

**CLEAN WATER COUNCIL
POLICY RECOMMENDATION**

Living Cover for Drinking Water Protection

Policy Statement

The Clean Water Council recommends that the State require the establishment of living cover or equivalent practices in vulnerable areas as identified in wellhead and surface water intake protection plans to protect public and private drinking water sources.

Background

Land use is one of the greatest influences on the quality of Minnesota's ground and surface waters, affecting the purity of our state's sources of drinking water. The State of Minnesota should promote land use practices like living cover that minimize or eliminate potential contamination of water in targeted high risk areas such as wellhead protection areas. The State should consider multiple approaches to encourage living cover with an emphasis on economically sustainable approaches.

The Clean Water Council supports living cover as one approach to implement the State's water quality strategies. Recent reports including the Minnesota Pollution Control Agency's *Nutrient Reduction Strategy* have indicated the dramatic influences land use can have on water quality. Twenty-six million acres out of a total 55 million acres in Minnesota are in agricultural lands and important to our economy. Roughly 1.2 million acres are in areas where groundwater is used as public drinking water sources (called "wellhead protection areas"). Because of the nature of native soils and geology, roughly 360,000 of those 1.2 million acres are vulnerable to contamination from activities on the land surface. In these areas, land use has a significant impact (positive or negative) on groundwater quality. When soils are bare (for up to 9 ½ months of the year for some crops), nutrients and other chemicals in the soil can leach away or run off to contaminate ground and surface water, and can lead to contamination of drinking water sources. When there is living cover on the land, soil erosion is reduced or eliminated and plants take up nutrients that might otherwise contaminate ground or surface water.

Barriers

Economics drives many land use decisions. Currently there are a number of barriers to establishment of perennial crops and cover crops including markets for products; equipment for establishment, management, and harvesting; infrastructure (e.g., for cellulosic ethanol production); and consumer awareness and demand for foods like flours from perennial grains and grass-fed beef. Costs for crop production include equipment, seeds, fertilizer, fuel, shipping, storage, land (owning or renting), salaries, etc. Revenue comes from the sale of crops.

Other factors also affect economic returns on land use, including property taxes. There are limits to funding available for economic incentives like easements and land purchase.

State government can have relatively little influence on costs or revenues, other than by providing cost-share to promote or support activities, and altering the impact (costs) of taxes. An additional factor in land management is that roughly 50 percent of cropland in Minnesota is rented. Incentives are needed that can positively influence a landowner (whether directly operating the land or renting it out) to establish land use practices that are protective of groundwater in vulnerable areas.

Definitions

Living Cover includes:

Perennial crops: Perennial grasses, hay and pasture anchor the soil, build organic matter, and increase the soil's ability to hold water and nutrients.

Cover crops: Grasses, small grains, legumes and winter annuals provide cover before the primary crop establishes and after it is harvested, reducing runoff, erosion and nitrate leaching.

Prairie and grasses: Grasses and prairie plants have extensive root systems that hold soil in place. Grass or prairie buffers can be added in fields, on field edges or as grassed waterways.

Wetlands: Natural and constructed wetlands prevent erosion and filter water, absorbing excess nutrients before they enter lakes and streams.

No till/minimum till: After harvest, plant residue can be left in place to protect soils from erosion before crops establish the next spring.

"Vulnerable" describes how easily both water and pollution can move from the land surface into groundwater, rivers or lakes used for drinking water supplies. All surface water sources are vulnerable. Groundwater sources could be vulnerable if the local geology lacks protective layers between the ground surface and the drinking water aquifer. Scientists at Minnesota Department of Health designate areas that need special protection because human activities inside these boundaries could easily harm the water quality in these sources of drinking water.

**CLEAN WATER COUNCIL
POLICY RECOMMENDATION**

Advancing Drinking Water Protection

Policy Statement

The Clean Water Council recommends that the State:

1. Fund drinking water protection efforts to engage local and national experts and academic institutions to identify regulatory, technological, and behavioral barriers and to enable the development of public health policies and an implementable action plan to address emerging threats and ensure long-term, safe drinking water in Minnesota.
Examples for consideration may include:
 - The notification of the existence of lead in a drinking water distribution system from the main water line to the tap and education on possible actions at property transfer.
 - The notification of the existence of lead in a drinking water distribution system from the main water line to the tap and education on possible actions before rental properties can rent to new tenants or enter into new lease agreements.
2. Direct the Minnesota Department of Health to determine the scope of the lead problem in drinking water and cost to remove all lead from drinking water distribution systems.
3. Promote economic incentives for land use practices that protect high risk source water areas and maximize multiple benefits.
4. Develop a comprehensive, systematic approach for periodic testing of the water quality of private wells including the notification of testing results and education on possible actions.
Examples for consideration may include:
 - The testing of private wells providing drinking water at property transfer and notification of testing results to buyers.
 - Periodic testing of private wells providing drinking water to rental properties and requiring notification of the results before rental property owners can rent to new tenants or enter into new lease agreements.
5. Require that surface water-based community public water systems prepare source water intake protection plans with defined implementation activities for review and approval by the Minnesota Department of Health.

Background

In the spirit of the Clean Water, Land and Legacy Amendment's call to protect our sources of drinking water, the State of Minnesota should take concrete steps to assess and address potential threats to safe drinking water. This assessment of drinking water needs and challenges should identify regulatory, technological, and behavioral barriers, and translate emerging science into protective public health policy and action. This approach should be flexible – to address threats at any point from source water to taps in homes – and focused – to lead to specific and timely interventions by the state, water utilities, and other partners.

Approximately 20% of Minnesotans have a private well as their water supply. Nitrate contamination is increasing in some areas of the state and approximately 10% of new wells exceed the safe drinking water standard for arsenic. Private wells are not regulated beyond the construction standards and an initial test of water quality for bacteria, nitrate and arsenic. Any follow up or periodic testing, or treatment for contaminants, is up to the well owner.

Lead is a component of many drinking water service lines and plumbing systems, particularly in older buildings. It is critical to protect Minnesota's drinking water at the tap but also to increase consumers' understanding of lead toxicity and eliminate sources because there is no safe level of lead exposure. A comprehensive approach is needed to reduce children's exposure to lead in dust, paint, and drinking water.

Drinking water sources are at risk of contamination in many parts of Minnesota. Protecting drinking water *at the source* in rivers, lakes, and groundwater is the most cost-effective and equitable strategy because it prevents both known and unknown contaminants from entering the water supply, protects both public and private wells, and does not rely on costly treatment or individual action. Incidents in Fairmont and New Brighton, Minnesota; Elk River, West Virginia; Flint, Michigan; Toledo, Ohio; and Des Moines, Iowa point to threats that have relevance for Minnesota, including lead, harmful algal blooms, unregulated contaminants, and rising nitrate levels in source waters.

- Approximately 2.7 percent of the 360,000 acres of high-risk wellhead protection areas are in permanent conservation easements. Of the total acres of high-risk wellhead areas, however, about 115,000 acres are in row crop production. These would be a priority for promoting living cover in wellhead protection areas.
- Only 3 out of the 24 public drinking water suppliers that use surface water have source water protection plans because these are voluntary.
- Only about a hundred of the more than 80,000 commercial chemicals used in the United States are regulated in public water supplies as contaminants under the Safe Drinking Water Act. There are no regulations on private water supplies.