

Strategically Planning a County GIS

County GIS coordinator transforms a GIS into a budding, decentralized, enterprise-wide, service oriented organization.

Nestled quaintly along the banks of the Brazos River, southwest of Harris and Waller County, lies Fort Bend County, TX. Fort Bend has long been known for its established agriculture production, grass-roots politics, and rapid urban growth. However, many may not be aware of its GIS and how it has been transformed from a stagnant, single department shop to a growing GIS enterprise with systems and applications used throughout the entire county organization.

GIS is no newcomer to Fort Bend. Ever since 1996, GIS has been used by the engineering department to assist staff and residents with maps and geographic information. Yet, by the time Robert LaBarbera, the GIS Coordinator, arrived in 2001, the GIS was starting to exhibit multiple problems. Problems, that if not resolved soon, would continue to impact both the present state of the GIS along with its future.

When he was first hired, LaBarbera noticed various problems based upon urban, organizational, GIS, and informational technology (IT) growth within the county. A change in the way the GIS

was managed was needed and he hypothesized that his newly gained strategic planning tools, gained from his futures coursework, might help solve some of the problems that he faced. A few of the problems were:

- No inter-departmental GIS communication
- Limited personnel resources: one GIS staff person (the coordinator) assisting all county departments, elected officials, and the general public
- GIS technology stagnation
- No GIS functionality for internal or external clients
- No countywide GIS policy

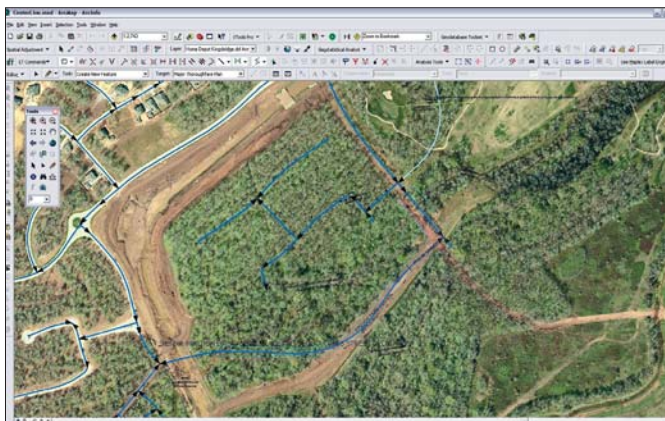
LaBarbera realized that many governmental and private agencies share most of the same issues that he faced along with the fact that many organizations lack the strategic knowledge to effectively deal with these problems. If he was successful, it would demonstrate how government was striving to be more efficient and service oriented. It would also demonstrate and promote his other technical field: futures studies.

One of his goals was to show that a formal strategic planning exercise was not needed to make a formidable dent in the problems that he faced. A simple, scratchpad strategy, with tried and true strategic planning tools, might handle the problems. Another goal was to show that any

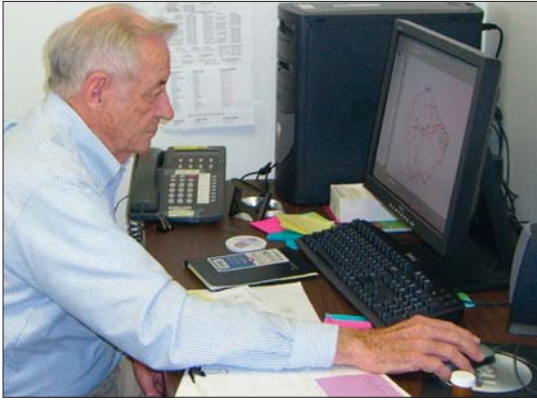
public or private agency could use the same tools, relatively quickly and easily, to assist with similar problems. The final goal was to show that the tools used made a change for the better based on the positive survey results received from clients.

What follows is a list of various strategic planning tools that were used.

- Environmental Scanning—Search for pertinent, up-to-date information sources that provide fact-based (numbers, charts, and figures) information on social, technological, environmental, economic, and political aspects on the subject area of interest. LaBarbera used web sites, news feeds, periodicals (both electronic and hard-copy), and technical conferences to gain valuable information and spot emerging trends within the GIS field.
- Strengths, Weaknesses, Opportunities, and Threat Analysis—Identify the strengths (organizational attributes helpful to your goals), weaknesses (organizational attributes that are detrimental to your goals), opportunities (external conditions that are helpful to the achievement of your objectives), and threats (external conditions that are detrimental to the achievement of your objectives). Document all of these and collaborate with all your stakeholders; they may see strengths, weaknesses, opportunities, and threats that you do not see. Once you identify your internal weaknesses and external threats, proceed to the next tool.
- GAP Analysis—In this step you compare your present performance with your potential performance to



Mapping application screen shot.



A Fort Bend County engineer utilizes the centralized GIS.

determine how much time, money, and resources it will take to reach your desired goal(s). Simply take the internal weaknesses and external threats that you have documented and brainstorm ideas on how you want to resolve them. Finally, determine the resources, time, and money needed to close the gaps between what you have at present and what you want in the future.

- Scenarios and Contingency Planning—Scenario building involves envisioning a future organization based upon multiple possible scenarios that could occur. Environmental Scanning will help you envision various trends that could be emerging on the “time horizon.” Remember that these are your scenarios and your ideas—do not be afraid to think out-of-the-box and come up with scenarios that the administration may say will never occur. Also, build as many scenarios as you think there should be; LaBarbera envisioned a negative scenario, a positive scenario, a wildcard scenario that involved a non-planned event, and finally, a scenario that he desired. The key is plotting out all the facets of your scenarios with as much detail as possible; don’t leave any stone unturned from your Environmental Scanning data or your own imagination. This way, you can prepare for the next step—Contingency Planning—when you take your bad case scenarios and brainstorm ways to deal with possibilities that may arise in the future.
- Brainstorming—Brainstorming

involves coming up with various unique thoughts and ideas and was used in different degrees with all of the previously mentioned tools. However, the GIS staff used the brainstorming technique collectively to determine the vision and mission of the GIS. Once the vision and mission was adopted, it was not placed upon a top shelf to stagnate or to be forgotten; the vision and mission statements are updated, as needed, to keep the organization focused and prepared for the future.

After five years of strategically planning the GIS, certain products and systems resulted that addressed each problem LaBarbera faced. The following is a list and brief explanation of each.

Products

- GIS Work Request Form—No work tracking system existed to keep up with the vast amount of requests from departments, elected officials, and the general public. LaBarbera created the work request form to handle the massive workload and also to track the time it took for a request to enter the queue until the time the end product was finished. This way service order benchmarks could be obtained for better quality and faster service to GIS clients.
- GIS Policy— LaBarbera wrote the GIS policy that was passed through the commissioner’s court, which deals with training, data sharing, data centralization, hardware and software specifications, and finally, inter-departmental data management, communication, data ownership, and responsibility. The policy got all the departments talking to each other and now provides a wealth of information for departments wanting to start using GIS on their own.

Systems

- Internet Mapping Web Site (ArcIMS, ESRI, www.esri.com)— The county coordinator facilitated the construction and currently

maintains the county’s web-based mapping website, which has solved most of the problems of internal and external stakeholders not having access to GIS data and maps.

- Centralized GIS Data Repository— With the assistance of the IT department, the county coordinator installed and implemented the centralized GIS data repository (ArcSDE, ESRI). Over 250 different geographic layers are contained within an Oracle database that serves GIS data to numerous departments that employ multiple GIS users. Internal clients can now perform simple GIS tasks on their own without having to make requests of the GIS staff.
- Fort Bend Inter-Departmental GIS (FBIG) Group—The county coordinator established the FBIG group to facilitate GIS policies, training, data update, and general GIS communication among various departments.
- GIS Data FTP Site—Again, with the assistance of the IT department, the county coordinator facilitated the creation of a GIS file transfer protocol web server, allowing any person with an internet connection the ability to request access to the site, download, and use various GIS data layers of Fort Bend County.

Simply having a GIS or IT department is not enough in today’s thriving electronic or “e-culture” world; clients and stakeholders expect the latest and greatest technologies to solve their problems. Because of this, all public and private organizations need to employ strategic tools that can keep their organization abreast of emerging trends and future paradigm shifts in all subject areas, including the electronic medium: paradigm shifts that may impact their organization’s future.

Strategic planning and futures studies continue to be viable and worthwhile tools for managers of any type of organization to use. With the tools described herein and a little strategic planning knowledge, professionals can roll up their sleeves and implement positive changes that will benefit their clients, themselves, and their organization. **GE**