

Beneficial Use of Wastewater and Stormwater: Capital Grants for Demonstration Projects



Legislative Charge

Minn. Statutes § 116.195 Beneficial use of wastewater and Stormwater; Capital grants for demonstration projects; Subd. 5. 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 supplied or stormwater available, the quality of stormwater or 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.

HIST: 2008 c 179 s 37; 1Sp2011 c 6 art 2 s 22

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 stormwater or 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.

Author

James R. Anderson

Estimated cost of preparing this report (as required by Minn. Stat. § 3.197)

Total staff time: 13 hrs.	\$657.00
Production/duplication	\$8.00
Total	\$665.00

The MPCA is reducing printing and mailing costs by using the Internet to distribute reports and information to wider audience. Visit our website for more information.

MPCA reports are printed on 100% post-consumer recycled content paper manufactured without chlorine or chlorine derivatives.

Minnesota Pollution Control Agency

520 Lafayette Road North | Saint Paul, MN 55155-4194 | www.pca.state.mn.us | 651-296-6300
Toll free 800-657-3864 | TTY 651-282-5332

This report is available in alternative formats upon request, and online at www.pca.state.mn.us

Document number: lrwq-wwtp-3sy13

Contents

Executive Summary	1
<i>Ethanol set-aside track grants.....</i>	<i>1</i>
<i>General track grants</i>	<i>1</i>
<i>State agency partners.....</i>	<i>3</i>

This page left blank intentionally.

Executive Summary

The Minnesota Pollution Control Agency (MPCA) has been charged with implementing a pilot grant program for beneficial reuse of wastewater and stormwater. The program provides financial assistance for efforts to reuse treated municipal wastewater or stormwater in industrial processes that would otherwise be using groundwater. Grants are awarded to local units of government which undertake joint projects with industrial and agricultural producers. Established through 2009 legislation¹, the program was subsequently revised by statute to provide for the beneficial use of stormwater in addition to treated wastewater. The program includes two tracks: 1) An Ethanol set-aside track, and, 2) A General track.

Ethanol set-aside track grants

Ethanol set-aside track grants are for partnerships between municipalities and ethanol producers to replace groundwater with treated wastewater or stormwater in ethanol production. The MPCA is in the process of negotiating work plans for Beneficial Use Grants with the Cities of Little Falls and Morris. Each city may receive up to a 50 percent matching grant of \$500,000.

City of Little Falls

Cooperating Industry: Central Minnesota Ethanol Cooperative

Grant Award: \$500,000

Total Project Cost: 1,250,000

The City of Little Falls (City) project is a partnership with the Central Minnesota Ethanol Cooperative with an estimated total project cost of \$1,250,000. The project will make use of treated wastewater to reduce the use of groundwater in ethanol production. A project work plan submitted by Little Falls is currently under review by the MPCA. When the work plan is complete, it will be incorporated into a grant contract that the MPCA will execute with the City of Little Falls.

City of Morris

Cooperating Industry: Diversified Energy Company II (DENCO II)

Grant Award: \$500,000

Total Project Cost: \$1,638,000

The City of Morris (City) project is a partnership with the Diversified Energy Company II (DENCO II) with an estimated total project cost of \$1,638,000. The MPCA is currently waiting for a project work plan from the City. The project will make use of treated wastewater to reduce the use of groundwater in ethanol production. When the work plan is reviewed and appropriate modifications are made the completed work plan will be incorporated into a grant contract that the MPCA will execute with the City of Morris.

Together the Little Falls and Morris grants will comprise the \$1,000,000 Set-Aside for Ethanol projects in the originating program legislation.

General track grants

Through General track grants municipal wastewater or stormwater can be used for a variety of general industrial and agricultural demonstration projects. These include, for example, cooling water for power generation, cropland and golf course irrigation, and miscellaneous industrial processing water.

During May of 2011, the MPCA awarded Beneficial Use Grants and subsequently entered into Grant Contracts with the Cities of Elk River and Paynesville as described below.

¹ MN Stat. § 116.195, as amended and House File No. 1231, Chap. 172, Art 2; Sec. 4 (2009)

City of Elk River Project
Cooperating Industry: Great River Energy
Grant Award: \$285,740
Total Project Cost: \$617,080

The City of Elk River (City) and the Great River Energy Facility located in Elk River are undertaking a Beneficial Use Project in which wastewater effluent from the City will be used as cooling water at the Great River Energy Facility; replacing surface water and thereby reducing the thermal impact of the cooling water upon its return to the Mississippi River. This specific modification of the program for the Elk River Project was provided for in the most recently completed legislative session. The annual volume of wastewater to be reused, as identified in the grant contract and work plan, is 28.2 million gallons. A final determination of the volume of wastewater will be available once the project is constructed and is operational.

The revised facilities plan for the Elk River project is currently under development by the City of Elk River in conjunction with Great River Energy and in consultation with the MPCA. Elk River has thus far received \$7,780.00 in grant assistance as reimbursement for completed project activities. Grant funds for the Elk River project are currently available for reimbursement of eligible project expenditures through June 30, 2013. A time extension for the project will be authorized if necessary. The final statutory deadline for the utilization of program funds is June 30, 2016.

City of Paynesville Project
Cooperating Industry: A consortium of local agricultural producers
Grant Award: \$2,494,362
Total Project Cost: \$5,900,000

The City of Paynesville (City) is undertaking a joint project with area farmers in which wastewater effluent from the City will replace groundwater in the irrigation of cropland. Wastewater effluent discharged from the treatment facilities will be treated to MPCA secondary standards suitable for the irrigation of agricultural cropland. The annual volume of wastewater to be reused, as identified in the grant contract and work plan, is 267.30 million gallons, replacing water that would otherwise be acquired from Quarternary Buried Artisan Aquifers (QBAA) and Quarternary Buried Unconfined Aquifers (QBUA). A final determination of the volume of wastewater will be available once the project is constructed and is operational.

The MPCA consulted with the Department of Natural Resources regarding groundwater sensitivity for project applications received through the Beneficial Use Program and the effected aquifers in the Paynesville area were assigned to the intermediate category.

The Paynesville treatment facility currently disposes of wastewater effluent through spray irrigation according to a State Disposal System (SDS) permit, so there are effectively no impacts on stream flow and downstream users. The Beneficial Use project is being undertaken in conjunction with a significant expansion of the overall capacity of the treatment facilities to accommodate the increased flows from Associated Milk Producers Incorporated, an expanding dairy facility located in Paynesville. The project provides for beneficial use through a corresponding expansion of spray irrigation structures and appurtenances, ensuring that there continues to be no impacts on stream flow and downstream users. Prior to approval to construct the project the City of Paynesville's SDS permit for spray irrigation has been revised and finalized according to permit program guidelines and requirements to ensure that standards are met.

Paynesville completed and received MPCA approval of Facilities Planning and Plans & Specifications for the project, spring of 2011. The City's consulting engineer's estimate of the overall cost of construction was 8.28 million dollars. The City proceeded to advertise for bids in June, 2011, however the bid proposals, at over nine million dollars, significantly exceeded the estimated cost for the project. The City has identified potential reductions in overall project costs and is currently planning on letting bids to construct the project during the 2013 construction season. Grant funds for the Paynesville project are currently available for reimbursement of eligible project expenditures through June 30, 2013. A time extension for the project will be authorized if necessary. The final statutory deadline for the utilization of program funds is June 30, 2016.

State agency partners

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