

Feedlot fixes aim to improve water quality



A manure pit and a roofed storage structure are part of a finished RCPP project in Rice County. **Photo Credit:** Nathan Pesta, DGA Engineering

BWSR-NRCS Regional Conservation Partnership Project funds manure storage facilities and other upgrades benefiting water quality

With \$3.2 million in improvements to eight feedlots in southeastern Minnesota, work made possible through a state-federal partnership will reduce runoff to the Mississippi River.

The Lower Mississippi River Feedlot Management in Minnesota Regional Conservation Partnership Project (RCPP) supported eight agricultural waste system projects within an 11-county area in southeastern Minnesota, and helped producers develop eight Comprehensive Nutrient Management Plans through the USDA's Natural Resources Conservation Service (NRCS). Program participation was voluntary. Work concluded in late August.

Funded jointly by the Minnesota Board of Water and Soil Resources (BWSR) and

NRCS, RCPP provided a 90% cost-share to producers to install feedlot upgrades; landowners contributed a 10% match. BWSR's \$1.6 million contribution to the project's \$3.2 million budget includes a \$300,000 Clean Water Fund grant, with the general fund covering the balance. NRCS provided assistance via the Environmental Quality Incentives Program (EQIP). The majority of project funds (\$2.59 million) went directly to landowners, with the remaining funds covering staff time for technical assistance and grants administration.

Most projects supported by RCPP were manure storage facilities. Other RCPP-funded practices included filter strips.

"With any manure storage facility, there's an impact beyond the farmyard,"

said Beau Kennedy, Goodhue Soil and Water Conservation District (SWCD) manager. "It affects hundreds and sometimes thousands of acres of cropland. If we can get the manure applied at the right time and rate, there's an opportunity to positively impact many acres and improve water quality."

Kennedy said long-term manure storage can improve road safety by reducing manure hauling frequency. Small dairy operations often need to haul manure





Manure is pushed from the barn to the storage area known as a stacking slab in this finished RCPP project in Goodhue County. Manure storage projects installed using RCPP funding generally hold between 12-14 months of manure storage, eliminating the need for daily hauling.

Photo Credit: Southeast Minnesota Technical Service Area Joint Powers Board

daily. Projects installed with RCPP funding provide between 12 and 14 months of manure storage.

“On a typical dairy site, the biggest issue is often manure storage,” Kennedy said. “The (RCPP) funding could really help a small or medium-sized operation with manure storage so they don’t have to concentrate on daily hauling.”

A committee organized by Technical Services Area 7 (TSA 7) including BWSR, NRCS and SWCD staff recommended potential projects to the Southeast Minnesota Technical Service Joint Powers Board, which approved the grants to landowners. High demand prompted BWSR to earmark an additional \$520,000 from its general fund last year to help assist more landowners.

Rochester-based BWSR Board Conservationist Dave Copeland said the funding targeted southeastern Minnesota because the region has a high density of smaller dairy and beef

cattle operations located near sensitive surface and groundwater resources such as trout streams and karst topography.

“Most of the runoff from watersheds in this region feed directly into major tributaries or the main stem of the Mississippi River, most of which are impaired for bacteria, turbidity, and excess nutrients,” Copeland said. “The region is also underlain by karst geology, which is very susceptible to contamination from nitrates and bacteria sources from feedlot operations.”

Wabasha SWCD Manager Terri Peters said being able to focus on smaller operations was a rewarding aspect of the partnership. Landowners with fewer than 300 or fewer than 500 animal units (animal unit limits varied by funding source) were eligible to apply for RCPP funding. An animal unit is a measure of how much manure an animal produces. One dairy cow, for example, is 1.4 animal units.

“It’s good to help small dairies stay in business – they keep their hay in rotations, which is good for the landscape, and help reduce erosion and runoff,” Peters said. “Being able to improve an operation so it can be handed off to the next generation and building relationships with that new generation is also helpful.”

TSA 7 staff calculated pollution reduction estimates from the combined RCPP projects using the Minnesota Feedlot Annualized Runoff Model, or MINNFARM. This model was developed cooperatively by the Minnesota Pollution Control Agency and the University of Minnesota. The eight projects combined are estimated to annually reduce nitrogen by 182 pounds and phosphorus by 47 pounds.

Peters said she anticipates benefits to both surface water (water that collects above ground) and groundwater (water held underground). Wabasha County contains 18 trout

streams, which are sensitive to pollution and need to maintain cold temperatures to support trout populations.

“Pretty much every farm (in Wabasha County) leads into a trout stream,” Peters said. “There are areas where if too much manure is applied at the wrong time and there’s a significant weather event, it can cause fish kills. That’s a surface water impact we have to be concerned about. With groundwater, we have to make sure crops are taking up nutrients.”

Kennedy said the need for additional assistance with feedlot runoff concerns remains high. Goodhue County contains approximately 1,000 feedlots.

“Feedlots in general aren’t necessarily a bad thing, it’s the distance from a feedlot to an open water body that is important to note,” Kennedy said. “I hope we get the opportunity to do more of this work, because there is a need here in the southeast.”