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BY DESIGN

Small Communities Make Large Improvements

A variety of funding options make infrastructure upgrades a smart fiscal and environmental choice.



Cities with fewer than 500 residents have traditionally taken a more individualized approach than larger cities to creating and maintaining infrastructure. In recent years, however, many small communities have abandoned reliance on individual septic and well systems in favor of centralized water, wastewater and storm sewer systems. Environmental and health concerns have prompted these changes as septic systems in small communities age. Shared basic services also become a practical choice as newer, smaller lots make shared services the most cost-effective option.



In Dundas, construction workers prepare to install sanitary sewer below the ground water table.

Why consider comprehensive infrastructure improvement?

A comprehensive approach to infrastructure improvement is the coordinated completion of wastewater collection, storm sewer and water systems, as well as street surfacing. While not necessary, this approach is usually most cost-effective because it eliminates the repeated digging up of streets and privately-owned lots. In the past, adequate funding was not readily available for the creation of wastewater collection systems — a fact that often made comprehensive infrastructure improvements a financial impossibility. Recently, however, many funding agencies have recognized the special needs and high per-family costs associated with comprehensive water and wastewater projects. Minnesota's Department of Trade and Economic Development (DTED), Minnesota's Public Facility Authority (PFA), and U.S. Department of Agriculture Rural Development (USDA.RD) work closely together to help small communities finance critical water and wastewater needs.

How does a community begin?

- *Contact your Regional Development Commission or a private consultant for help in understanding and managing the funding and application process.*
- *DTED provides a simple pre-application form for grant and loan requests for infrastructure improvements within the state.* The proposed

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projects are reviewed by DTED staff, and a meeting is held to inform you of funding possibilities and procedures.

- *An environmental assessment and engineering report must be prepared* as part of the formal application process. An engineering firm can assist with preliminary cost data and the formal studies.

What can you expect from Bolton & Menk?

- *BMI project managers are familiar with funding sources and will guide you* to a group who will help with the funding process.
- BMI can provide experienced engineering and cost data based upon many active, similar projects.
- We can assist with project coordination and scheduling, grant/loan administration, engineering administration, and communication with community members throughout the preliminary and construction phases of the project.

These communities are making it happen.

Dundas, Frost, Green Lake, New London, Odessa, and Pennock are currently working with BMI on infrastructure improvement projects. All have different needs and have taken individual approaches to accomplishing their goals. In Green Lake, aging lakeshore septic systems have prompted the integration of lakeshore homes into the City's sanitary sewer system. Dundas' project includes a wastewater collection system, construction of a duplex lift station, upgrades to the city's water system, storm sewer installation, new streets with curb and gutter, driveway aprons, sidewalk installation, and integration into Northfield's wastewater collection system.



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Professional Promotion Announced



Andrew R. Kehren

Bolton & Menk, Inc. is pleased to announce that **Andrew R. Kehren** has been named an Associate of the firm. Kehren, who joined the Mankato office, Civil Division in 1995, is a registered professional engineer with a B.S. in civil engineering from North Dakota State University. BMI recognizes his exemplary professional and personal achievements, successful completion of a variety of civil engineering projects for public and private clients, and 12 years of engineering experience.

Members Named to Board of Directors

Herman Dharmarajah, Timothy Loose, and Daniel Sarff were newly elected to Bolton & Menk's Board of Directors at the firm's 1997 Annual Meeting. Dharmarajah, a native of Sri Lanka, was named the manager of the Mankato office, Environmental Division in 1994. Loose, a native of New Ulm, has served as manager of the Mankato office, Civil Division since 1994. Sarff is a native of Armstrong, Iowa. He was named manager of BMI's Willmar office in 1994. All three became BMI Principals in 1995.

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BY DESIGN

New Ulm Biosolids Processing Facility: New Technology Makes Long-Term Environmental Protection a Reality

New Federal Standards for Disposal of Sewage Biosolids Move All Minnesota Cities to Evaluate Treatment of Domestic Sewage



Construction was recently completed on new wastewater biosolids treatment, storage and disposal facilities for New Ulm, Minnesota. Bolton & Menk, Inc. provided the design and construction management services for the facilities. The new construction was designed to comply with new federal standards for biosolids. New Ulm's facility was the first of its kind to be operational in Minnesota.

What is the new Federal Biosolids Rule CFR 503?

Land application is the most typical means of disposal for biosolids which remain after the treatment of domestic sewage. Most communities dispose of the biosolids by giving it to farmers for land application; it is a much sought-after fertilizer supplement. New federal regulations were created to improve the quality of biosolids and final disposal methods. These regulations require not only an improved biosolids quality, but more thorough testing and documentation of the disposal process.

How can the new regulations be met?

A number of technologies are available for compliance with the Biosolids Rule. In the New Ulm project, Bolton & Menk utilized a system manufactured by the Krüger Company of Denmark. The system

relies primarily on high temperatures for pathogen reduction; this means that disease-carrying bacteria are killed by high temperatures.

What are the unique features of the New Ulm plant?

Though new in the United States, the technologies necessary to meet new federal biosolid standards have been in use in Europe for more than a decade. BMI engineer Bob Brown traveled to Europe before the New Ulm facility was designed; there he investigated options and chose the system most appropriate for use in Minnesota. Brown points out these advantages to the Krüger system:

- *Easy operation: a computerized operating system makes monitoring and reporting easy.*

- *No external heating is used: biosolid microorganisms generate the heat necessary for the pathogen reduction, plus enough to heat other facilities.*

- *Energy efficiency cuts operational costs.*

- *Adaptability of the system makes expansion easy.*

Tips for Communities Planning Sewage Treatment Upgrades

- *Look to the future. Use the best technology available now.*

- *Take stock of long-term energy costs/savings.*

- *Insist on an adaptable system with expansion options.*

Minnesota Cities: Places We Call Home

**League of Minnesota Cities
1997 Annual Conference
June 10-13, 1997
Saint Cloud, Minnesota**

Look for Bolton & Menk in Booth #79!

City of Saint Peter Responds to Emergency Flood Damage



1997's spring floods caused damage to the cast iron force main that carries wastewater from Saint Peter to treatment ponds in Le Sueur County. The broken force main, which runs under the Minnesota River, caused raw sewage to pour into the river at a depth of 25 feet.

On May 2, 1997 divers were brought in to find the break. BMI staff worked over the weekend to evaluate and design the alternatives for an emergency council meeting on Monday, when a Contractor was authorized to begin work. Under the direction of Rice Lake Contracting, Michaels Pipeline of Brownsville, Wisconsin, was hired to bore under the river a distance of 3300 feet at depths up to 60 feet. The bore is one of the

longest yet undertaken in the state of Minnesota. The new pipe runs a safe 30 feet below the river bed.

According to Lew Giesking, Saint Peter's Public Works Director,, "The project successfully came together so quickly only because of the cooperation among City staff, Bolton & Menk and the contractors, with the support of regulating agencies and the City Council." Within 3 weeks of discovering the break, the new main was operational. Lyle Femrite, of BMI, judges that things couldn't have gone better. "I have never worked with a more professional group than Michaels Pipeline. Saint Peter chose a good, long-term solution and it was executed efficiently and effectively. The new main could last more than fifty to seventy-five years.



A Michaels Pipeline employee monitors the horizontal directional drilling unit used in the Saint Peter project.

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