

# Beneficial Use of Wastewater: Capital Grants for Demonstration Projects

Annual Report



Minnesota Pollution Control Agency

February 2011

## Legislative Charge

*Minn. Statutes § 116.195 Beneficial use of wastewater; Capital grants for demonstration projects; Subd. 5. Report. The agency shall report by February 1 of each year to the chairs of the House of Representatives and Senate committees with jurisdiction over environment policy and finance and capital investment on the grants made and projects funded under this section. For each demonstration project funded, the report must include information on the scale of water constraints for the area, the volume of treated wastewater supply, the quality of treated wastewater supplied and treatment implications for the industrial user, impacts to stream flow and downstream users, and any considerations related to water appropriation and discharge permits.*

History: 2008 c 179 s 37

*CHAPTER 172 - H.F. No. 1231, Article 2 Clean Water Fund; Sec. 4 Pollution Control Agency (c) \$1,500,000 the first year and \$3,169,000 the second year are for grants under Minnesota Statutes, section 116.195, to political subdivisions for up to 50 percent of the costs to predesign, design, and implement capital projects that use treated municipal wastewater instead of groundwater from drinking water aquifers, in order to demonstrate the beneficial use of wastewater, including the conservation and protection of water resources. Of this amount, \$1,000,000 the first year is for grants to ethanol plants that are within one and one-half miles of a city for improvements that reuse greater than 300,000 gallons of wastewater per day.*

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## Minnesota Pollution Control Agency

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The Minnesota Pollution Control Agency (MPCA) has been charged with implementing a pilot grant program for beneficial reuse of wastewater. The program provides financial assistance for efforts to reuse treated municipal wastewater in industrial processes that would otherwise be using groundwater. Grants may be awarded to local units of government that undertake joint projects with industrial and agricultural producers. Established through 2009 legislation<sup>1</sup>, the program includes two grant tracks:

- Ethanol set-aside track – grants for using treated wastewater in ethanol production
- General track – grants for using treated wastewater in a range of industrial and agricultural uses

## Ethanol set-aside track grants

The following cities and partnering corporations were eligible for grants under the provisions of the ethanol set-aside track:

- City of Benson and Chippewa Valley Ethanol Company, LLP
- City of Morris and Diversified Energy Company II (DENCO II), LLC
- City of Winnebago and Corn Plus Cooperative, LLP

The MPCA issued Ethanol Set-Aside Requests for Proposals (RFPs) in March and November 2010. Consistent with set-aside provisions, the MPCA directly solicited proposals from the three eligible communities upon issuing the RFPs. However, no proposals were submitted in response to the RFPs. To clarify why no proposals were forthcoming, the MPCA surveyed the three eligible communities and received the following responses:

1. Please share with us the reason(s) your community chose not to apply for a grant:
  - The ethanol plant has already invested in a groundwater supply system that is not yet depreciated.
  - Introducing beneficial use is best done when the facility is on the drawing board.
  - Chippewa Valley Ethanol Company produces a finely crafted premium Shakers Vodka. Introducing treated wastewater from the Benson plant would not help marketing this product.
  - The legislation was written to apply to only three ethanol plants, but did not take into consideration the specifics of those plants and their communities.
2. Do you have suggestions for changes to the grants program that would make it more attractive for you to participate in the future?
  - The replacement water source language should be changed to allow for the use of municipal stormwater as an alternative to sanitary sewer wastewater.
3. Do you have anything else to share with the MPCA about the ethanol grants program?
  - This is a great idea with potential far reaching benefits including: Reduced use of groundwater for ethanol production; a general reduction of water use; reduced energy use, increase quality of wastewater generated by the plant and reduced storm sewer runoff into streams and rivers.

Because no proposals were submitted during the 2010 grant cycles, no grants were awarded in the ethanol set-aside track.

## General track grants

Municipal wastewater may be used for a variety of general industrial and agricultural purposes. These include cooling water for power generation, cropland and golf course irrigation, and miscellaneous industrial processing water.

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<sup>1</sup> Minn. Stat. § 116.195 and also in House File No. 1231, ch. 172, Art 2; Sec. 4 (2009)

During 2010, the MPCA issued two rounds of RFPs for general-track grants. No proposals were submitted in March, but the cities of Elk River and Paynesville submitted proposals in the November round. The MPCA is in the process of awarding grants to these cities for the following projects:

### **City of Elk River Project**

**Grant Request: \$308,540 (50 Percent Grant)**

**Total Project: \$617,080**

This proposal concerns a joint project between the city of Elk River and a Great River Energy electrical generating station located in Elk River. The project will use an estimated 28.2 million gallons annually of wastewater effluent from the Elk River Wastewater Treatment Facilities to replace water that would otherwise be acquired from the Mount Simon Aquifer. The Minnesota Department of Natural Resources, in consultation with the MPCA, has indicated that the Mount Simon is a highly sensitive aquifer with a very low recharge rate. Wastewater effluent will be used by Great River Energy as boiler makeup water, building air conditioner cooling water, and evaporator cooling water (during peak production). Great River Energy currently discharges boiler makeup water and building air conditioning cooling water to the Mississippi River according to an NPDES permit and discharges evaporator cooling water into the Elk River sewer system for treatment and disposal to the Mississippi River. In conjunction with the project planning and design process, the feasibility and advantages of returning boiler makeup water and building air conditioning cooling water to the Elk River Wastewater Treatment Facilities for treatment and disposal will be evaluated.

### **City of Paynesville Project**

**Grant Request: \$2,950,000 (50 Percent Grant)**

**Total Project: \$5,900,000**

The Paynesville proposal is for a joint project with area farmers who would use wastewater effluent to replace groundwater in crop irrigation. The project will use an estimated 267.3 million gallons annually of wastewater effluent from the Paynesville Wastewater Treatment Facilities to replace water that would otherwise be acquired from Quarternary Buried Artisan Aquifers (QBAA) and Quarternary Buried Unconfined Aquifers (QBUA). The Minnesota Department of Natural Resources, in consultation with the MPCA, has indicated that the aquifers affected by this change have, on average, medium sensitivity and a medium recharge rate. Paynesville currently disposes of its wastewater effluent through spray irrigation and does not discharge to surface waters. The project will allow Paynesville to continue this practice while accommodating the increased flows from Associated Milk Producers Incorporated, an expanded dairy facility located in Paynesville.

### **State agency partners**

In developing and implementing this program, the MPCA works cooperatively with the Minnesota Department of Natural Resources and the Minnesota Public Facilities Authority.