Maintenance of Commercial Stormwater Practices

Amy Brennan, *Chagrin River Watershed Partners, Inc.*
Dave Ritter, *Northeast Ohio Regional Sewer District*
Dan Bogoevski, *Ohio EPA*

October 1, 2013

Why Are We Here?

- Urbanized communities are required to track, inventory and ensure their maintenance and functionality.
  - Typically rely on property owners to provide the required maintenance for these practices.
  - Required to pass local codes to ensure the proper maintenance and functionality of these practices.

Why You?

- Landscapers and lawn care professionals are onsite usually once per week and may be doing part of the work already.
- The maintenance requirements match the services of the landscape professionals.
- Landscape professionals service several sites.

What You Can Expect?

- Long Term Maintenance Agreement and Plan for sites less than 5 years old.
- Being the middle man between the community and the property owner.
- Education materials, inspection and maintenance schedule.
- Working with professional engineers, stormwater professionals and other community employees.
- Each community will be different or have different requirements and/or opinions.

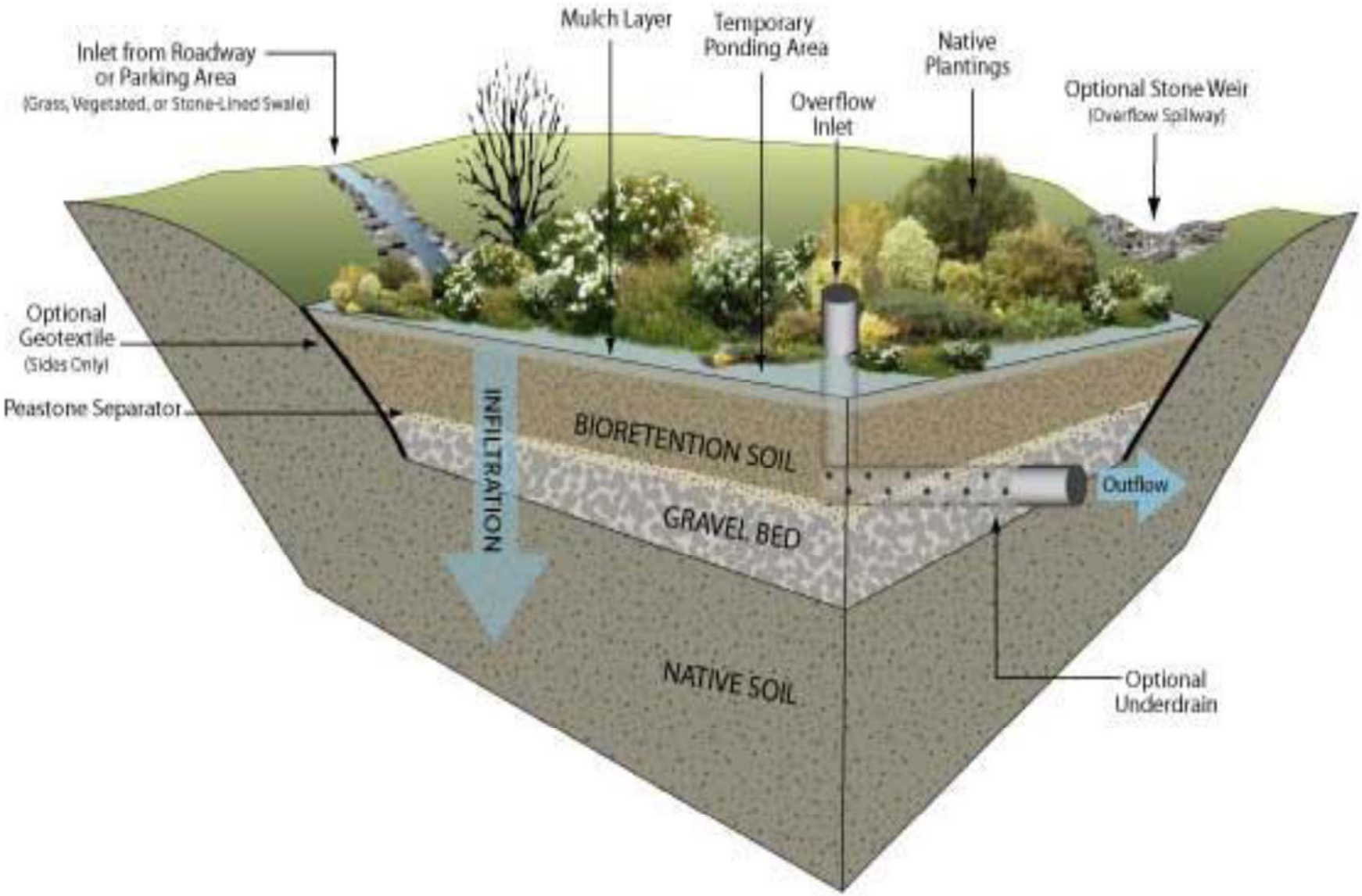
Why Maintenance?

- Maintenance is inevitable.
- To ensure that the stormwater management practice will function or perform as it was designed or constructed.
- Observe deteriorating infrastructure to prevent issues before they happen.
- Transfer trapped stormwater pollutants.
- **The better it performs the more maintenance is required.**

Types of Stormwater Control Measures

- Bioretention
- Stormwater Ponds
  - Dry Basins
  - Wet Basins
  - Constructed Wetlands
- Permeable Pavements

Bioretention




SPEED LIMIT
35


QUICK
HONEY
STOP

Monthly Routine Maintenance:

- Clean litter, debris or sediment
- Erosion or scouring of mulch or pretreatment and inlet areas
- Look at outlet and keep clear
- If there is a cleanout, look down the pipe to see if there is water
- Watering plants if needed (first year)

Annual Routine Maintenance:

- Inspect mulch for debris and sediment accumulation and remove if needed
- Replace or add mulch, if needed
- Monitor for plants, replace dead and diseased, prune or trim if needed
- Thoroughly inspect the outlet structure and pipes for deterioration, spalling, corrosion etc.

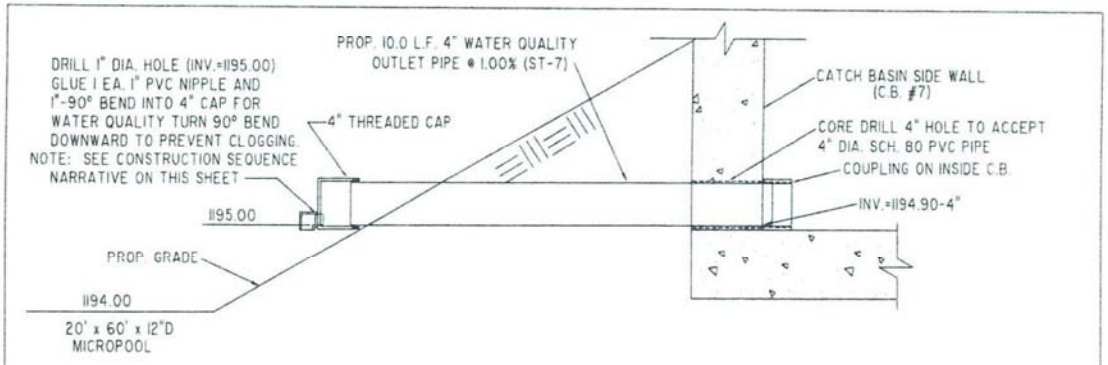
Dry Basins

Monthly Routine Maintenance:

- Mow embankment to prevent woody vegetation.
- Inspect WQ orifice, principle and emergency spillway and outlet structure.
- Repair any scouring, erosion in low flow channel, sides or embankment.
- Reseed or stabilize bare areas.
- Remove vegetation at least 10 feet away from outlet structure
- Remove any debris or litter.

Annual Routine Maintenance:

- Inspect forebays & micropools for sediment accumulation and dredge, if needed.
- Monitor for invasive plants
- Thoroughly inspect the outlet structure and pipes for deterioration, spalling, corrosion etc.
- Check outfall and rock pad for vegetation and/or sediment accumulation.



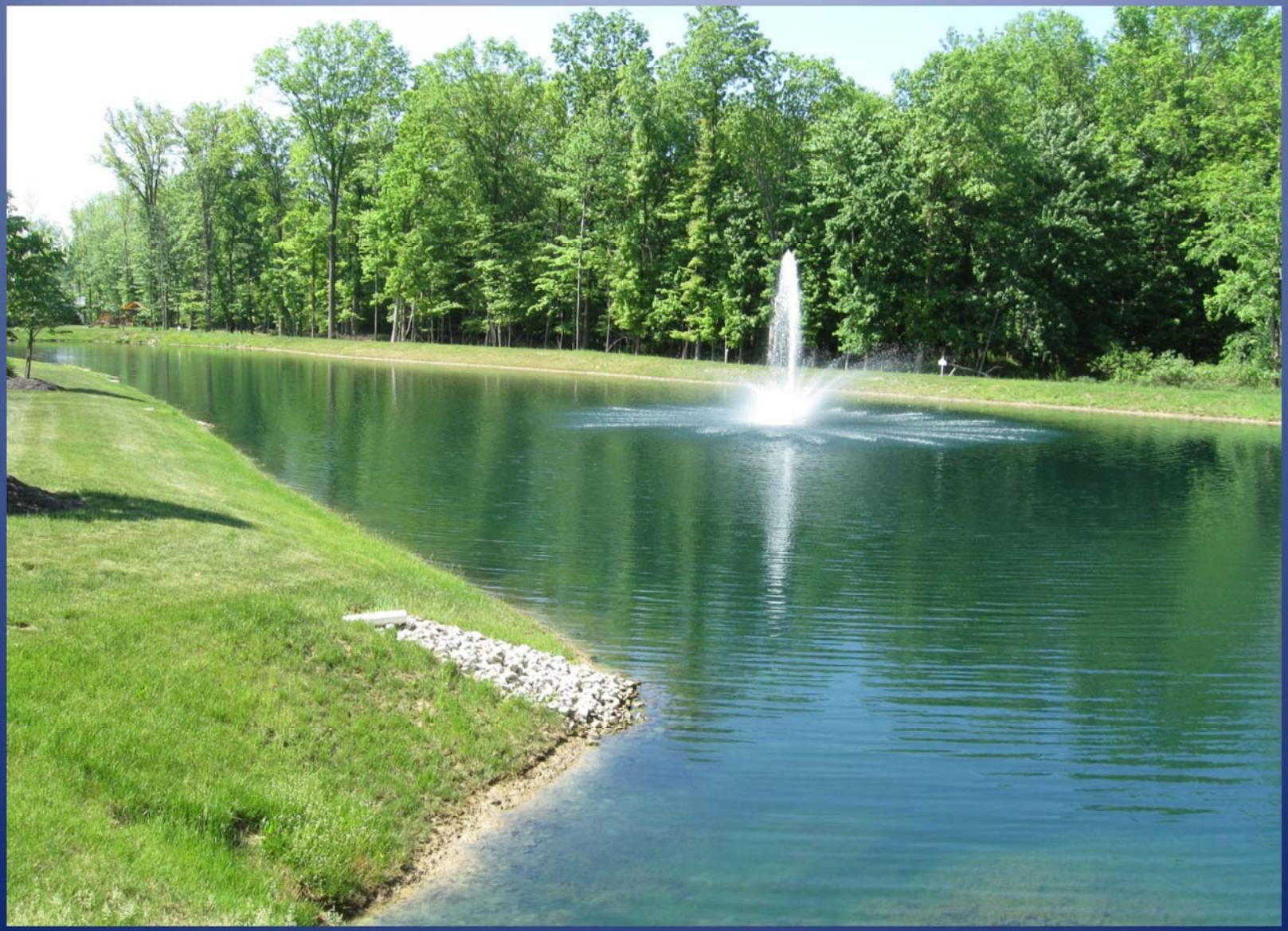
WATER QUALITY OUTLET (ST-7) DETAIL

C.B. #7

NO SCALE

* NOTE:

Wet Basins



Monthly Routine Maintenance:

- Mow embankment to prevent woody vegetation.
- Inspect WQ orifice, principle and emergency spillway and outlet structure.
- Repair any scouring or erosion on sides or embankment.
- Reseed or stabilize bare areas.
- Remove vegetation at least 10 feet away from outlet structure
- Remove any debris or litter.

Annual Routine Maintenance:

- Inspect forebays (if applicable) for sediment accumulation and dredge, if needed.
- Monitor for invasive plants
- Check pond aeration system
- Thoroughly inspect the outlet structure and pipes for deterioration, spalling, corrosion etc.
- Check outfall and rock pad for vegetation and/or sediment accumulation.

Wetland Basins

- **Constructed Wetlands**
- Extended Dry Detention Wetland
- Pocket wetland
- Wet swale (linear wetland)
- Submerged Gravel Wetland

Monthly Routine Maintenance:

- Mow embankment to prevent woody vegetation.
- Inspect WQ orifice, principle and emergency spillway and outlet structure.
- Repair any scouring, erosion in low flow channel, sides or embankment.
- Reseed or stabilize bare areas.
- Remove vegetation at least 10 feet away from outlet structure
- Remove any debris or litter.

Annual Routine Maintenance:

- Inspect forebays & micropools for sediment accumulation and dredge, if needed.
- Monitor for invasive plants
- Thoroughly inspect the outlet structure and pipes for deterioration, spalling, corrosion etc.
- Check outfall and rock pad for vegetation and/or sediment accumulation.


DUMP NO WASTE DRAINS TO WATER

Permeable Pavement

Figure 2. Types of permeable pavement

Concrete & Asphalt

- Sweep 2-4x per year with a vacuum street sweeper.
- Stabilize surrounding areas
- Inspect pavement integrity and at transitions. Is raveling excessive?
- Is water ponding in any places?
- Winter salt application and snow piling?

Pavers and Grids

- Vacuum 2-4x per year or follow manufacture's instructions.
- Stabilize surrounding areas
- Inspect paver integrity and at transitions. Repair any settling.
- Are weeds growing between spaces or is overseeding required? Do not pull weeds, flame or spray.
- Is water ponding in any places?
- If snow plowing, is rubber blade required or have any pavers been lifted?

Vacuum Sweepers


QUESTIONS?