



The DWSMA Solar Project

WHAT IS A DWSMA?

Drinking Water Supply Management Areas (DWSMAs) are the designated wellhead protection areas for public drinking water supplies. DWSMAs are clearly defined geographic areas that the Minnesota Department of Health identifies as at-risk of public water contamination. Potential sources of contamination include surface water runoff from surrounding land uses, agricultural inputs that could infiltrate groundwater supplies, and chemical or harmful spills.

WHAT'S THE PROBLEM?

Millions of people who live in rural and suburban communities in the Midwest face nitrate-polluted drinking water, which poses a serious health risk for infants and increases the risk of health problems and cancer in adults. In Minnesota, over 10 percent of the private wells sampled by the MN Department of Health (MDH) have nitrate levels above the EPA's standard for unsafe water (10 mg/L). Many public drinking water systems in rural and suburban Minnesota have elevated nitrate levels and have been identified by MDH as highly vulnerable to contamination. The primary vector for nitrate contamination is agricultural production in groundwater recharge areas and along hydrologic flows supplying drinking water systems. Lowering drinking water nitrate levels to safety may require millions in mitigation costs.

WHAT CAN WE DO ABOUT IT?

The Minnesota Department of Health is launching a new initiative to explore drinking water benefits of solar energy. Solar development offers a unique solution for protecting wellhead protection areas. Environmentally sensitive solar development can limit nitrate pollution, create new tax base, provide habitat, and help meet clean energy goals.

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PROJECT INITIATIVE

For the past two years, the Great Plains Institute (GPI) has been convening groups in and around Minnesota to discuss solar development as a tool for protecting or restoring various ecosystem services and natural resources. MDH is partnering with GPI, Emmons & Olivier Resources Inc. (EOR), and the Minnesota Rural Water Association (MRWA), plus other state agencies, environmental advocates, and energy and solar industry stakeholders to explore using solar development to protect groundwater and restore nitrate-challenged drinking water supplies. DWSMAs total 1.3 million acres of land in Minnesota. DWSMA areas designated as vulnerable to nitrate contamination could host more than 14,000 MW of solar capacity.

MDH has spent years attempting to reduce conventional agricultural production on vulnerable DWSMAs. However, most DWSMAs are privately owned, and much of the area is prime farmland. Large-scale solar that meets Minnesota's habitat-friendly standard offers a way to take DWSMA land out of agricultural production at scale (1,000 acres rather than 40-80 acres at a time) while affording an improved financial return to the landowner. Replacing nitrate-producing agriculture with pollinator-friendly solar can also bring improved health and safety to the community and substantial cost savings to the state and rural water providers, who will not have to drill new wells or build additional treatment facilities for nitrate removal.



SCOPE

MDH, EOR, and GPI will be reconvening stakeholders and other state agency partners to establish a project steering committee. The committee will identify and prioritize existing opportunities for solar development on DWSMAs, explore potential energy off takers for the solar development, and identify high-nitrate watersheds and potential pilot project sites. The project will also catalog current interconnection standards, characterize existing market conditions, and identify programs and policy initiatives that affect DWSMA solar opportunities.

PARTNER ORGANIZATIONS



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