



Alternative Side Inlets: Promising for Farmers *and* for Water Quality

November 2014 Snapshots



Side inlets are a commonly used tool on the agricultural landscape that help control erosion on farm fields while protecting drainage systems. Over the past five years, the Minnesota Board of Water and Soil Resources (BWSR), in partnership with the University of Minnesota, Minnesota Department of Agriculture, and four local government agencies, has studied whether alternative side inlet designs might be a better way to help farmers achieve the surface water drainage they need while keeping soil and nutrients on their land.

The *Side Inlets to Improve Water Quality* study, made possible through an Environmental Protection Agency Section 319 grant and \$130,000 from the Clean Water Fund, took a hard look at whether side inlets could be designed in a way that minimizes their impact on crop production while increasing benefits to local water quality. The results are encouraging.



*Pictured top: Before heading out into the field, attendees of the Mower County Field Demonstration Day get a project overview.
Pictured bottom: BWSR's Tim Gillette (second from right) talks about the alternative side inlets.*

The project developed a method for targeting the best locations for installing side inlets using Geographic Information Systems and LiDAR data. It also studied the impact of the alternative designs on downstream hydrology (peak flows). Field experiments were done at the University of Minnesota's Southwest Research and Outreach Center in Lamberton to make sure that the alternative side inlets helped achieve the projected water quality benefits. Finally, four demonstration field days were scheduled in different parts of the state. Farmers, contractors, engineers, drainage professionals, and local government conservation staff gathered at events hosted by the Mower Soil and Water Conservation District, Red Lake Soil and Water Conservation District, Nicollet Soil and Water Conservation District, and Hawk Creek Watershed Project located in Renville County.

Reactions from attendees to the alternative side inlet designs were quite positive overall. One of the benefits for producers is that traditional side inlets are located up in the fields. These alternative side inlets are on the field edge, which means that farmers don't need to worry about maneuvering around them. The water detention at the inlets helps soil settle out, and farmers can push it back onto the field for their crops instead of losing it into drainage ditches and downstream surface waters.

"It's really a win-win situation, and a step forward for water quality," project manager and BWSR Conservation Drainage

Engineer Tim Gillette said. "Soil and nutrients stay on the field, which benefits farmers, and out of the drainage ditches, which helps nearby lakes, rivers and streams."