



BOLTON &amp; MENK, INC.

# By Design

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## Online Mapping: A Gold Mine of Information at the Fingertips of City Managers, Planners & Councils

**B**olton & Menk's online mapping system is radically improving the way cities manage their infrastructure assets. Such things as land parcels, fire hydrants, streets and sewer pipes—and all associated data—are now virtually at city staff members' fingertips.

"It's easy to find things graphically," explains GIS Coordinator Mark Schulz, "and just as easy to update information in the field."

Here's how online mapping works. Bolton & Menk's GIS Department begins by converting traditional line-drawn maps into intelligent (i.e., digital) drawings, either by scanning the old documents or redrawing them in CAD. Meanwhile, crews—either Bolton & Menk or city personnel—collect coordinates of all pertinent assets using GPS technology. This information is then built into the GIS to correspond precisely with the city's digital maps.

The end result is a system of layered maps that can include as much or as little information as a city requires. The base map will include the overall city layout. One overlay may include lot and zoning delineation. Another might encompass the sanitary sewer system. Yet another may show the location of every street sign or street light in town.

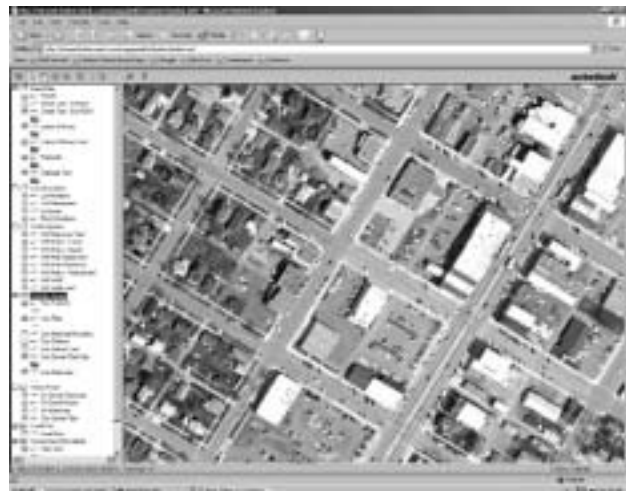
"These maps can include everything from fire hydrant locations to tree inventory to zoning data," according to Schulz. "The range of information that the system can chart is nearly limitless."

Bolton & Menk provides two ways for clients to access and update their information. One relies on ArcView mapping software, which clients must possess. The other uses MapGuide, which is a web-based GIS system accessible with most browsers (Internet Explorer, etc.). Each has its own advantages.

ArcView generally requires more staff time and expertise to administer. It works in conjunction with Microsoft's Access database program to tie digital maps and associated data together. Larger cities tend to prefer ArcView because they are in a better position, staff-wise, to manage the process. After compiling all of the data,

Bolton & Menk turns it over to the city on a CD, and city staff then runs with it.

MapGuide is a much more intuitive system. Because it is a browser-based program, it has a greater degree of familiarity to it and involves very little training. Schulz says that it can be learned by most users in about 20 minutes. MapGuide is an appealing solution for smaller communities because it doesn't require them to invest in a GIS system with expensive software and all the training it entails.



**B**oth systems allow city staff to update information in the field with a laptop computer. If a fire hydrant is flushed or painted or repaired, for example, they can immediately register this new information in the system. With ArcView, the software is installed right on their computer. With MapGuide and a wireless Internet connection, the information is updated in real time on Bolton & Menk's server.

"It's a better way to keep maintenance records up to date," Schulz points out.

Bolton & Menk has developed an implementation process that phases clients into the system and it has proven to work very well. Schulz says, "The best way to do it is to ease them into the process, one layer at a time. A four-year implementation schedule wouldn't be uncommon in the case of a smaller community."

*For more information about online mapping, contact Mark Schulz at 507-625-4171 or marksc@bolton-menk.com.*

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## Open Houses for New Chaska & Willmar Offices



We are happy to announce that the Chaska office moved into their new building located at 2638 Shadow Lane, Suite 200, in Chaska, on August 28th. This new office not only provides

space for our existing staff but also provides room for growth and expansion to better meet our clients' needs. Bolton & Menk will be holding an Open House to celebrate the move on October 14th, 2004, from 4:00 to 7:00 p.m. Tours of the new facility will be given and refreshments will be served.

Willmar will also be holding an Open House for their new facility on October 21st from 4:00 to 7:00 p.m. Tours of the new office, at 2040 Highway 12 East in Willmar, will be given and refreshments will be served.



### STAFF NEWS

Please join us in welcoming our newest employees.

Jon Schelkoph, EIT	Burnsville
Steven Hurd, EIT	Burnsville
Dan Lonnes, PE	Chaska
Andrew Budde, EIT	Fairmont
Kathy Drummer, PE	Mankato
Aaron Mages, LSIT	Mankato
Monica Anderson, EIT	Mankato
Jeff Bartz, EIT	Mankato
Matt Leonard, EIT	Mankato
Robert Haataja, EIT	Willmar
Michael Geers, EIT	Willmar
Jason Olson, EIT	Willmar

## New Associates Named

Bolton & Menk is pleased to announce that Richard "Ric" Williams and Jon A. Huseby have been named Associate members of the firm.



**Richard J. Williams, Jr., L.S.**, is the Manager of Bolton & Menk's Burnsville Survey Department. Ric's primary responsibilities include supervision of field crews, office technicians and the coordination of survey work for the Burnsville and Chaska offices.

Ric has over 29 years of surveying experience. Prior to joining Bolton & Menk, he worked for a consultant in the Minneapolis/St. Paul area for several years.



**Jon A. Huseby, P.E.**, of Mankato, is the Manager of Bolton & Menk's Highway Transportation Group. Jon's primary responsibilities are to direct our efforts in the areas of Transportation Planning, Public Agency Involvement, Highway

Project Development and Traffic Engineering. Prior to joining the firm in 2003, Jon served nearly 20 years with the Minnesota Department of Transportation, attaining the position of District Engineer in Mankato. He is a registered professional engineer with a B.S. Degree in Civil Engineering from North Dakota State University.

**UPCOMING EVENTS**

- Oct. 10-12 2004 League of MN Cities Conference and Marketplace — Duluth, MN
- Oct. 14 Chaska Office Open House
- Oct. 21 Willmar Office Open House
- Nov. 30-Dec. 4 National League of Cities Congress of Cities and Exposition — Indianapolis, IN

## BWSR Mandates Surface Water Planning

# Getting The Job Done For Six Carver County Communities

**Y**ou might say it was a trickle-down approach that landed surface water management responsibilities in the laps of local governments in Minnesota. At least that's the way it worked out in Carver County.

The Minnesota Board of Water and Soil Resources (BWSR), which answers directly to the state legislature, transferred management responsibilities from the watershed districts to the county level in October of 1996. Carver County, in turn, mandated each city within the county to produce its own surface water management plan (SWMP) and submit a draft by December 31, 2004.



Bolton & Menk is now in the process of writing SWMPs for six different communities in Carver County.

### A Surface Water Management Plan is a valuable tool for local government.

There is a lot of value to cities in developing their own plans. According to Bill Douglass, head of Bolton & Menk's Water Resource Department, "If they don't do it themselves, they may be forced to accept a plan that is written without consideration being given to the specific nuances of the city. When a larger plan is written, it must attempt to apply uniform regulations to the whole county.

A lot of the information may be superfluous to your specific city. Moreover, the broad-brush plans prepared for larger watersheds often overlook areas that may be considered key resources by the city," Douglass says. "And that means a loss of control over your own water resources. So cities do have a direct interest in overseeing this process themselves."

Beyond that, an SWMP is a valuable planning tool for local government. With a plan in place, a city can, for example, assess regional costs for developments and determine area charges to developers. There are other advantages as well.

An SWMP—alternatively referred to as a *storm* water management plan—is a two-part deliverable comprised of a written report and a complete set of digital mapping with the modeled information. Digital mapping allows city managers and planners to view existing

*Continued on page 4*

### Surface Water Plan Purposes (as dictated by the Minnesota legislature)

1. Protect, preserve, and use natural surface and groundwater storage and retention systems.
2. Minimize public capital expenditures needed to correct flooding and water quality problems.
3. Identify and plan for means to effectively protect and improve surface and groundwater quality.
4. Establish more uniform local policies and official controls for surface and groundwater management.
5. Prevent erosion of soil into surface water systems.
6. Promote groundwater recharge.
7. Protect and enhance fish and wildlife habitat and water recreational facilities.
8. Secure the other benefits associated with the proper management of surface and groundwater.

## Bolton & Menk Helps Cities Wade Through Complex Wetland Regulations

**T**he Minnesota Wetlands Conservation Act—signed into law in 1991—mandates that every government jurisdiction designate a Local Government Unit (LGU) to manage its wetland issues. For many smaller communities, this can be a real burden. The issues are complicated, and cities' investments in staff training are often thwarted by high turnover.

Bolton & Menk has been providing a solution to this dilemma for about three years now.

Bolton & Menk currently handles LGU responsibilities for 11 communities. Technically, they are the city's LGU *agent*, while the city is the LGU in fact and must sign off on all documentation. Bolton & Menk's expertise allows a city to maintain compliance with the Wetlands

Conservation Act (WCA) without the added stress of having to keep up with tedious details and rule interpretations. They also work with cities that have their own LGU person on staff.

"We are very familiar with the rules," says Bolton & Menk water resources expert Bill Douglass. Equally important, "this relationship between us and municipal governments does everything to satisfy the WCA requirements."

Issues that Bolton & Menk are likely to get involved with, on behalf of a city, may

include encroachment, cease and desist orders, proposed mitigation, or a host of others. One such scenario might arise when a developer proposes a development around a wetland. The city or LGU can call in Bolton & Menk to represent its interests and address any potential concerns.

Bolton & Menk helps the city follow the proper procedures and meet all deadlines throughout the proposal and permitting process. This helps to prevent any loss of control over the affected wetland, which may require the Board of Water and Soil Resources (BWSR) to step in.

**A**lthough it is not required, Bill Douglass recommends developing a wetlands management plan in conjunction with an SWMP. One big advantage: if the wetland plan is a subpart of the SWMP, and the overall plan is BWSR recognized, a city may use storm water ponds for wetland mitigation credits. Also, if a city has a wetland plan in place, LGU duties become much easier.

"The entire process can be overwhelming for cities," Douglass notes. "We can help cities understand and maintain control over the process."

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conditions and the modeled proposed conditions to evaluate proposed developments. This data is also stored on Bolton & Menk's server system and is available for future updates as the cities' circumstances change.

As an example, assume that a proposed development includes 80 percent impervious surface area. Bolton & Menk's digital modeling will show the current plan for the area and will allow city planners to review whether the proposed development fits with the original plan. Bolton & Menk staff can easily update the model to project what the effects of any changes in runoff will be after the development, and plan accordingly. The model and maps are typically updated annually so that recent changes are included in the current model. All of this information is available to the cities.

"That's the real value to cities," Douglass points out. "This is a practical, useable plan." "It doesn't sit on a shelf."

Once a draft plan is completed, Bolton & Menk submits it to the city council for review. Upon approval, the city then sends it on to the county. Upon county approval, the plan ultimately goes to BWSR for final acceptance.

For more information about the SWMP process and associated benefits, contact Bill Douglass at 507-625-4171 or [billdo@bolton-menk.com](mailto:billdo@bolton-menk.com).

# League of Minnesota Cities

## 2004 Conference & Marketplace



**Join us** in Duluth for the  
2004 League of Minnesota Cities  
Annual Conference and Marketplace.

October 10-12, 2004  
Duluth Entertainment and Convention  
Center

**Stop and see us** at booths 61 and 62.



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