



BOLTON & MENK, INC.

By Design

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GIS Technology & Infrastructure Inventory

Bolton & Menk, Inc. is using state-of-the-art Geographical Information Systems (GIS) and Global Positioning System (GPS) technology to help cities efficiently conduct infrastructure inventory.

The process provides an effective and efficient method for cities as they complete Government Account Standards Board Statement 34 (GASB 34), which requires all state and local government entities to include street and utility infrastructure as capital assets.

A Look at GIS

GIS is cutting edge technology with the capability to effectively collect, organize, access, and analyze geographic information, including data and records associated with the land and its natural and constructed features.

According to Mark Schulz, BMI's GIS Coordinator, GIS provides "smart maps," with details on all infrastructure features, from wet water retention ponds to fire hydrants.

More importantly, these maps can be used to access different types of data that have a locational component.

To collect the GIS data, Bolton & Menk uses hand held Trimble GeoXT GPS data collectors in the field. The GeoXT has sub-meter horizontal and vertical accuracy and can collect a location within 30 seconds.

A key feature of the GeoXT is the ability to load a color background image of the city or area to be collected. This feature makes it very

easy to know where you are and what you have collected. Schulz says those in the field often ride bicycles or four-wheelers to go from point to point.

When taking infrastructure inventory, the surveyors collect the horizontal and vertical position, then record any appropriate or helpful attributes, including type or physical condition of the particular infrastructure.

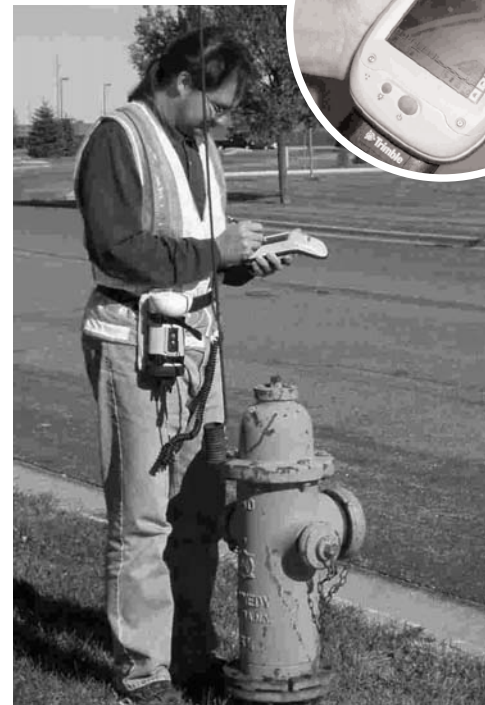
The collected points and attribute data is transferred to GIS where the data can be maintained and updated.

"Using GPS to collect and inventory utility infrastructure is not only accurate, but a quick and efficient way to gather data," said Schulz.

Belle Plaine & GASB 34

BMI recently completed a project for the City of Belle Plaine, Minnesota. In order to comply with GASB 34, the City wished to take an inventory of key infrastructure, including water and sewer systems and streets, and determine their asset value.

Using GPS, BMI collected the locations and conditions of related items of infrastructure, such as hydrants, catch basins, water valves, street signs, and traffic lights. They also rated the conditions of streets



Mark Schulz uses GPS technology with the Trimble GeoXT GPS to collect a fire hydrant's location. GIS helps cities complete infrastructure inventory.

throughout the city.

After the information was collected, it was downloaded into a GIS and Excel spreadsheet.

"Then, we used a yearly cost index to determine the depreciated capital asset values for the infrastructure," said Schulz. This provided the necessary information for GASB 34 compliance.

For information on GIS technology or GASB 34, call Mark Schulz at Bolton & Menk, (507) 625-4171.

INSIDE

News & Updates

NPDES Construction Permit Guidelines



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NEWS & UPDATES



At Bolton & Menk, we provide on-going training to ensure our employees are familiar with new regulations and technology. Recently, Bill Douglass, standing above, led a discussion on new NPDES construction permit guidelines at a "brown bag" lunch.

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New NPDES Construction Permit Guidelines Take Effect

Bolton & Menk clients should be aware of a number of new permit requirements for construction activity that took effect on September 4, 2003. These requirements are part of the National Pollutant Discharge Elimination System (NPDES) Phase II Storm Water permit requirements.

Background

The 1987 Amendments to the Clean Water Act required the U.S. Environmental Protection Agency (EPA) to develop regulations for storm water discharges. To fill these requirements, the EPA developed the National Pollutant Discharge Elimination System (NPDES) Phase I requirements, which targeted construction sites disturbing more than five acres. Now the EPA has issued NPDES Phase II storm water permitting requirements. The Phase II requirements apply to construction sites disturbing more than one acre.

Requirement Highlights

Included in the new permit requirements is the construction of a wet retention basin when more than one acre of new impervious surfacing is created by the construction. Although alternative methods, other than wet retention basins may be proposed, a permanent pond is recommended to avoid extending the permit approval timeline.

According to Bill Douglass, Water Resources Division Manager, clients should be aware of several additional costs associated with the wet retention basin requirement.

“Additional land space will be required for development and additional engineering time will be required for the design and construction of the wet retention basin. Also, it will take extra time to complete the permit applications,” explains Douglass. “Every permit needs a Storm Water Pollution Prevention Plan (SWPPP), as well. That plan will take some time and effort to complete.”

The SWPPP must be completed before the permit is filed and must be available on the construction site. Also, the owner must develop a chain of responsibility to ensure that the SWPPP will be implemented and stay in effect until the owner’s responsibility is terminated. Termination occurs when either the property is sold, or “final stabilization” is achieved. When the permitted property is sold, the permit requirements are transferred to the new owner until final stabilization. Final stabilization is defined as establishing a uniform perennial vegetated cover over 70% of the disturbed soil.

The table below details the changes from the 5-acre permit.

Bolton & Menk’s Role

Douglass says Bolton & Menk can assist clients with the design and construction of wet retention basins, as well as the completion of SWPPPs and permit application.

“We can also help clients define when certain aspects of the requirements are applicable,” said Douglass.



REQUIREMENTS

ITEM	PREVIOUS REQUIREMENT	NEW REQUIREMENT
Minimum Disturbance Triggering a Permit	5 acres	1 acre
New Homes	No permit necessary	Permit required if part of the larger development
Permit Fee	\$240	\$400
Storm Water Pollution Prevention Plan (SWPPP)	Not necessary	1. Must be on file 2. Must be submitted if over 50 acres and is within 2000' and discharges into a Special Water
Responsibility for Compliance	Contractor	Contractor is responsible for erosion controls. Owner is responsible for implementation of the SWPPP
Responsibility after Land Sale	None	Transferred with the property until Notice of Termination

Minnesota State University, Mankato, Recognizes Jon Rippke



Jon A. Rippke, PE, President of Bolton & Menk, Inc., has been named the 2003 Volunteer of Year by Minnesota State University, Mankato. He was recognized for his volunteer efforts with the new Civil Engineering program as well as his involvement with the booster club for the basketball program.

He, and others in the engineering industry, felt that Minnesota students seeking a secondary education in the field of civil engineering had only one choice or they were forced to go outside of Minnesota for their education. Because of this initiative, Minnesota State University, Mankato (MSU), developed a Bachelor's degree program in Civil Engineering to provide this alternative choice in Minnesota. The program is under the direction of Dr. Saeed Moavani, head of the Department of Mechanical & Civil Engineering as well as Dr. Karen Chou, who is head of the Civil Engineering Group. Jon was instrumental in providing encouragement and support in the investigatory and

implementation phases of the program development. He was also very involved in raising private sector dollars for the initial funding required to secure program staffing. Dean John Frey, the Dean of the Mechanical & Civil Engineering Department, said, "I appreciated the leadership that Jon provided for the new Civil Engineering department as it was developing, as well as his continued hard work and support of the program."

In May 2003, MSU graduated its first five Civil Engineering students, two of whom now work for Bolton & Menk. The Department expects the Civil Engineering program to have a senior class of 25 by 2006. Jon remains closely involved in the program as chair of the Civil Engineering Advisory Board.

He also supports MSU's men's and women's basketball programs and serves as president of the Hoops Club. He sees great potential to increase the base of community support and is working hard toward that goal. Jon's efforts have enhanced the lives of students, faculty, and professionals in his industry, student athletes, coaches and fans. The award was presented at the MSU Foundation Ninth Annual Gala held on Friday, October 3, 2003.



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