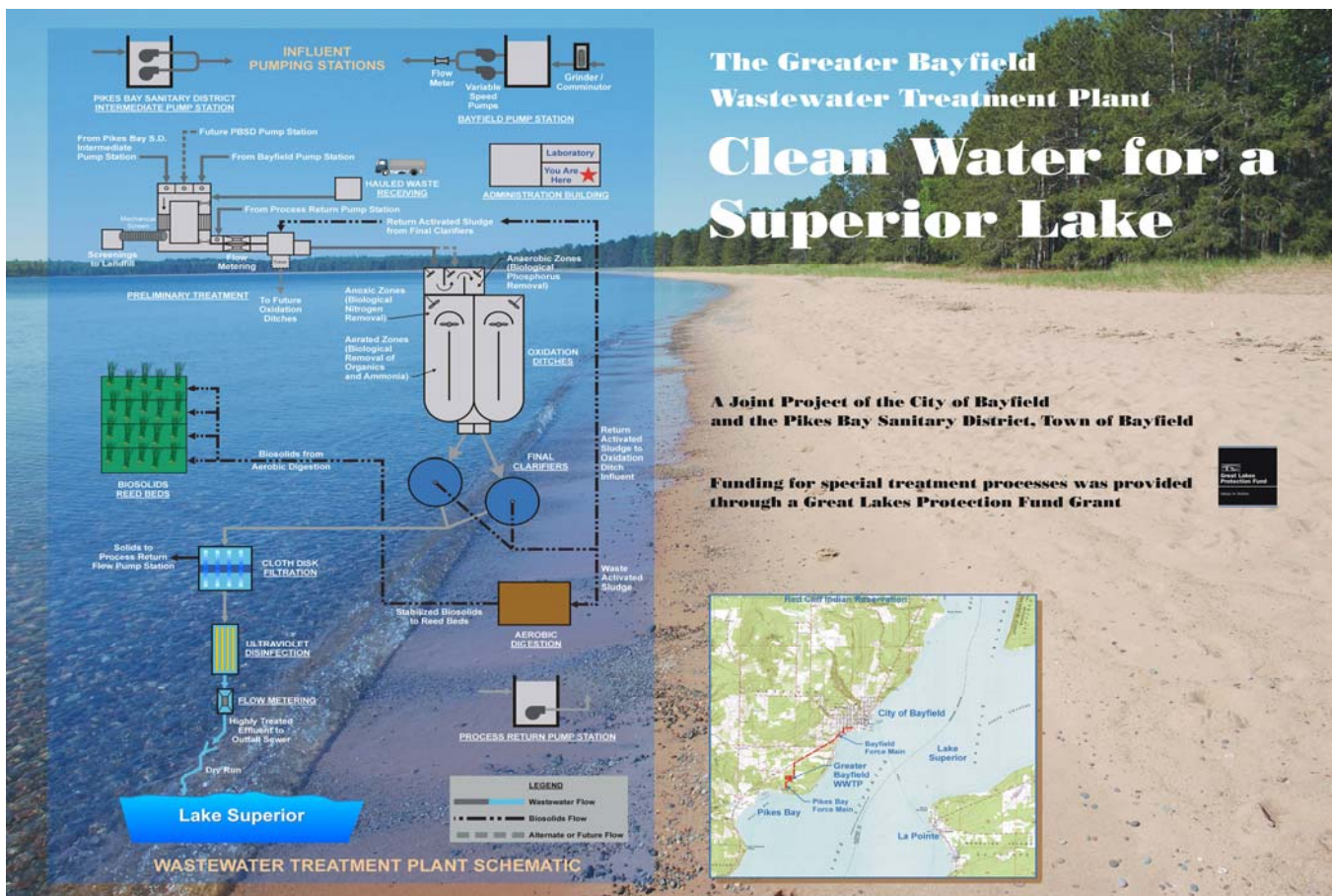


City of Bayfield's Small Cities Sustainability Best Practices Nomination

Greater Bayfield Wastewater Treatment Plant:

*“Providing Clean Water for a Superior Lake”
City of Bayfield, Bayfield County, Wisconsin*



Contact:

Billie L. Hoopman, Clerk
City of Bayfield
P.O. Box 1170
Bayfield, WI 54814
715-779-5712 - Phone
715-779-5094 - Fax
cityclerk@charter.net

Why should this project be considered for the award?

The City of Bayfield, a small Lake Superior coastal community of 618 people, worked with the adjacent township from 1999 to 2006 to construct a regional wastewater treatment facility that provides “above and beyond” treatment in an effort to protect the world’s largest source of surface freshwater; Lake Superior. Although both communities were faced with making improvements to their existing wastewater treatment plant (WWTP) facilities, neither community was under any obligation to move forward with constructing a plant with such high treatment levels. Fortunately, our public leaders were brought together to discuss all of the area needs and easily came to the conclusion that building a regional facility, with the primary goal being the plant provide a zero percent discharge into Lake Superior, would be the most beneficial even though the cost was higher to construct this type of plant.



A critical portion of this project was securing financing to make the nine million dollar project affordable for the communities. The City, with the assistance of our engineers (Strand Associates) pursued grant funding from the Great Lakes Protection Fund, the Wisconsin Department of Natural Resources Clean Water Fund, and the Army Corps of Engineers Section 154 grant fund. In the end, the total project was funded 70 percent by grants, 24 percent by zero interest loans, and 6 percent by low interest loans.

We are hopeful others who read about our multi-jurisdictional project will see how they can work together, in order to maximize their financial investments while operating more socially and environmentally. The plant itself, as well as the intermunicipal agreement are models that can be used by other communities in the United States as well as any other coastal global community.

What will the community do with the associated \$5000 grant award?

If the City of Bayfield were the recipients of the \$5000 grant, we would use the money during the implementation of our “Clean It/Green It” campaign that will be launched July 2008. There are two main components of the “Clean It/Green It” program, which are described below.

First, the City of Bayfield, an eco-municipality, and the Chequamegon Bay Alliance for Sustainability are partnering to provide homeowners a bag of environmentally friendly cleaning products in a re-usable shopping bag, in an effort to introduce them to some options that would better protect the environment and our best asset; Lake Superior. The City will be responsible for providing the bags and “green” cleaning products. The Alliance for Sustainability will be providing a compact florescent light bulb and they have also offered to deliver the bags door-to-door to homeowners as they are continuing their own “Campaign Sustain” program.

In addition, information on a mini-grant program the City of Bayfield is offering to City of Bayfield homeowners to make their homes more efficient will also be included in the bag and posted Citywide. Homeowners will be able to apply for a grant which could be used to purchase low volume toilets and shower heads and water faucets; replace incandescent light bulbs with compact florescent bulbs; install programmable thermostats and make other home improvements that will help reduce energy usage and impacts on the earth in addition to saving money. The City will accept applications for mini-grants (up to \$250.00) will be accepted until August 29, 2008, where they will be reviewed and approved on a needs basis.

The City of Bayfield is contributing \$15,000 toward this endeavor, and hoped to add a State of Wisconsin grant of \$10,000 toward this project. Unfortunately state funding was cut and the grant program was no longer available. Because of this we have already had to scale back our efforts, but a successful nomination and the opportunity to increase our program funds by \$5000 would make a tremendous difference to the success of our pilot program. It would afford us the wonderful opportunity to award 20 additional grants.

We would be pleased to have the opportunity to present the “Green It/Clean It” project’s success at the 2009 Annual Conference!



Greater Bayfield Wastewater Treatment Plant

“Clean Water for a Superior Lake”

A cooperative effort between the City of Bayfield and Pike's Bay Sanitary District

Describe the service or services as they previously existed.

Although both 1970s-era wastewater treatment plants (WWTPs) which discharged to Lake Superior had met limits, there was concern about their ability to meet the area's long-term demands. Bayfield had a 30+ year old mechanical plant that was at capacity, in close proximity to Lake Superior, and lacked room for expansion. The PBSB operated a lagoon system and was facing new DNR regulations which would require costly upgrades to remove phosphorus and ammonia. Rather than constructing two plants, we worked cooperatively to pursue a “regional” wastewater treatment facility that would:

- provide 50+ years of service (rather than 20 yrs. going alone)
- effluent that is “above and beyond” typical treatment requirements
- be energy and cost effective
- give a higher rate of return on investment
- ensure the health of Lake Superior



Previous WWTPs in the City of Bayfield (top photo) and Pikes Bay Sanitary District (lower photo)

Other Triple Bottom Line Aspects (Economic vitality, social equity, and environmental stewardship)

The Greater Bayfield Wastewater Treatment Plant was conceived with **environmental protection and enhancement** in mind, by using energy efficient processes to achieve an effluent that was “above and beyond” typical treatment requirements. The DNR has identified GBWWTP as a demonstrations facility, to showcase several environmental technologies including:

- Cloth disk filtration
- Reed bed sludge management
- BNR, which reduces chemical use
- Automatic dissolved oxygen controls and variable frequency drives on aerators for energy savings
- Gentrification of nitrate, which results in lower aeration energy requirement
- Enhanced efficiency ultraviolet disinfection
- Premium efficiency motors
- Energy-efficient lighting and day-lighting

The GBWWTP serves as an example to other communities and engineers of what can be achieved in an effort to protect the environment and reduce operating costs.

Economic Benefits. In general, the economy of Bayfield County is considered depressed, despite our attraction as a tourist area. The City of Bayfield is considered a hardship community, with a median household income (MHI) less than 80% of the state's average. The PBSB, with a MHI at about the state average, is a combination of seasonal and full-time residents. Attracting investment and development to the area would enhance the sluggish economy.

Lacking options for wastewater management has hindered development in the past. The City had been operating under a self-imposed sewer moratorium. Currently, the majority of homeowners and businesses within PBSB are served by private wastewater systems, such as mounds, drain field systems or holding tanks. Much of the soils in the area are classified by the USGS as unsuited for installation of drain field systems. Potential developers have forgone development in the area because of wastewater management issues. However, with our new WWTP nearby, two property owners have expressed interest and are pursuing residential development.

On-Site Sludge Management was an important aspect of achieving an environmentally-friendly WWTP. Sludge storage for land spreading was unattractive, since access to sites for land spreading was limited and would require significant trucking. Reed beds, however, offered environmentally friendly, natural dewatering and long-term storage of sludge, which is much less energy-and fuel-intensive. Sludge management is reduced from annually to every seven to ten years with this system.



New Greater Bayfield Wastewater Treatment Plant which
Serves the greater Bayfield region and provides a zero percent
effluent discharge into Lake Superior.