Urban BMP Climate Priority Discussion

Ag sector Approach:

Combined Most Implemented x Most Effective x Feasibility. Selected the following:

- Grass Buffers
- Cover Crops
- High Res Tillage
- Conservation Tillage
- Manure Incorporation

Stormwater Method to Begin Discussion:

- Analyzed change in implementation between1985-2023, from CAST-19 in order to establish approximation of top 20 “most implemented”
- Used CAST to also establish the top 20 most efficient practices, based on N efficiency per reported unit
- Rankings do not consider the transition from individual practices to performance standard curves. In other words, some Runoff Reduction acres are likely Bioretentions, and Infiltration practices, etc.
- Practices colored Green appear on both lists. Practices in Yellow likely would be if not for the Performance Curves Split.

Top 20 Most Implemented:

- Urban Nutrient Management
- Forest Harvesting Practices
- Wet Ponds & Wetlands
- Storm Water Treatment Performance Standard
- Erosion and Sediment Control
- Septic Connections
- Runoff Reduction Performance Standard
- Dry Ponds
- Extended Dry Ponds
- Urban Shoreline Management
- Septic Denitrification
- Urban Stream Restoration
- Septic Pumping
- BioRetention

- Storm Drain Cleanout
- Septic Secondary Treatment
- Infiltration Practices
- Street Sweeping
- Filtering Practices
- Urban Forest Planting

Top 20 Most Effective

- Runoff Reduction Performance Standard
- Urban Forest Buffer
- Bioswale
- Infiltration Practices
- Urban Forest Planting
- Septic Denitrification
- BioRetention
- Forest Harvesting Practices
- Septic Connections
- Permeable Pavement
- Impervious Surface Reduction
- Conservation Landscaping Practices
- Storm Water Treatment Performance Standard
- Filtering Practices
- Septic Effluent
- Vegetated Open Channel
- Septic Secondary Treatment
- Urban Nutrient Management
- Floating Treatment Wetlands
- Street Sweeping

Using this approach the top Priority BMPs would be:

1. Urban Nutrient Management
2. Stormwater Treatment Practices
3. Runoff Reduction Practices
4. Urban Forest Harvesting
5. Urban Forest Planting
6. Street Sweeping
7. Septic Denitrification

Key Questions:

- How do we handle the performance curves (Runoff Reduction and Stormwater Treatment) – do we need to recommend specific practices for modeling purposes, or should we be using the curves since it is the recommended reporting mechanism?
    - Nutrient removal efficiency for all of these practices is determined through a series of curves whereby the removal rate for each individual retrofit project is determined based on the amount of runoff it treats and the degree of runoff reduction it provides.
    - Top Individual Practices: Bioretention, Wet Ponds & Wetlands, Infiltration Practices, Filtering Practices, Extended Detention
- Does the workgroup agree that these are an accurate reflection of the highest priority practices, for which we need to understand the impacts of future hydrology on nutrient removal performance?
    - Stream Restoration doesn't make the initial list because the N efficiency isn't high on a per linear foot basis
    - UNM is inflated by MD's state-wide credit, but would likely not make the Top 20 as 3 states don't even report the practice.
    - Only 1 tree BMP is considered (forest planting)
- Are there feasibility hurdles with modeling impacts on each of the priority BMPs?
    - Forest Planting's benefits are simulated based on changes in a change in land use loading rate from the pre-existing land-use to a forested land use
    - Stream restoration is simulated based on a combination of bank erosion rate monitoring, floodplain modeling, and hyporheic exchange indicators
    - Septic disconnections are also based on presumed loading rates based on populations on septic.

Proposed Alternative List:

- Runoff Reduction Practices (Or: Bioretention & Infiltration)
- Stormwater Treatment Practices (Or: Filtering, Wet Ponds, Wetlands, Extended Detention)
- Urban Forest Planting
- Urban Forest Buffers
- Stream Restoration
- Septic Disconnection
- Open Vegetated Channel