

# BWSR-NRCS training introduces conservation engineering skills

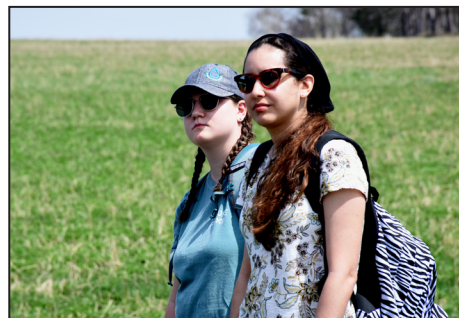


**TTCP funding is split between Clean Water Funds and federal dollars through an NRCS contribution agreement. Details about TTCP training resources are available on the [TTCP web page](#).**

**A** weeklong training designed for conservation staffers new to their positions reinforced classroom instruction with hands-on practice assessing resource concerns and weighing engineering options in the field.

Introduction to Conservation Engineering drew 21 Natural Resources Conservation Service (NRCS) and soil and water conservation district employees from throughout the state to the Brainerd area in early May. Technical staff from NRCS and the Minnesota Board of Water and Soil Resources (BWSR) shared their expertise through 17 sessions that included a focus on waterways, wetlands, watering systems, streambanks, soils and surveying.

The goal of the training was to present an overview of engineering practices and how they function,



**Top:** Trainers led discussions about potential erosion concerns and potential solutions during a May 10 field visit to a Morrison County dairy farm, part of the Introduction to Conservation Engineering training.

**Above:** Wright County-based NRCS soil conservation technician Cassidy Voeltz, left, and Cottonwood County-based NRCS soil conservation technician Kiara Tomassini listened to a discussion about water and sediment control basins. **Photo Credits:** Ann Wessel, BWSR

where to best implement them, and what skills are needed to plan them. The training serves as a confidence-booster for employees who will work with landowners, coordinate with other agency staff, and may decide to



Natural Resources  
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**VIDEO:** [NRCS Assistant State Conservation Engineer Lea Holter discusses benefits of the hands-on training.](#)



St. Paul-based NRCS Agricultural Engineer Mike Krcmarik, **left**, one of four presenters during the May 10 Morrison County field tour, and Benton County SWCD technician Megan Tritz, **right**, listened to a discussion about feedlots. **Middle**: Elk River-based NRCS Area Engineer Craig Peterson led a discussion about feedlots. **Photo Credits**: Ann Wessel, BWSR

pursue additional in-depth trainings.

“I think the important thing is to understand how engineering practices fit into addressing resource concerns for landowners,” said NRCS Assistant State Conservation Engineer Lea Holter. “It’ll give them, I think, a better foundation for when they work with landowners and understand the unique challenges and opportunities.”

On most days, the group spent mornings in the classroom and afternoons outside.

After a presentation about surveying terminology, note-

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— Lea Holter, NRCS assistant state conservation engineer



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keeping and equipment, the group spent one afternoon conducting four mock waterway surveys. The NRCS and SWCD staffers shot and recorded centerline stations, cross-sections, turning points and benchmarks using laser levels — something most

attendees had never used.

Before a Morrison County dairy farm visit, that morning’s classroom presentations covered typical resource concerns and common engineering practices used in conjunction with livestock facilities.

NRCS design engineer Mike Krcmarik’s enthusiasm for the topic was evident when he tasked attendees with overcoming obstacles to get nutrients from livestock waste (represented by a steady, unyielding stream of colorful balls) onto their fields. The “farmers” could enlist engineers and planners to help improve nutrients’ storage, timing and utilization.

That afternoon, the group toured livestock holding facilities, compared manure storage types, and discussed what sorts of concerns a landowner might have. While standing atop a water and sediment control basin



NRCS and SWCD staffers new to conservation engineering got a look at a feed storage pad during the May 10 field visit to a Morrison County dairy farm.

built to stop gully erosion in a nearby field, presenters discussed hydrology determination and project construction — topics explained in the classroom earlier.

Conservation staffers elaborated on the benefits of a training approach that combined classroom sessions and field visits.

“I am a visual learner,” said Benton County SWCD technician Megan Tritz, adding that the field visits allowed the group “to go out and actually see what projects they have done and to be able to visualize other possible practices that could be installed out there.”

Pope County-based NRCS soil conservationist Cole Montgomery commented on another station that afternoon where erosion was a resource concern: “It helped to put into perspective which erosion control practices work better for different sites and how they would fit in with the current farming direction.”

“We really want to focus on the interaction between the planners and the landowners. So it’s very important to get them out on a working farm so they can see the topography, how certain practices can fit into the operation and the landscape,” Holter said during the dairy farm visit.

One afternoon in Crow Wing County, conservation staffers dug into soils and geology of Minnesota. After an on-site overview, NRCS geologist Miranda Berge and resource soil scientist Brandon DeFoe led hands-on demonstrations, using a Giddings probe — a truck-mounted hydraulic



**Top:** The object of one classroom exercise was to guide plastic balls as they flowed from “farm headquarters” out to “cropland.”

**Bottom:** Pope County-based NRCS soil conservationist Cole Montgomery, left, and Joseph Kaseforth of the Pipestone SWCD learned how to properly shoot and label a temporary benchmark during the weeklong Introduction to Conservation Engineering. **Photo Credits:** Aaron Peter, BWSR

drill — and hand tools to extract soil samples, and then learn about texturing soils for engineering practice design.

Goodhue County-based NRCS soil conservation technician Emily Voelker commented on that segment of training: “I learned it’s important to know and dive into your area’s geological and soil information, as it varies a

ton across the state. I also learned of many resourceful apps you can use while out in the field.”

Throughout the five-day training, group exercises and icebreakers helped to build professional connections among the SWCD and NRCS attendees, whose job duties, experiences and backgrounds varied. One

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activity allowed staffers to anonymously ask trainers questions about things like job advancement and benefits. Another put them in groups for a paper airplane-building contest.

“As simple and silly as some of the activities seemed, it allowed me to very easily connect with others in the evenings and as the week went on. I developed what I would consider new friendships,” Voelker said.

Montgomery added: “It also was just enjoyable to hear about how different parts of the state function and the different types of projects that people work on in the diverse landscapes of Minnesota.”

NRCS and BWSR staff coordinated the Technical Training and Certification Program (TTCP) course, which was designed to provide high-level overviews. Attendees learned about additional TTCP training opportunities where they can hone skills specific to their job duties.