

HIGHLIGHTS

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MEETINGS & EVENTS

April 30, 2003

Dakota County GIS Users Group Meeting. Dakota County Western Service Center, Conference Room L139 from 1:00 p.m. to 3:00 p.m. View the complete agenda at

<http://dakotanet/gis/events/gisusers.htm>. RSVP to Julie.Daugherty@co.dakota.mn.us

Contacts

If you would like to write an article for the Spotlight section of the GIS News newsletter and share how you use GIS in your department, call or email Randy or Julie.

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GIS 101

Location-Based Analysis by Randy Knippel

A map is useful for understanding how locations are related to each other. It is easy to see how to get from one place to another using a roadmap. You can also measure distances between locations on a map. For a given location, it is also possible to gain an understanding of other features that are in its vicinity. While a map allows you to make these determinations visually, GIS also provides tools to do these types of analysis, and much more, automatically.

Typical data analysis uses database techniques to relate pieces of information using common elements. Creating relationships between a list of service providers and a list of clients using service providers allows for the selection of clients using service providers with particular characteristics. GIS allows that kind of analysis as well but adds the ability to use location also. This allows the selection above to be refined by finding the closest service provider for each client or the distance from each client to a particular service center.

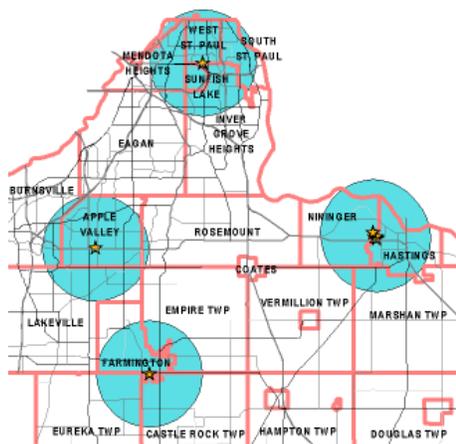


Figure 1 – Three mile buffers

Other data can be combined to support more complex kinds of analysis. For example, by combining property information, census data, and service

center location, we can generate profiles of the community within certain distances of each service center (Figure 1).



Figure 2 – Property values

An area of interest can be created around each service center by specifying a 3 mile radius. These area buffers are then used to select parcel and census data within the areas, summarize it, and represent it in a chart (Figures 2 & 3).

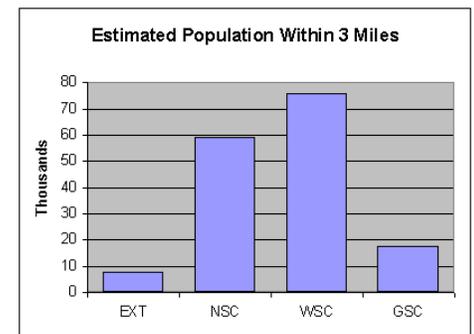


Figure 3 – Total population

This same technique can be applied to many other situations involving more complex kinds of questions such as:

What is the estimated property damage caused by a tornado?

How many people would be affected by a chemical spill at a specific intersection?

What is the estimated assessed land value for the property required for a new road?

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Where are the highest valued homes adjacent to county roads in Apple Valley (Figures 4 & 5)?

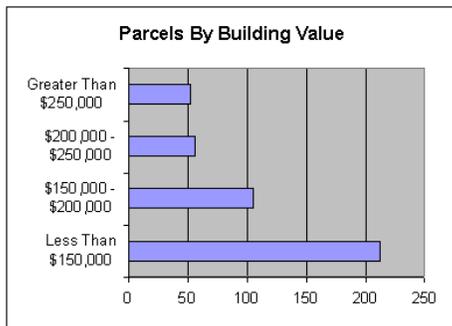


Figure 4 – Summary of building values for residential properties along county roads in Apple Valley

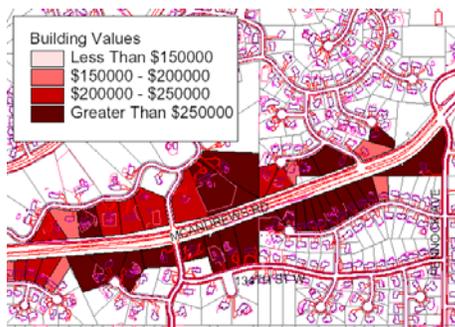


Figure 5 – Map showing selected properties along a county road in Apple Valley

In general, GIS technology provides an additional level of analysis for information about communities by allowing location to be included as an element. Typical database analysis allows queries and reports on combinations of data elements and relationships between data elements. GIS extends those capabilities by allowing geographic relationships between locations to be included in the analysis as well.

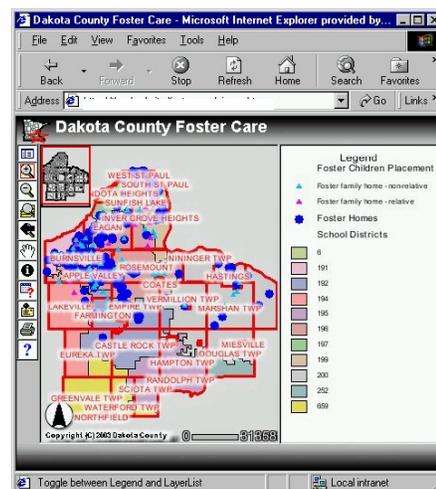
Department Spotlight

GIS in Social Services by Gerilyn Courneya

Imagine being a child who has the need to leave your family home (for any number of reasons)—you are afraid, don't know what is happening or where you are going. Would you feel less anxious knowing that you will still get to go to your own school, see your friends, and continue to

participate in your community? Every year, hundreds of children are placed in safe and nurturing Dakota County foster homes, licensed by our department. These children are often experiencing significant and multiple life disruptions. It is our goal to attempt to keep as much consistency as possible in their lives as they enter foster care. At the same time, we also have primary responsibilities that include monitoring our currently licensed homes and recruiting new foster families.

Dakota County Children and Family Services are excited to have the opportunity to partner with the Office of Geographic Information Systems (GIS) in the area of foster care. Since it is said that a picture is worth a thousand words, the GIS mapping not only provides us with information to assist us in our work, but also offers a great visual aid as we work with the community and Dakota County upper management in providing education and sharing information in regards to our foster care system.



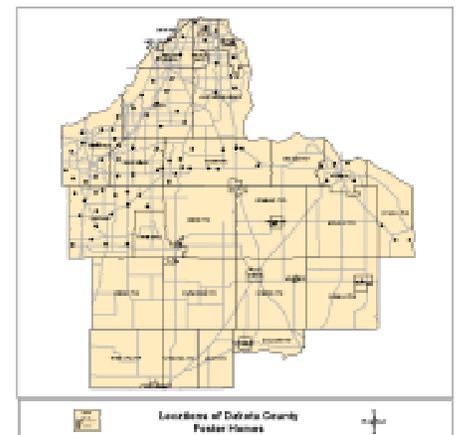
Screenshot from the Foster Care ArcIMS Application (Actual Foster Care data is not shown.)

More specifically, GIS mapping is assisting the foster care unit in the following ways:

- Best practice stipulates that foster children should be placed in the same geographic area as their home—to provide continuity of school, church, friends and

community. We are interested in assessing where foster children come from geographically and in which foster homes they are eventually placed. Through GIS mapping, we are able to depict the location of our current homes, as compared to the address of the child's home location—visually depicting the distance of the child's relocation.

- GIS mapping will also assist us in the recruitment process, to help target specific geographic areas where we need to increase the number of foster homes. We are also using GIS visual mapping as a recruitment tool. For example, as part of an educational effort, we can show community members and leaders that foster children, in fact, do come from their communities.



Sample Foster Care Home Map (Actual Foster Care home data is not portrayed on this map)

- Per Minnesota state law, all counties are mandated to place sibling groups together, with the preference of first placing the children with extended family members or friends, or with a foster home of the same culture or religion. GIS mapping allows us to track the race/ ethnicity of both foster parents and foster children which will assist us in making more appropriate matches, and monitoring our compliance with state statute.

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- The Foster Care Unit is tracking the age groups and gender of children who are placed in foster care. The visual advantage of GIS mapping is we can better understand current trends in regards to children in foster care and assess whether we have a sufficient number of foster homes could can serve these children who are in need of foster care. (e.g. there is a current need for foster homes who can care for 11-14yo boys)
- Minnesota law also requires counties to adhere to placement timelines, based on the age of the child in placement. These timelines prevent children from being in long term placement without a permanency plan in place. Length of time in placement is tracked via a color coded system (through GIS mapping) and assists the Foster Care Unit/Children & Family Services Section in monitoring our compliance with state statute.

This mapping occurs through the linkage of various databases, including those which house the numerous client and foster home characteristics cited above. Databases being accessed include the State of Minnesota's Social Services Information System (SSIS), and the Dakota County's mainframe application (CICS). The various maps will be continuously updated through these electronic links and will be accessed directly by department staff—for up to the minute information, allowing staff and our recruiters to offer comprehensive and accurate data upon demand. 🌐

Desktop GIS

Introducing ESRI's Virtual Campus by Todd Lusk

Have you ever had one of those days? A day where you would just like to get away from it all and do something away

from your daily routine, away from your projects? Something fun and maybe even educational? Maybe something like taking an interesting class? Now you can! Introducing the ESRI Virtual Campus.

ESRI's Virtual Campus is a self-paced, cost effective, online educational tool. It combines hands-on learning with instructional support in a web-based format. Courses cover a variety of topics ranging from basic GIS concepts to complex analysis methods using tools like 3-D Analyst and Spatial Analyst. Even better, you can get it all at a pretty good bargain rate. Registration to the Virtual Campus is free. The only cost to you is when you decide to take a class. Some classes are even offered for free.



Virtual Campus Course Catalog Page

Virtual Campus courses are organized into three major categories: GIS technology courses, GIS application courses, and GIS science courses. The technology courses teach how to use specific ESRI software to solve GIS problems. The application courses teach how GIS is used to support decision-making in a particular industry. Finally, the science courses focus on the theory of GIS and cover conceptual reasons for using GIS. Each category contains a wide range of classes for different pieces of software and technological know-how.

Each class is divided into “modules” with each module sub-divided into lessons and exercises. The exercises include step-by-step instructions and pop-up windows to show what your results should look like, providing a hands-on opportunity to practice what

was covered in the lesson. Each lesson typically ends with a lesson summary and a self-test. Each module, in turn, ends with a “module exam” which tests your overall understanding of the concepts. All of this is organized in a way that allows you to learn at your own pace.



Technology Courses

Most of the Virtual Campus courses cost about \$100. In most cases, the first module of a class is free so you can find out if the course is what you expect it to be before purchasing it. Some of the courses, such as “Migrating from ArcView 3.x to ArcGIS 8.x,” are completely free of charge.

If you don't have a particular piece of software, you can download trial versions that can be used for the course. The data for the courses is pre-packaged and downloadable in WinZip format.

Upon successful completion of a course you will be awarded a certificate that you can proudly display on your wall for your co-workers to see. They will be amazed and impressed at your accomplishment! 🌐
(Find ESRI Virtual Campus courses at <http://campus.esri.com/>).

Dakota
COUNTY



Tech Talk

Importing Projects from ArcView 3.2 to ArcMap 8.2 by Kent Tupper

An essential step in migrating from ArcView 3.2 to ArcMap 8.2 is converting your ArcView projects to ArcMap Map Documents. ESRI provides a utility to help with this process. The 'Import from ArcView project' utility is designed to help you to bring your ArcView projects into ArcMap.

The following excerpt from the ArcMap Desktop Online Help details the steps you need to follow when migrating your projects:

1. Start ArcMap and open a blank map document.
2. Click the File menu and click Import from ArcView project.
3. Navigate to and select the ArcView project you would like to import to ArcMap. If you are importing a layout, choose the layout you would like to import from the Layouts dropdown list. The views that are in the layout will be automatically selected. Views that are not in the selected layout may be selected interactively.
4. Click OK to import the project. The selected import layout is now the layout view in ArcMap. Some graphic and text adjusting may be required to get the desired look for the map layout. The imported views are now separate data frames located in the table of contents.

Tips

- ArcMap does not support multiple layouts in a document. Importing ArcView projects with multiple layouts requires that you choose only one layout to import. Each layout in your ArcView 3.2 project will need to be imported as a separate ArcMap document.
- Move from layout view to data view to see a single data frame in the window. Having multiple data frames in ArcMap is the equivalent of having multiple views in ArcView GIS 3.2. The active data frame will be visible in the view and will be the only data frame with the title in bold letters in the table of contents. To activate a different data frame, right-click the data frame's title in the table of contents and select Activate from the list of options.

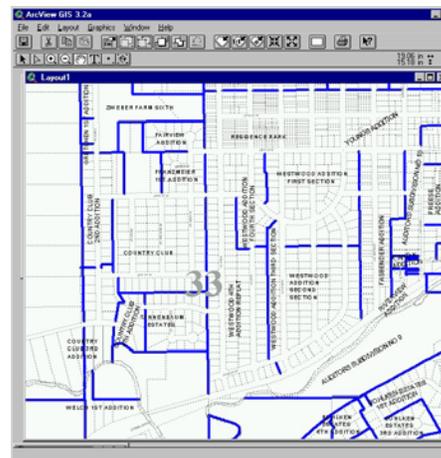
To import multiple layouts from an ArcView GIS 3.2 project, import each of the layouts in your ArcView 3.2 project into a separate ArcMap map documents (.mxd).

Now you know everything you need to know about Importing ArcView 3.x projects...Not Quite!

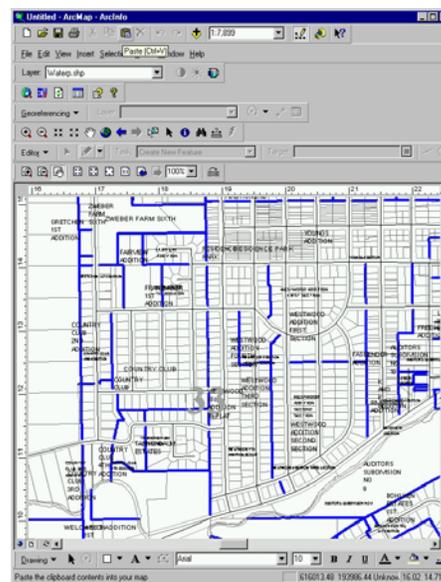
There are numerous pitfalls and caveats:

- Customization does not get migrated, though scripts can be imported.
- Imported graphic text can have problems with position, rotation and size. Attachment to a theme is also lost.
- Certain symbology can be lost - some polygon cross-hatching, for example.
- As mentioned above, only one layout can be imported per project.

The following is a typical example of importing an ArcView 3.2 layout into ArcMap 8.2.



ArcView 3.2 Layout



Imported into ArcMap 8.2

Simple projects work well using the import tool in ArcMap. If the project is more complex you can try importing it to see what happens, but it may turn out to be easier to start over, taking advantage of the new tools and features available in ArcMap. Labeling capabilities have been improved, making use of conflict resolution. Also, layout tools for legend creation, north arrows, and scale bars have many more options.

If you have existing ArcView 3.2 projects that you would like to convert to ArcMap, feel free to contact any of the GIS Specialists in the Office of GIS for assistance. 🌐 *The main number for the Office of GIS is 952.891.7081.*