aesthetics
  • Bioretention Basin – Not Pretty, but functioning
Nashville’s Program for SCM Inspection & Maintenance

• Lessons Learned from Nashville’s SCM program
  – Property ownership/responsibility issues are sometimes challenging with Residential SCMs.
  – Owner education is extremely important.
  – Relying on owner-submitted annual reports has not proven to be effective/efficient approach.
  – Being on the ground doing inspections talking to people, sending notices has been the most effective approach to achieve maintenance.
Nashville’s Program for SCM Inspection & Maintenance

• Lessons Learned from Nashville’s SCM program
  – You never know what you are going to find
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Questions

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