City of Benson, Arizona

Customer Success Story

AutoCAD® Map 3D®

"We accept and deliver ESRI and Autodesk formatted data and collaborate easily with state and county agencies and utilities and contractors."

—Michelle Johnson
GIS Manager
City of Benson, Arizona

Small Town Sees Big Rewards

Arizona town builds infrastructure management solution using existing staff and expertise

Project Summary

Tasked with building a GIS for the City of Benson (Benson), Arizona, city officials saved money and time by relying on existing engineering and trained AutoCAD staff to build and maintain the city's infrastructure management solution. Now city engineers and public works staff work in concert with the city's GIS manager to ensure that every city department can access accurate geospatial data built with engineering precision.

Using Autodesk geospatial software, Benson is able to:

- Avoid traditional staffing and training expenses in building their geospatial and infrastructure management solution
- Take advantage of AutoCAD training and AutoCAD Map 3D's spatial editing tools
- Collaborate easily with agencies using other GIS software
- Work with multiple geospatial data types in their native format and in a CAD environment

The Challenge

Located in the scenic San Pedro River Valley in southern Arizona, the City of Benson is a small town faced with interesting challenges. Although the town claims a permanent population of approximately 5,000, this number triples during winter months when temporary residents from northern states move to Benson to enjoy its mild weather. And like many towns in Arizona, Benson's permanent population is also growing quickly. State economists project that the town's permanent population will triple in the next 20 years.

Part of the city's growth comes from recent commercial and residential development. The increased tax revenues generated by this growth provided the city with an opportunity to invest in its IT infrastructure. Jared Riker, the city's IT Manager, approached a handful of geospatial software vendors. "I knew very little about GIS," admits Riker. "I was tasked to obtain software for the new GIS Manager that was soon to join the staff."

Autodesk®

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The Solution

Among the calls Jared made, he contacted CADsoft Consulting's Bill Grimm, an Autodesk representative. "I took Jared's call late on a Friday afternoon when he first requested a software price quote," recalls Grimm. "I suspected that the new GIS Manager would want to help choose the GIS software that she would be using for years to come. Plus, it was hard to know exactly what the city needed without meeting them in person. I convinced Jared to wait until the GIS Manager started her job and she could meet with all the software vendors."

Like many geospatial IT professionals, the new GIS Manager was trained in ESRI technology and had no experience with Autodesk geospatial software. "In college, I learned everything I know about GIS by using ESRI software like ArcGIS," notes Michelle Johnson, Benson's GIS Manager. "Before joining Benson, I was an urban planner and used ESRI's GIS software exclusively. I had no experience with any Autodesk products."

After she began her new position at Benson, Johnson researched various software solutions, including those offered by ESRI and Autodesk. "I met with folks from both companies, but we ultimately chose Autodesk software," Johnson remembers. "I know that may seem counter-intuitive for some longtime GIS users, but it made sense for Benson. Tasked with building the city's GIS from scratch and with a modest budget, I realized that I could enlist help from my colleagues in engineering and public works and that it would be a system that they could embrace quickly. Plus, AutoCAD Map 3D is great at editing geospatial data."

Overcoming the First Hurdle

As any experienced GIS professional can attest, the upfront cost of implementing a GIS can be steep. Just as steep, the learning curve for traditional GIS software forces many organizations to hire specially trained staff. The expense of scanning paper and Mylar maps, converting digital CAD drawings, cleaning this data and then training existing staff or hiring additional GIS professionals can make GIS implementation a costly challenge for many small towns.

By selecting an AutoCAD-based geospatial solution, Benson can now take advantage of a team of well-trained engineers and public works employees who thoroughly understand AutoCAD. These employees quickly began using AutoCAD Map 3D to georeference design data, add data attributes and build spatial topologies where none previously existed. Plus, the engineering team had a deep knowledge of the existing digital designs and paper maps that would serve as the foundation for the infrastructure database.

"It was a real no-brainer," remarked Bradley Hamilton, Benson's Director of Public Works. "AutoCAD Map 3D gave us the GIS tools we needed, but allowed us to use our AutoCAD expertise, reducing training time and expenditures."

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The Result

Team Ownership

Still in the early stages of implementation, the City is already seeing the benefits of linking their engineers closely with the development of the infrastructure database. GIS Manager Johnson and Public Works Director Hamilton note how there is a strong sense of ownership throughout the city staff for the new geospatial solution. Engineers are not just another data provider for a separate GIS team, but they are part of the geospatial team itself. The system would not be possible without their efforts, training and experience.

AutoCAD to AutoCAD Map 3D Migration

As the boundaries between CAD and GIS continue to blur, AutoCAD Map 3D offers a "geospatially aware" version of AutoCAD. It provides engineers with the software interface and data editing tools they already know and the GIS tools they require. "I have been using AutoCAD since release 12," explains engineer Hamilton. "But we do need some GIS features. Now we have access to those features and we can play an important role in building and maintaining the city's GIS database. It is a win-win-win situation; the engineers are happy, the GIS manager is happy and the city manager is happy."

Another advantage that the city recognized is how AutoCAD Map 3D makes building an online application straightforward by delivering one-click web publishing. "Eventually, the city wants to quickly and easily publish their maps online using Autodesk MapGuide Enterprise," says Bill Grimm from CADsoft. "Map 3D is so well integrated with the web tools that it really is easy to unlock all that valuable data and provide it to a larger audience and the public."

FDO Data Access

Using native GIS file formats like SHP, AutoCAD Map 3D absorbs data into the system without the need for costly or potentially dangerous data conversion. The Feature Data Object (FDO) technology available as open source software (www.osgeo.org) and integrated into AutoCAD Map 3D means that the Benson team can access native data whether in files or databases in nearly any format. This means that teams using AutoCAD Map 3D can work with up-to-date information, ensuring everyone on a project is making decisions using the same information.

"When we show local governments how dead simple it is to manipulate, edit and incorporate data in its native format with these tools," notes Bill Grimm from CADsoft, "their mouths drop open in stunned silence."

Year One Progress

In less than one year, the city is seeing fantastic results using the software for database maintenance and thematic mapping. The city now has access to a complete and current map of the city for management and planning. They have built accurate and engineering-precise landbase and utility network maps. All of this information must be delivered to the Arizona State Cartographer's office – a task the city performed in the past with paper maps.

For the first time, the city submitted these records digitally in ESRI SHP file format while it continues to share DWG data with local developers and utilities. The city is also saving time and money by building the general development plan in-house, a task previously outsourced to local contractors.

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“We have saved money and time while becoming more efficient with our new GIS,” notes Johnson. “We accept and deliver ESRI and Autodesk formatted data and collaborate easily with state and county agencies and utilities and contractors. If we ever do purchase ESRI software, the two software systems will work well in tandem.”

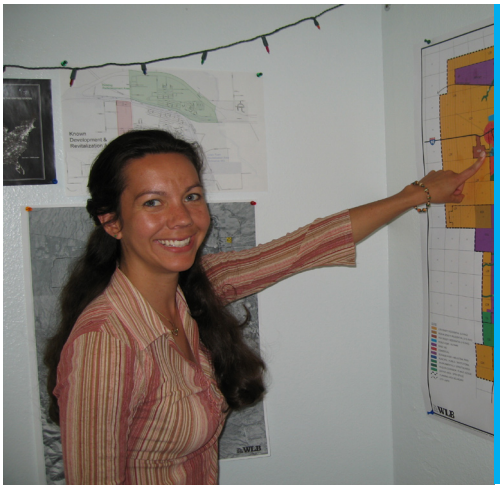
The city also plans to build online mapping applications for internal and public use. “We store our data in an Oracle Spatial database and the city purchased a copy of MapGuide Enterprise,” Johnson adds. “I am eager to build the geospatial web portal for easier access inside the city, but also to provide our citizens with simple access to their property, zoning and other important maps. For a small town, Benson has profited by using existing staff and our geospatial and engineering expertise to build a full-featured solution.”

Geospatial Value Chain

The City of Benson is currently a Stage 2 customer, using AutoCAD Map 3D for tasks such as georeferencing design data and geospatial editing. For more information about Autodesk’s Geospatial Value Chain, visit www.autodesk.com/geospatialpaper.

Learn More

To learn more about how AutoCAD Map 3D is helping organizations quickly and easily maintain their GIS, visit www.autodesk.com/map.



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