

IDENTIFYING BEST MANAGEMENT PRACTICES TO IMPROVE STORM WATER REUSE IRRIGATION SYSTEMS IN CARVER COUNTY

RESILIENT COMMUNITIES PROJECT

About the Partner

Carver County is located southwest of the Twin Cities metro, with the City of Chaska as its county seat.



The Carver County Water Management Organization (WMO) is responsible for managing lakes, rivers, and wetlands within its boundaries. Responsibilities include planning, funding, regulation, education, and implementing the County's water management plan. The WMO's area covers 320 square miles, includes 35 lakes larger than 10 acres, and 365 miles of stream, and includes six watersheds.

Project Description

Storm water reuse for irrigation has been used in Carver County as an effective best management practice (BMP) to meet volume reduction requirements for new development. These sites have typically used turf grass and a narrow range of irrigation rates. Unfortunately, developers often propose high irrigation rates on turf grass, and many areas are becoming waterlogged.

Carver County WMO would like to understand the irrigation rates that different vegetation palates can handle and how these compare to turf grass under varying irrigation rates. Examples of possible vegetation to test and understand are: MnDOT Mesic Mix, Short Sedge Meadow, Pollinator Mix (Wet or Mesic or both), Upland Prairie Mix, and Wet Mesic Prairie Mix.

Ultimately, Carver County WMO would like to offer better guidance to developers about how to shift from turf grass to more resilient types of vegetation that can tolerate both long periods of drought and excessive water.

Key Issues, Questions, and Ideas to Explore

1. What does current research or practice suggest about best management practices for irrigation in clay soils similar to those found in Carver County?
2. How do different types of vegetation affect infiltration and overland runoff of storm water reused for irrigation?
3. How do different irrigation rates affect infiltration and overland runoff of reused storm water?

How Student Work Will Be Used to Build Community Resilience

- By suggesting environmentally sustainable practices that will influence how guidance documents are developed and used by WMO staff, developers, and engineers when designing storm water reuse systems in Carver County, and potentially throughout the Twin Cities Metro Area.

Potential Community Partners or Stakeholders

- Developers
- Property owners who have irrigated areas that are too wet
- Home owner associations who run stormwater reuse systems
- Other local government units with heavy clay soils

Existing Plans & Reports

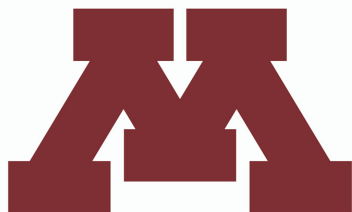
- 2020 Reuse Roundtable notes
- Carver County topsoil test results
- Stormwater Reuse Plans

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