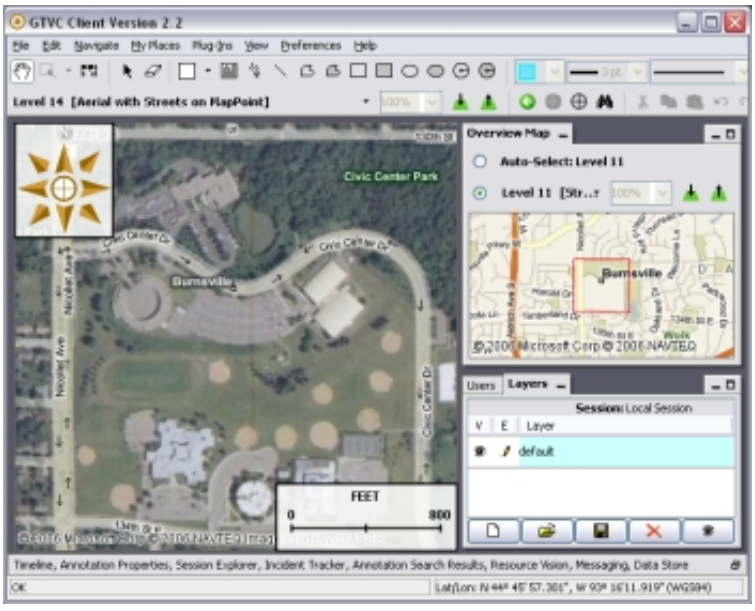
Fall 2007 - Department Spotlight: Resource Vision and GTVC - What It Means To Burnsville

by Dan Carlson, Emergency Manager, City of Burnsville

Resource Vision and the Geographic Tool for Visualization and Collaboration (GTVC) are two separate yet interconnected pieces of the National Emergency Management Network (NEMN). Simply put, the NEMN allows subscribers to incident map using a variety of mapping servers, integrating universal or custom symbols and free text options. At the same time, assignment of local assets and resources to an incident from pre-built teams and databases can be made.

Resource Vision is a database model that allows agencies to input any database containing personnel, resources, volunteers, facilities, etc. The model is then used to build preset teams for use in disaster response. It can also be used for FEMA and National Incident Management System (NIMS) tracking for costing, availability, etc. The NEMN databases are populated by subscribers across the nation, and as more agencies come on-line, the available assets will increase. For Burnsville, it means having resources available to use from other agencies and allowing others to see and access our resources if needed elsewhere. All resources are NIMS compliant, and pre-coded for integration into NIMS forms for timely reimbursement if needed.



Geographic Tool for Visualization and Collaboration (GTVC) mapping interface connects all emergency responders via a collaborative map.

Aside from disaster response, the application has day to day, practical application for both pre-planned events as well as the emerging critical incident. The tracking feature of the GTVC software allows for playback later of the entire event as recorded, message posting, incident data tracking and layer mapping for each discipline which can be viewed or not as the operator selects.

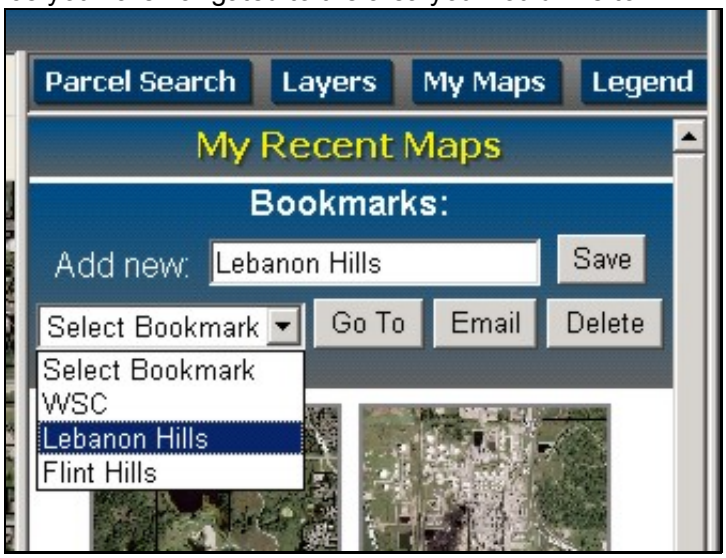
As more Dakota County agencies come online with the NEMN, our ability to respond county wide to mutual aid requests for equipment and personnel will become more timely and tracked better with the use of this system.

Fall 2007 - Desktop GIS: Using Bookmarks in Dakota County GIS

by Mary Hagerman

We are all familiar with the concept of Favorites in our web browsers. They allow us to save websites that are of interest so that we can quickly and easily go back to them when we need to. Bookmarks in Dakota County GIS have a similar function. They allow us to save, or bookmark, map locations so that we can return to them whenever we need to.

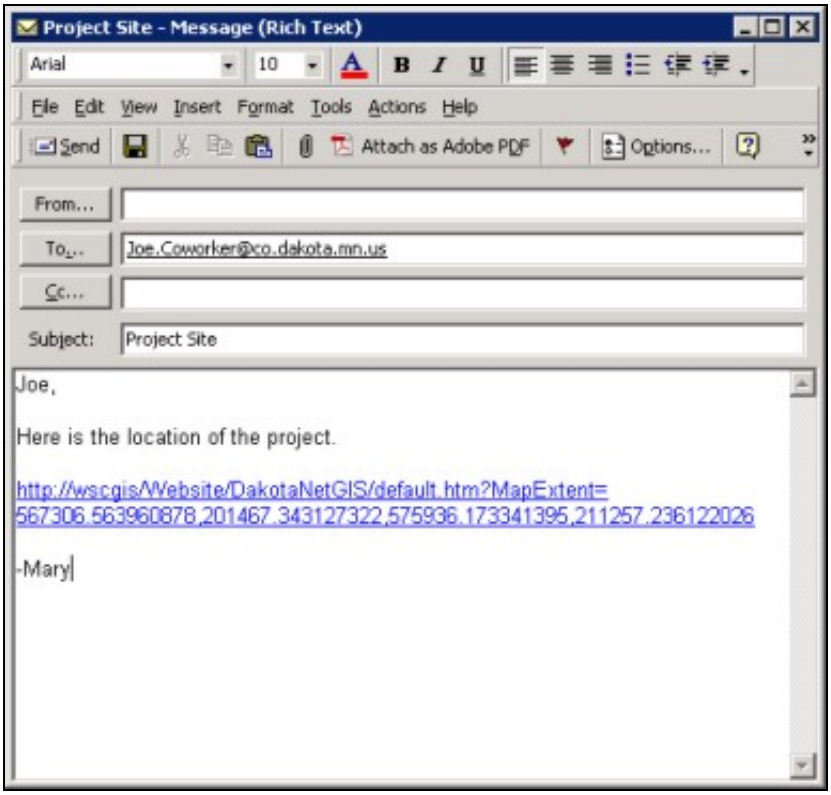
Bookmarks can help store a variety of locations. You can bookmark project areas, service centers, clients homes, incidents, etc. Bookmarking will make it easier to quickly navigate to the areas you work with most frequently. It is easy to create a bookmark in Dakota County GIS. Once you have navigated to the area you would like to bookmark, click the 'My Maps' tab. Enter a name for your bookmark in the 'Add new' box and click 'Save'. Your new bookmark will now appear in the 'Select Bookmark' dropdown.



Once you save a bookmark you can access it anytime. Choose the bookmark from the 'Select Bookmark' dropdown and click 'Go To'. Dakota County GIS will zoom to the bookmarked location. When you no longer need a bookmark, you can delete it by choosing it from the dropdown and clicking 'Delete'. Bookmarks are saved as cookies so they are available to you even if you have closed and restarted Dakota County GIS. Because bookmarks are saved as cookies, they are only available to you on your computer.

You can share bookmarks too. Bookmarks can be emailed right out of Dakota County GIS to coworkers or colleagues at other agencies. Just choose the bookmark from the 'Select Bookmark' dropdown and click 'Email'. A new email message will open that you can address and send to whomever. The body of the message will contain a link that when clicked will open Dakota County GIS zoomed to the bookmarked location. In this way, you can easily convey a location to someone without having to try to describe it. The ability to share bookmarks can be useful for collaborating on projects, notifying someone of the location of an event or incident, or as a replacement for a map. Instead of giving someone a site map of a location, you can just email him or her a bookmark.

Using the bookmark capabilities in Dakota County GIS can be an efficient way to organize your work. Bookmarks will help you access locations faster; you will not need to spend valuable time navigating to the same locations over and over again. Bookmarks can also be an effective way to communicate with other city and county staffs that may be working on the same project or have an interest in the same location. To learn more about how bookmarks can be used in Dakota County GIS, ask a GIS Specialist or sign up for Dakota County GIS training.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-Mary

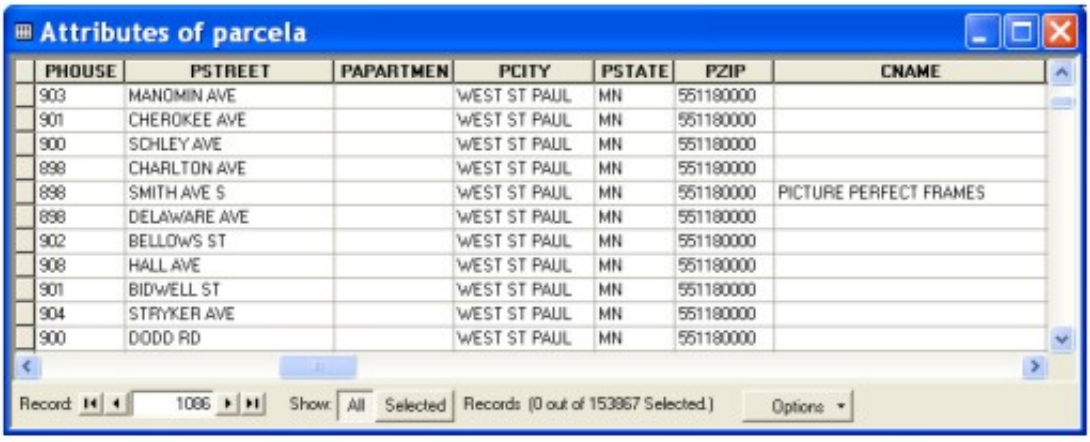
Fall 2007 - GIS 101: What is a Data Model?

by Randy Knippel

According to Wikipedia, the term “data model” refers to “…an abstract model that describes how data is represented and used.” It is a collection of information that has a specific purpose. It defines information elements and their relationships in abstract terms. It answers questions about what information is stored and how it relates to other information or other data models.

In GIS, data models are used to define what attributes are, how they are related to features, what the logical relationships are between those attributes, and the geometric relationships between the features themselves.

Attributes are database fields associated with a geographic feature. A parcel of land is a geographic feature that has attributes like owner name, property address, taxes, and



values. A sewer system is composed of pipes that have attributes describing the type of material and date of construction, but also geometric relationships that define their connections to each other to form a network.

When two or more data models for similar features are compared, common elements can be identified that might allow them to be combined into a single data model accommodating most of the needs served by the individual data models. A single data model provides additional advantages for analysis over a larger area or for developing applications for a wider audience.

Dakota County, along with the other six metro counties in the Twin Cities metropolitan area, have developed a common data model for parcels through MetroGIS, a collaborative organization sponsored by the Metropolitan Council. Similarly, Dakota County has developed a zoning data model that allows maps to be created showing residential, commercial, and industrial areas across the County while preserving the unique zoning codes assigned by each city. The Dakota County GIS Users Group is exploring opportunities to create countywide data models for other data typically maintained by cities, such as water and sewer utilities and building permits.

Sharing a data model across jurisdictions adds value to the data provided by each jurisdiction by allowing it to be used for more purposes, including regional analysis. It allows for efficiencies gained through sharing applications and databases by eliminating duplicate effort to create and maintain them. It also provides opportunities to learn from each other to create more effective work processes incorporating the best ideas from all collaborators.

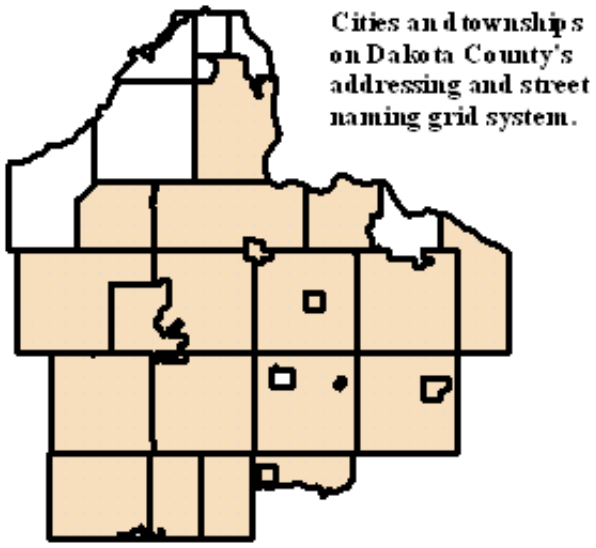
Fall 2007 - Tech Talk: The ABC's and 123's of Dakota County's Address Grid

by Todd Lusk

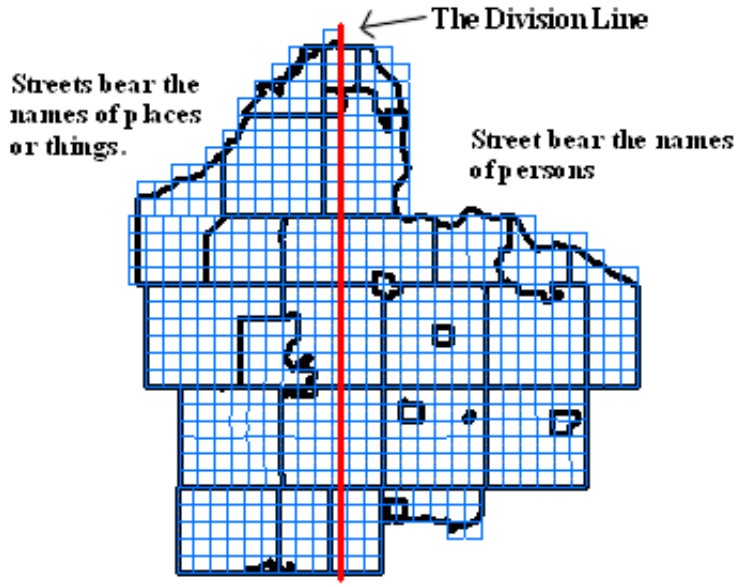
Did you know that Dakota County uses a “grid” system for naming its streets and assigning addresses? Do you know how the system works, what it based on or what its purpose is? Believe it or not, it is possible to navigate your way through most of Dakota County without the aid of a GPS, a street atlas or an online mapping website (like Google Maps, Yahoo! Maps, etc.)

Dakota County has an ordinance called the Uniform Street Naming and Addressing System (USNAS). The goal of the ordinance is to lay the groundwork for a consistent way of naming streets in the County and for assigning addresses along those streets. When applied consistently, the ordinance can be a huge benefit to people like delivery drivers and emergency responders who regularly have to navigate the County’s streets. The USNAS basically defines a “grid” that lays out street naming and address range guidelines.

Not all cities use the County’s street naming and addressing grid. Older portions of the County, which were already established prior to the enactment of the ordinance, continue to use their own naming and addressing systems.

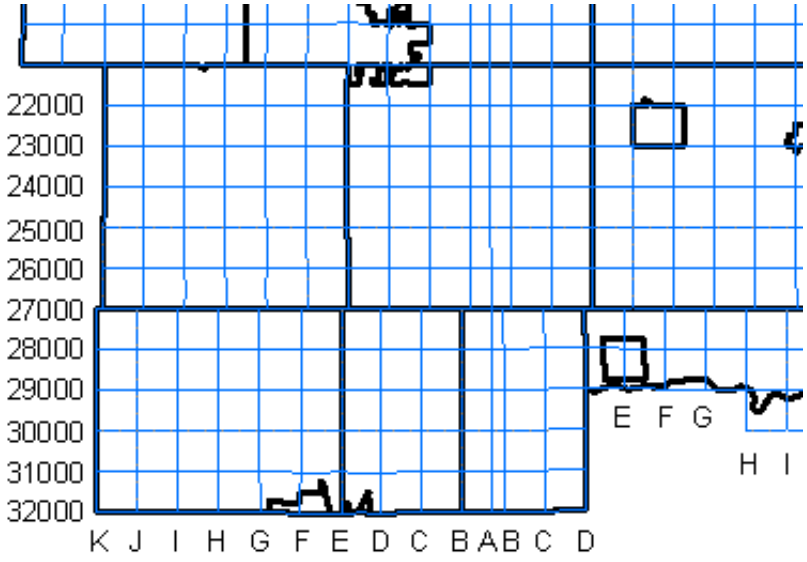


Dakota County’s address grid is based on one-mile square cells that generally follow public land survey sections. East-west streets are given numerical names (i.e., “150th Street West”) and north-south streets are named after persons, places or things. A division line running north-south through the County marks the alphabetical starting point for names of north-south streets. That line also marks the starting point for building numbers on east-west streets with a range of 1,000 addresses (500 even and 500 odd) in each grid cell.



North-south streets on the east side of the division line bear the names of persons. Those north-south streets on the west side of the line bear the name of places or things. All names for north-south streets are in alphabetical order and begin with a new letter of the alphabet for each mile further from the division line one travels.

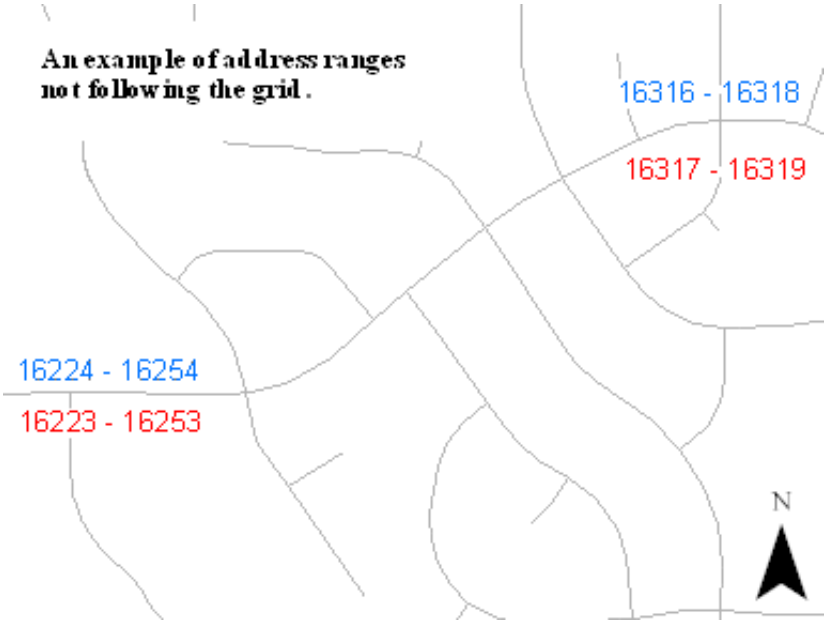
East-west streets have numerical names that indicate their distance south of a base line geographically in line with the State Capitol building in St. Paul (e.g., 150th Street is 15.0 miles south of the base line).



A portion of Dakota County's address grid.

The benefit of this grid system is that we can “calculate” a theoretical address location with any given northing and easting. Because we know the name of the street, and what type of name it is (i.e., a place, thing or person), we can get a rough idea of where the street is located in the county. Then with the house number we can get a rough idea of how far south in the county we need to go.

The whole scenario gets slightly more complicated when curvilinear streets in developments come into play. It is possible for a street to “turn back” on itself and this can create problems with the house number ranges. First, because the street does not run perfectly east-west, it must be a “north-south” street per the County’s ordinance. This forces those assigning the addresses to pick a “north end” of the street. Once that is done, an east and west side of the street is determined. That, in turn, determines which side of the street will have the even and odd house numbers. It is relatively easy to keep the addresses in line with the County’s Uniform Street Naming and Addressing System ordinance when following this process.



In the end this ultimately helps emergency responders, and others, navigate their way through the County quickly and effectively. On the surface the system might seem a bit confusing, but on closer examination it's fairly easy to understand the rationale and system behind it.