

BWSR guide offers options for groundwater protection

A guide recently released by the Minnesota Board of Water and Soil Resources (BWSR) recommends conservation practices to protect groundwater and drinking water on Minnesota farmland.

“Several years ago, a need emerged for more comprehensive information specific to groundwater and drinking water protection,” said Dave Weirens, BWSR assistant director for programs and policy. “We hope this guide will serve as a starting point for local governments looking to learn more about groundwater protection practices, and the state and federal funding available to support implementation of those practices.”

The Groundwater/Drinking Water Protection Practices for Agricultural Lands guide was developed to provide advice to local governments on a range of groundwater protection practices, programs and initiatives,



Solar installations that incorporate native plants for pollinator habitat — such as this site in Annandale — are one practice recommended by BWSR’s Groundwater/Drinking Water Protection Practices for Agricultural Lands guide. **Photo Credit:** Paul Erdmann, BWSR

focusing on public water suppliers and private well owners. Work began in 2018. The final document was published online in late March.

BWSR water programs coordinator Annie Felix-Gerth and BWSR special programs coordinator Suzanne Rhees compiled

information for the guide. Felix-Gerth said the guide aligns with an emerging transition in how conservation professionals address groundwater protection.

The guide organizes recommended conservation practices into three tiers: cropping practices with

known groundwater benefits (Tier 1), cropping system changes (Tier 2) and land use changes (Tier 3). The level of protection increases as you move from Tier 1 through Tiers 2 and 3.

“Historically, conservation programs have tended to focus mostly on two ends of the groundwater protection



BWSR’s Groundwater/Drinking Water Protection Practices for Agricultural Lands guide recommends state and federal funding programs available to landowners that support groundwater protection. These programs include the Minnesota Conservation Reserve Enhancement Program (MN CREP), **left**, the Minnesota Agricultural Water Quality Certification Program, **center**, and the Reinvest in Minnesota (RIM) Reserve program, **right**. **Photo Credits:** BWSR, Minnesota Department of Agriculture (center photo)

spectrum: best management practices applied to existing cropping systems, or land retirement,” Felix-Gerth said. “Lately, we’ve seen increasing interest among conservation professionals — including public water suppliers — in practices that transition from a system based solely on annual row crops toward one that incorporates perennials and extended crop rotations to improve water quality and soil health.”

Tier 1 covers practices that fit smoothly into a standard crop rotation, such as integrated pest management, karst sinkhole treatment and nutrient management. Tier 2 focuses on incorporating new practices such as agroforestry, cover crops, conservation crop rotation and pollinator conservation plantings. Tier 3 covers other land uses that establish native vegetation, including conservation cover, critical area planting, recreational land uses and solar farms with pollinator habitat and perennial land cover.

“This booklet fills a crucial knowledge gap by providing specific guidance for conservation partners regarding practices and programs available to aid in local drinking water protection efforts in rural Minnesota,” said Sandeep Burman, Minnesota Department of Health drinking water protection section manager, who

provided input on the guide.

Staff from the Minnesota Department of Agriculture (MDA) also reviewed the guide and provided input that informed the final version.

“This new groundwater protection guide will help support implementation of agricultural practices to protect groundwater in Minnesota,” said MDA Assistant Commissioner Whitney Place. “It provides science-based options landowners can choose that fit into their operation. We hope local government partners and landowners will use this guide to prompt water quality discussions and increase water conservation practices.”

In addition to recommending practices, the guide outlines programs available to support implementation. Featured programs include the MDA’s Minnesota Agricultural Water Quality Certification Program, MDA’s AgBMP Loan Program and BWSR’s Minnesota Conservation Reserve Enhancement Program (MN CREP). The guide highlights the USDA’s Environmental Quality Incentive Program (EQIP) and Conservation Stewardship Program (CSP) programs through the Natural Resources Conservation Service (NRCS), and its Conservation Reserve Program available through the Farm Service Agency.



Graphics and photos used in the guide illustrate multiple approaches to groundwater protection.

Graphic Credit: MDA

Scott Hanson, source water specialist for the Minnesota Rural Water Association (MRWA), also provided input on the guide. He said MRWA plans to use the guide at local meetings about wellhead protection to show the variety of practices available.

“I can see (MRWA) using it to match and stack practices that will provide a higher degree of drinking water protection,” Hanson

said. “It can also be used to target the most highly vulnerable fields in a wellhead protection area. Landowners may be able to benefit through diversification, soil health improvements and funding opportunities to offset some of the risk associated with making (land) management changes.”

The guide is available on [BWSR’s website](#).