Establishing and Maintaining Stormwater BMP's

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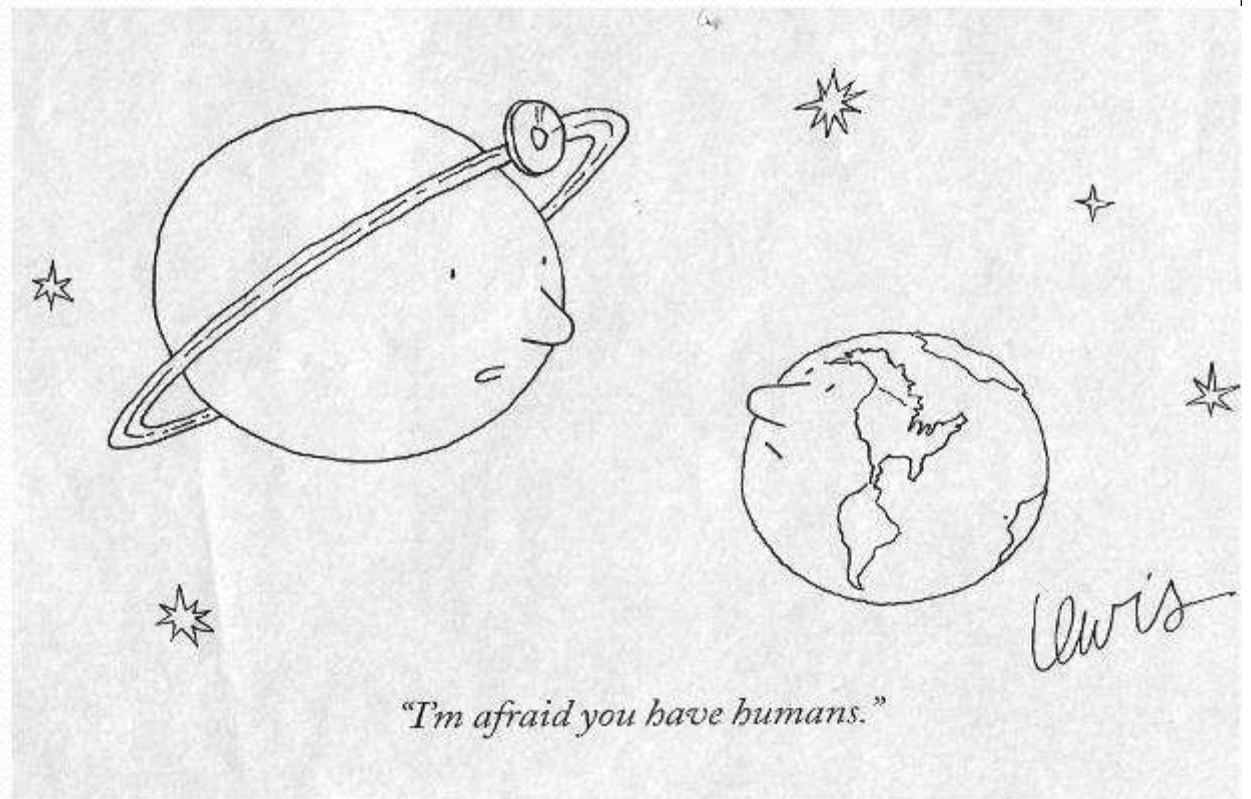
Attributes of Natural Communities

- Cycle resources
- Hold resources in reach of new life

Sustainable Development

- A pattern of resource use that meets human needs while preserving the environment.

"I'm afraid you have humans."

BMP's Mitigating Impacts

- Emulate wetland function

Or mesic prairie function

gardens

Maintenance is determined by Installation method

- Seeded

- Container or plug planting

Seeded BMP

- Timing is critical- November to March

High mow all seeded areas during first growing season.

- **High mow** or trim back with string trimmers when height reaches 8 to 12 Inches or monthly.
- **Reducing reseeding.** Most weeds reproduce primarily from seeds, and the seeds of some weeds can remain viable when buried in the soil for decades

Spot Spray to control perennial weeds

- Spray targeted weeds using low pressure to avoid drift.
- Do Not spray on windy days or when rain in forecast.

Water if drought occurs during first growing season.

- Water deep once per week if practical during drought

- Overseed during first dormant season if watering is not possible or economically viable.

Overseed any bare spots at the end of the first growing season

Clean up previous seasons plant residue

- Mow off and remove old growth at the beginning of the growing season.

Plug or Container plantings

Water during establishment

- Water the first 3 to 4 weeks until plant material is rooted in if there is not adequate rainfall

- Trees and shrubs will take longer to root in 7 to 8 weeks

Perennial weeds

- Inspect and spot spray perennial weeds on a 2 week to 1 month interval.

Perennial Weeds

Johnson Grass

Canada Thistle

Serecea lespedeza

Annual weeds

- **Mulching.** Mulch that's more than 2 inches thick can deprive most weed seeds of the light they need to germinate and grow.

- **Timing.** Early spring before weed seed germinates.

- **Clip**, Trim, Pull or Hoe Annual weeds on a two week to one month interval

Annual Weeds

Foxtail

Common Ragweed

Sweet Clover

Drought

- Provide supplemental watering if a droughty period occurs during the first growing season
- Avoid shallow watering
- Water equivalent to one inch per week.

Clean-up

- Cut back and remove vegetation at the start of the growing season

Replacements

- Replace any dead or missing vegetation at the start of the growing season.
- Weedy species will move any to any void you leave.

Stormwater treatment

Fire

- **Flaming.** Flamers are portable gas torches that produce heat intense enough to boil the water in plant cells. Killing a weed requires heat for only 1/10 of a second.

Maintenance of BMP's

- Maintenance is high during the establishment period
  - Weed control
  - Irrigation if rainfall is lacking
  - Monitor for erosion or sedimentation
  - Establishment maintenance is similar to establishing a butterfly garden or perennial bed with the exception of preventing overflows from becoming clogged.

On going maintenance

- Rain gardens used as an ornamental feature should be inspected weekly during the growing season as a function of regular landscape maintenance.

- BMP's used for function primarily should be inspected monthly and after large rain events or if drought conditions exist.

Inspection

- Inspection should include
    - Plant health
    - Weed problems
    - Minor erosion
    - Outflow structure and integrity
    - Litter
    - Deal with small problems before they get out of hand

On going maintenance

- Weed control
  - Maintain a 2 to 3" deep mulch layer
  - Spot spray with a spray shield on the spray wand.
  - Hand pull weed and smooth out the mulch
  - Hoe weeds and smooth out mulch

  Woody encroachment should be cut to ground level and the cut stubs should be treated with a 20% glyphosate solution.

Seasonal maintenance

- Mow or cut back vegetation in late winter or early spring
- Replace any dead plant material
- Mulch after spring clean up and again in fall

Alternate mitigation for Impervious surface – green roofs

Green Roofs

Questions???

Bioretension with benefits