

# BusinessGeoInfoNews

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GIS for Business Solutions

## GIS in Action: Forest City Enterprises, Inc., Successfully Matches Retailers with the Best Properties

Forest City Enterprises, Inc., a \$7.2 billion real estate company headquartered in Cleveland, Ohio, operates under three strategic business units: commercial, residential, and land development. Forest City Enterprises is listed on the New York Stock Exchange under the ticker symbols NYSE FCEA and FCEB. Principally engaged in the ownership, development, acquisition, and management of commercial and residential real estate properties, the company's

portfolio includes interests in retail centers, apartment communities, office buildings, and hotels in 20 states and the District of Columbia. Forest City Enterprises has been in business for more than 80 years.

The growth of Forest City Enterprises depends on the continued improvement of its existing properties, the addition of new developments to its portfolio, and the timely acquisition of properties. Selecting retail properties

ESRI Business Analyst Online makes it easy for Forest City Enterprises, Inc., to highlight proposed sites for potential retailers.

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and matching them to the best prospective retailers is a major challenge facing Forest City Enterprises. Much of the company's success emanates from its strategy to diversify and capitalize on high-growth markets that have distinct competitive advantages. Forest City focuses primarily on large, unique, and complex projects in high-growth urban areas such as Boston, Massachusetts; Denver, Colorado; New York City, New York; Los Angeles, San Francisco, Redondo Beach, Rancho Cucamonga, Palmdale, Temecula, and San Diego, California; and Washington, D.C. These target markets account for more than half of Forest City's property locations. They are characterized by highly educated populations with above-average per capita incomes and above-average growth in per capita incomes.

To stay abreast of market analysis trends for property acquisitions, Forest City Enterprises

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## Market Analysis Strategies and Techniques

The power of a GIS in market analysis is its ability to quickly and powerfully define, quantify, and display the spatial relationships between supply (retailers) and demand (customers) in any geography no matter what strategy is employed.

Market analysis involves as much preparation as it does actual analysis. The best analyses always occur when you first understand your current customers, your own market offering, and your competitors. Then, you may determine which of many market analysis techniques and strategies to utilize and where.

### Understanding Your Customers

One of the most basic marketing steps is analyzing your customers. Because of the “cash-and-carry” nature of their business or the lack of systems to collect customer data, most retailers have little customer information available. Consequently, many retailers skip this step and use demographic or consumer expenditure data as a surrogate for actual customer data. This does not need to be the case, because customer addresses, necessary for profiling, can be collected through surveys, delivery records, credit card transactions, loyalty programs, etc., which makes customer profiling possible. ESRI’s ArcGIS Business Analyst and Community Coder enable businesses to use Community Tapestry, the foremost geodemographic segmentation system, to profile their customers. The Tapestry segmentation system ([www.esri.com/data/communitytapestry](http://www.esri.com/data/communitytapestry)) provides an accurate, detailed description of America’s neighborhoods. U.S. residential areas are divided into 65 segments based on demographic variables such as age, income, home value, occupation, household type, education, and other consumer behavior characteristics.

A Tapestry profile creates a distribution table of a company’s customers by Tapestry segment. Typically, 6 to 10 segments will contain the majority of a company’s customers. Since Tapestry is based on geography (census block groups or ZIP+4), users can easily scan mar-

kets and rank prospective sites according to the number of Tapestry households or individuals that match their key segment profile. Tapestry allows companies to find answers to their most important questions such as

- Who are my best customers?
- Where are my best customers located?
- Where are prospects that look just like my best customers?
- What do my customers read, watch, and listen to?

Tapestry’s geographic orientation makes it easy to incorporate results into a GIS usable anywhere in the United States.

Not only does Tapestry segmentation facilitate market analysis, it also serves to target media campaigns to generate store traffic for grand openings and existing stores. In addition, Tapestry cross-references other products and services that a company’s target segment may use. This information can be used to adjust the merchandise mix for the whole chain or individual stores based on the Tapestry segments. Comarketing opportunities with specific products and services or other retailers can also be identified using Tapestry.

### Measuring Demand

Demand in any given market may be measured in a number of ways. If you have completed a Tapestry profile, you can scan a market for your key Tapestry households or individuals and spatially map their relative concentration in a market area. You can increase the accuracy of demand numbers by weighting the household demand for your offering by Tapestry index. For example, the index for Metropolitan is 259, meaning that one Metropolitan household buys at a rate 2.59 times greater than the average household (index of 100). So the equation is

$$\begin{aligned} & (\text{Index} \times \text{Number of Households}) / 100 \\ & = \text{Weighted Households} \end{aligned}$$

Example:

$$\text{Metropolitans: } (259 \times 572) / 100 = 1,481$$

(See table below.)

In other words, the 572 Metropolitan households have a demand equivalent to 1,481 average households. Many variations of this basic equation can be created to yield estimated sales per household, estimated penetration, total market sales, etc. But they all rely on the basic Tapestry index to weight the result and provide a more accurate market analysis.

| Tapestry Segment              | Index | Number of Households | Weighted Households |
|-------------------------------|-------|----------------------|---------------------|
| 28—Aspiring Young Families    | 164   | 1,709                | 2,803               |
| 19—Milk and Cookies           | 147   | 1,765                | 2,595               |
| 22—Metropolitans              | 259   | 572                  | 1,481               |
| 07—Exurbanites                | 101   | 1,278                | 1,291               |
| 32—Rustbelt Traditions        | 141   | 833                  | 1,175               |
| 06—Sophisticated Squires      | 95    | 1,200                | 1,140               |
| 38—Industrious Urban Fringe   | 127   | 834                  | 1,059               |
| 16—Enterprising Professionals | 111   | 942                  | 1,046               |
| 36—Old and Newcomers          | 120   | 766                  | 919                 |
| 14—Prosperous Empty Nesters   | 89    | 927                  | 825                 |
| 39—Young and Restless         | 100   | 785                  | 785                 |
| 52—Inner City Tenants         | 105   | 713                  | 749                 |
| 18—Cozy and Comfortable       | 76    | 958                  | 728                 |
| 48—Great Expectations         | 97    | 613                  | 595                 |

## Career Opportunities with ESRI

ESRI is recruiting for creative, dynamic individuals with proven industry success to join its Business Solutions team in Redlands, California.

**Industry Solutions managers** are needed for the retail, logistics, and insurance/financial markets to develop, manage, and execute comprehensive marketing, business development, and business partner plans to help market ESRI's software solutions to clients worldwide. Learn more at [www.esri.com/careers](http://www.esri.com/careers); to apply, send your cover letter and resume, coded BGN/TF, to [giscareers@esri.com](mailto:giscareers@esri.com).

Demand may also be measured using surrogate data in the absence of customer-derived demand estimates. Consumer demand or market potential data is available to provide potential dollar volume, household, or customer count data at all geography levels such as state, county, census tract, block group, or ZIP Code. Consumer demand variables can be found at [www.esri.com/data/consumerexp.html](http://www.esri.com/data/consumerexp.html), and market potential variables can be found at [www.esri.com/data/marketpotential.html](http://www.esri.com/data/marketpotential.html).

### Measuring Supply

Supply refers to both your outlets and your competitors' outlets in any given market. These may be specific chains or franchises or include more general categories. For example, a high-end outdoor outfitter may not consider the sporting goods sold in a discount department store or a chain sporting goods store as real competition. Only other high-end outfitters would be considered competition. GIS allows you to account for competitors' and your own locations by point plotting them and establishing the relative drawing power for each location.

Supply and demand can be measured in any market by using a unique, new database called Retail MarketPlace. This database includes both components of economic exchange for a complete assessment of the retail marketplace. A leakage/surplus factor included in the database measures the difference between supply and demand. This lets you quickly determine if a store's merchandise meets the demand of its residential consumers or if consumers are traveling outside the market area to shop. Leakage/Surplus analysis helps retailers evaluate inventory or measure the potential of future sites. The Retail MarketPlace database includes

- Retail sales estimates in current dollars
- Retail potential estimates in current dollars
- The leakage/surplus factor
- The number of businesses by three- or four-digit NAICS codes

These statistics are available for 31 industry

groups within a ring or polygon of any size and at any census geography level.

### The Power of GIS

Once you have all your data together and understand your customers, the value of GIS comes to the forefront.

Thematic mapping, grid mapping (subgeography standardization), Spatial Interaction Model (SIM), desire lines, and point plotting are all valuable tools in market analysis leading to the selection of the best site for a store or business opportunity. Utilizing these tools allows you to increase your understanding of a market, limit risk, and maximize the revenue potential for any market analysis.



### Business Sense

*Simon Thompson*  
*Commercial Business Industry Solutions manager*

ESRI is pleased to welcome Simon Thompson as the Commercial Business Industry Solutions manager. With close to 20 years of experience in the GIS industry, Thompson comes to ESRI from Sydney, Australia, after roles as a senior executive at Genasys and founder/CEO of the GenaWare Group. Most recently, he was involved in developing a new business sector for 3D GIS applications based on MapInfo technology.

"We are happy to have Simon as part of the ESRI team," says Jack Dangermond, ESRI president. "He has a wealth of experience in selling integrated solutions as part of the business process and can bring our customers the knowledge they need to be successful with GIS. He is a great asset to us as we grow our commercial business team."

Thompson brings many years of corporate customer experience to ESRI and has worked in the past with clients such as FedEx, Shell, Bank of New Zealand, British Petroleum, and Boeing.

"ESRI GIS helps businesses leverage the behavioral and operational advantages inherent in geography," says Thompson. "I'm looking forward to helping our customers continue to integrate geographic services into their daily business operations to maximize their existing strengths or more closely align their capacities with their potential."

Thompson holds a bachelor of science with honors in geographic sciences from Plymouth Polytechnic and a master's in computer science from the University of Wales Institute, Cardiff. Thompson joins Brad McCallum, commercial specialist, in the ESRI corporate office.

## ESRI's Business Analyst Online On-Demand Data and Mapping Service for Commercial Real Estate

Saving time and money are critical in today's fast-paced, highly competitive commercial real estate environment. Placing a tenant in the wrong location can cost millions of dollars, take months to recoup the loss, or even cause legal problems. Therefore, real estate professionals must be able to quickly access the best data, mapping, aerial photography, and satellite imagery that can be used for accurate decision making. ESRI's Business Analyst Online on-demand data and mapping service provides a wealth of accurate, current data reports and mapping capabilities along with interactive features, aerial photography, and satellite imagery.

By combining extensive, business, consumer, and demographic data with GIS technology, Business Analyst Online helps real estate professionals to

- Identify new store locations on the map.
- Analyze trade areas for existing or proposed store locations.
- Reveal untapped markets.
- Evaluate competitors.
- Research drive times, consumer spending, traffic patterns, and market potential.
- Sketch trade areas by hand.
- Highlight hot spots of consumer demand.

Real estate companies rely on Business Analyst Online to produce accurate, boardroom-ready reports, maps, and aerial imagery for any area of interest. The reports and maps describe the people, their spending habits, housing, local traffic counts, and businesses in trade areas that are hand-drawn or defined by rings or drive-time estimates.

Users can also define a target area from a list of standard geographies such as ZIP Codes, states, counties, census tracts, and metropolitan areas such as Core Based Statistical Areas and Designated Market Areas. Typically these project reports and detailed maps can be completed within one to five minutes, depending upon the complexity and number.

Staff in larger real estate companies must frequently produce multiple, attractive packag-

es of data reports and maps quickly. Business Analyst Online presents multiple reports and maps in a single Adobe Acrobat PDF document, emailed to user as PDF or Excel worksheet and include in marketing and sales packages. Subscribers to Business Analyst Online can save their projects, analysis preferences, and results, thereby saving time when these projects need to be analyzed again with new criteria. Easy to use, affordable, and always accessible, Business Analyst Online provides more than 50 presentation-quality reports and maps that describe the people, housing, and businesses for any area of the United States. These reports and maps are delivered via e-mail directly to your Inbox in PDF or Microsoft Excel format for use with other data.

Business Analyst Online allows subscribers to repeatedly perform standardized analysis and reporting for many different addresses and sites anywhere within the US. Different sites can be easily compared and sites ranked based on any user preferences or performance goals. All this is possible without the considerable cost and management overhead of owning your own data or investing in dedicated GIS expertise. Reports and maps are available for purchase by credit card as needed or by subscription. For users who need more than 20 reports and maps per year, a subscription plan is probably more cost-effective. Subscribers have unlimited access to the wide variety of data and services available from Business Analyst Online during the subscription period. A Basic subscription provides access to 14 reports and maps; the Premium subscription adds 20 additional reports and maps and includes other functions. Subscriber benefits and features include

- Unlimited use of 14 reports and maps in the Basic subscription
- Unlimited use of 34 reports and maps in the Premium subscription
- The ability to customize the reports and maps to add your organization's logo or

corporate identity (Premium subscribers only)

- The ability to save projects for quick access to sites, trade areas, and analysis settings
- The ability to set and save preferences for how you work and analyze data, report titles, output formats, and the most frequently used maps and reports
- Additional reports and maps available to fit changing requirements or special projects
- Discounts on additional report and map purchases

No training is required to use Business Analyst Online or to understand the data. Anyone can easily follow the clear, concise instructions and immediately produce reports and maps. Application support and answers to data questions are only a quick phone call or e-mail message away. The Business Analyst Online team performs data updates and feature enhancements every month; users and subscribers enjoy these benefits, freed from support and maintenance responsibilities.

Business Analyst Online can be customized to fit the unique requirements of any organization. The My Business Analyst Online option adds an organization's look and feel to the user interface, changing the colors and adding the organization's logo to all reports and maps. Any of the 45 standard reports and maps can be customized as needed by the organization—the new report templates can be ready for use in as quickly as one week. Additional functionality or a different user interface can also be provided to suit an organization's unique requirements.

Because time means money, real estate professionals must look for every edge against their competitors. Business Analyst Online provides an invaluable resource that can grow with your organization and keep you ahead of the competition.

For more information about Business Analyst Online, visit [www.esri.com/bao](http://www.esri.com/bao).

# Residential Real Estate Firms Use ESRI RouteMAP IMS to Provide Driving Directions and Easy-to-Use Home Search Engines

As the Internet continues to grow, so does the sophistication of data that people are seeking. For the residential real estate market, potential home buyers visiting Internet sites that provide easy access to powerful search tools, such as those found at Windermere, [www.windermere.com](http://www.windermere.com) and Pulte Homes, [www.pulte.com](http://www.pulte.com), can quickly find homes or communities and get driving directions to places that look interesting. The ability to quickly uncover a house and figure out how to get to it are becoming increasingly important features on any competitive real estate company's Web site.

RouteMAP IMS is an affordable, out-of-the-box Internet map server (IMS) designed to help residential real estate professionals add mapping and routing capabilities to their Web sites. It is an economical solution for any company wanting to customize the look and feel of

its Web site instead of relying on third-party hosting services.

RouteMAP IMS can not only serve up geographically based information and driving directions for individual real estate companies but for Multiple Listing Service (MLS) agencies as well. With their investment in MLS information, companies, such as Trend, [www.trendmls.com](http://www.trendmls.com), and Solid Earth, [www.solidearth.com](http://www.solidearth.com), need solutions that provide security for their data as well as complete control of the application in-house. RouteMAP IMS provides this peace of mind.

RouteMAP IMS allows MLS agencies to provide their own application services to other individual real estate firms. By acting as an application service provider, an MLS agency can provide all of its information to others, including mapping data, for the cost of the ap-

plication. This means that no matter how many prospective home buyers look at the MLS agency's information through various clients' Web sites, it only pays for the application, not the cost of every transaction. The MLS agency can budget effectively year after year and know exactly what its costs will be.

At the end of the day, RouteMAP IMS delivers an application that is cost-effective, resides on in-house servers, allows complete control of the application and data, and provides a robust API to create the look and feel of your Web site. Use RouteMAP IMS to bring potential home buyers to your Web site and keep them there—not at your competition's.

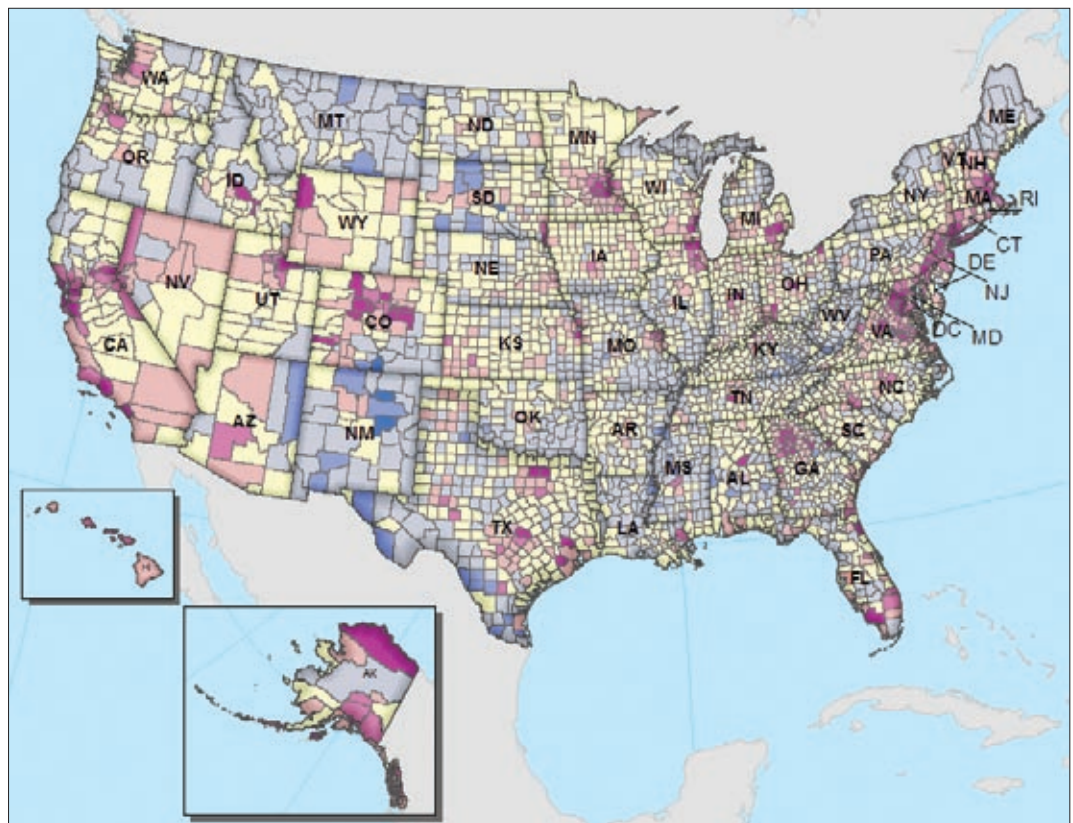
For more information, contact Jay Hoffman by calling 1-972-889-2351 or e-mail [jhoffman@esri.com](mailto:jhoffman@esri.com).

## Maptoid

Standard deviation of average dollars spent on new and used motorcycles and motor scooters. Above average is purple, average is yellow, and below average is blue.

Highest County—Loudoun County, Virginia, \$114.38

Lowest County—Kalawao County, Hawaii, \$10.51



## Looking for a Home? Get Straight to the Point...and Click

Home buyers tend to have a specific area in mind when they are looking for a potential property. Quite simply, they know where they want to live and where they don't want to live. Yes, the primary concern in the home buyer's mind is "location, location, location." Many people have a good idea of the neighborhood where they would like to live, whether it's close to a particular school or service or near a workplace. Despite this, home buyers tend to be subjected to browsing through reams of listings in search of their dream home. Wouldn't it be better to let home buyers view an interactive map of their desired area, then have them come view *your* available properties in *their chosen* area?

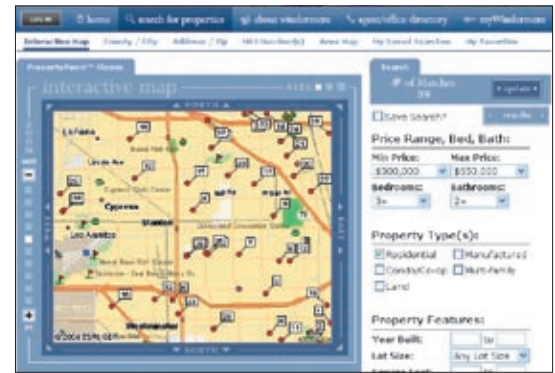
### Drilling for a Dwelling

ESRI, along with business partner IDV

Solutions, has implemented solutions for large home builders and real estate companies to deliver this to their prospective buyers. The application allows the buyer to quickly, intuitively, and visually drill down on a map, using the mouse button, to a desired area and view properties of interest in that area.

The solution is called the Neighborhood Finder Interactive Home Search and leverages the technology of ESRI and IDV Solutions. Users can now search for a home by selecting an area of interest on a map instead of selecting a criteria list or multiple listings system number.

A clean, intuitive, efficient, visual home search is no longer a luxury; it is close to be-



By simply moving the cursor over a house on the map, information on the house is displayed. This allows those looking for homes to go directly to the neighborhoods they are interested in instead of wading through pages of listings.

coming the expectation for potential home buyers. Contact ESRI at the Web site below to learn how you can engage more potential customers more efficiently, thus increasing your competitive advantage in the marketplace.

Learn more about GIS for real estate at [www.esri.com/industries/real\\_estate/index.html](http://www.esri.com/industries/real_estate/index.html).

## Pulte Homes, Inc., Launches Web-Based House-Hunting Tool Puts Information a Click Away from Its Customers' Fingertips

Pulte Homes, Inc., the second-largest builder of homes in the United States, recently revealed its new Web-based tool that assists potential home buyers to quickly locate a new home in



Pulte Homes' Web site allows visitors to drill down to neighborhoods by clicking on a map, making it easy to search areas that may not be familiar.

a desirable area. The tool allows house seekers to navigate an interactive map, rapidly "drilling down" to an image of the desired home along with relevant information. The tool, built by ESRI business partner and Michigan-based company IDV Solutions, will assist those looking for new houses in more than 45 real estate markets across the United States.

Ian Clemens, chief technology officer of IDV Solutions, views the visual, map-based search tool as the obvious next generation of house-search tools. "In most cases, potential home buyers have a specific geographic area in mind; therefore, a visual, map-driven search tool available via the Web strongly resonates with the user's search process," said Clemens.

IDV used its own Location Feature Server, along with ESRI's RouteMAP IMS software, to build the application. "We decided to use ESRI's RouteMAP IMS software," said Melissa Davis, national e-commerce manager, sales and marketing, Pulte Homes. "We like

the ability to add custom layers to the maps."

RouteMAP IMS is ESRI's affordable, out-of-the-box solution for adding customized mapping and routing capabilities to Web sites. Web visitors are able to quickly find locations and calculate routes with driving directions to any location.

Now, when customers visit the Pulte Homes Web site, they can select the state they want to search by pointing and clicking on a map. The next page allows them to select a Metropolitan Statistical Area or city with available Pulte Homes communities. By drilling down from a city level to neighborhood or street level, users can find a community with a desirable home in a more intuitive and productive way than traditionally available. Users can click to contact a sales associate and/or get driving directions to the community. Overall, the solution has helped link buyers to agents in the most practical and responsive way, ensuring everyone gets an improved home search experience.

## ESRI Data for Real Estate

### Make Profitable Business Decisions with the Right Data

Real estate companies need access to all types of data to help them find the best sites for their clients, build new projects in areas that fit the demographics of their retailers, sell or lease space in existing shopping centers, and more. The success of these business decisions depends in part upon the quality of the data that is used to research each project. Comprehensive information about a project enables real estate professionals to make sound business decisions, increase chances for success, and lower failure rates.

Real estate professionals must be sure the data they use to formulate conclusions is accurate, timely, and based on proven, benchmarked methodologies. Real estate data users are hungry for the newest and best data, so the pressure of being “better, faster, and cheaper” becomes increasingly apparent for today’s data providers. Public and private agencies and companies collect data on a wide range of variables including business, consumer spending, crime, demographics, market potential, retail, shopping center, traffic, etc. This data, blended with customer behavior, aerial photography, satellite imagery, and project specifics, can provide the information necessary to make insightful site location decisions. How can this information help real estate professionals add credence to their business decisions?

**Business data:** Several vendors can furnish data about business activity for particular areas. Variables in these databases can be broken down by industry and include vital statistics such as the total number of businesses, total number of employees, total sales volume, geography level, years in operation, location type, and more. Real estate professionals can use this information to determine if the area is saturated or underserved and if the daytime/workplace populations could support the prospective businesses.

**Consumer spending:** Based on information derived from public agencies and enhanced by private data companies, information about

products and services preferred by consumers in specific areas is critical for real estate companies. Having the right information on local habits can be the difference between success or failure. For example, an agent shouldn’t lease space to a tenant that sells expensive merchandise at a mall that is patronized by consumers who buy only from discounters.

**Crime data:** A critical element in the research for any project is crime data. Providers can furnish this data by the type of crime, frequency of occurrence, and by geography. Depending upon what is revealed, evaluating this type of data can allow real estate companies to quickly rule out particular sites or relocate with the site selection research to more preferred locations.

**Demographic data:** Knowing about the types of people who live, work, and shop in an area is a significant part of any real estate research project. Demographic variables such as age, education, employment, ethnicity, family type, household income, and race can significantly impact any real estate decision. Correctly matching the demographics of shoppers to retailers can ensure that the consumer types in the area are those whom the retailer wishes to attract.

**Market potential:** Designed to help companies understand, predict, and influence consumer behavior, market potential data measures the likely demand for a product or service in specific trade areas. Real estate companies can use market potential data to define where clients can expand most profitably, identify markets with the highest growth potential, and more.

**Retail data:** Information about retail activity in specific areas can guide real estate companies to select the best properties for their clients. ESRI’s unique Retail MarketPlace database provides a complete, current, and accurate snapshot of retail activity for any trade area and includes both components of economic exchange for a complete assessment of the retail marketplace. A leakage/surplus factor



included in the database measures the difference between supply and demand. Real estate companies can quickly determine if a store’s merchandise meets the demand of its residential consumers or if consumers must travel outside the market area to shop.

**Shopping center data:** Several data vendors gather, validate, and update information about U.S. shopping centers. The data includes variables such as the center size, year built, gross leasable area, anchor stores, ownership, and presence of amenities such as food courts. Real estate companies that include this type of data in their research will ensure that they place their tenants at the correct venues and maximize the revenues returned to them.

**Traffic volume data:** Information such as the number of vehicles that pass a location; the types of traffic; and traffic volume during work hours, nights, and weekends are examples of traffic data that can be included in research for any project. This data can be used to quantify the accessibility or visibility of a retail location. It provides a good measure of how attractive a site is and if the volume of traffic in the area would support a business of a particular size or profitability. Real estate companies that maximize the use of geographic data, mapping, imagery, and consumer information as part of the research for each project can dramatically increase the chances of success for their developers, investors, and tenants.

For more information about the types of data provided by ESRI for real estate usage, call 800-292-2224 or visit our Web site at [www.esri.com/data](http://www.esri.com/data).

# GIS Helps Organizations Create Business Continuity Plans

One in five businesses experiences a major business disruption each year. Disruptions can be caused by power outages, internal flooding, weather events, fire, terrorism, crime, or transportation problems. How you respond to this disruption determines the success or failure of the business in the next 18–36 months. Many businesses, concerned about surviving the effects of a major disruption, have begun investing in business continuity plans (BCPs) for these events.

What is a BCP? It is a holistic management process that identifies potential impacts threatening an organization and creates a framework for providing countermeasures to safeguard that business’s key interests. Having a BCP in place allows an organization to mitigate risks that disruptions pose in such areas as health and safety liability, loss of productivity from downtime, loss of work to competitors, failures within the supply chain, and higher insurance rates.

BCPs have many geographic aspects, and GIS has been recognized as a powerful tool for developing effective BCPs. GIS helps businesses develop BCPs by addressing facilities

management, employee and family notification, incident mapping, weather mapping, office relocation, evacuation, threat assessment, and supply chain reorganization.

## Picture Your Assets

GIS is particularly well suited to BCP applications because of its inherent ability to integrate disparate data sources. Because a fundamental part of creating a BCP is determining the location of a company’s assets, even the most basic GIS application adds value to a standard BCP. Simply identifying the number, size, scope, and replacement value of assets in their exact locations allows BCP analysts to evaluate those assets in relation to potential disruptions in ways that are not possible with text or tabular representations of the same data.

## Create What-If Scenarios

Using GIS to model what-if scenarios can capture the infrastructure, business processes, and locations of an organization in a more meaningful and instructive way. Through GIS-linked dashboard applications, managers can

quickly obtain a high-level overview of a situation and understand what needs to be done to reestablish critical business functions in the event of a disruption.

## Creating an Effective Plan

Every BCP must address the relocation of personnel, operations, and assets. In some industries, such as financial services, specific rules govern what must be included in a BCP. For instance, the New York Stock Exchange Rule 446 mandates that companies must have a written plan, updated annually, for relocating operations in the event of an emergency. Companies of all sizes have compliance issues governed by such entities as NASD rules 3510 and 3520, OSHA, Homeland Security, and the Patriot Act.

Every business can implement an effective BCP by including five steps: analyzing its business workflow; assessing risks; developing strategies; developing a formal plan; and finally, refining the plan.

Relocation analysis is similar to a familiar and commonly used task in GIS: site selection. However, BCP analysts incorporate factors not usually considered in traditional site selection applications. One example is identifying the locations of the company’s most critical employees from a day-to-day operations perspective and determining a temporary operations site that is accessible and optimal in relation to these employees.

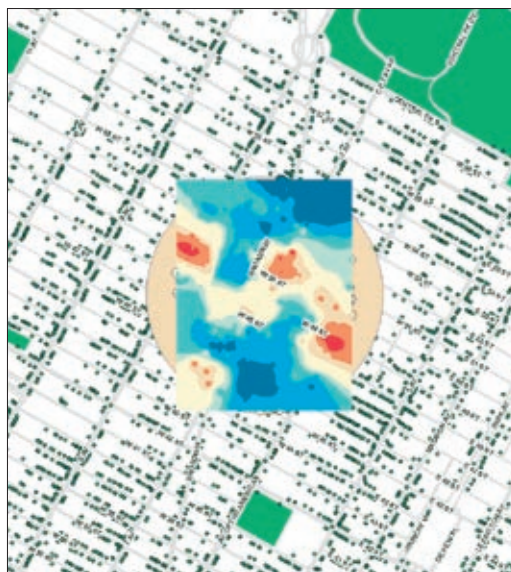
BCP analysts are interested in mitigating risks. Consequently, part of relocation analysis should also address potential threats such as proximity to flood zones, earthquake centers, leaks of hazardous material, or terrorism targets.

## Handling Evacuations

Another use for GIS in BCP is identifying evacuation meeting points for employees who work in



The ArcGIS modeling environment, ModelBuilder, simplifies the process of creating complex models that can be used to answer key questions. In this example, the model shown takes into account proximity to key employees and proximity to major roads and existing customers. These factors were evaluated and compared to available listings. The result is a list of potential temporary locations that meet the criteria.



ArcGIS Hot/Cold Spot Analysis tool geocodes the address of a building, buffers the location by a specified distance, then clips a business location dataset containing the area’s daytime population by business address to find statistically significant hot and cold spots for building employees. Dark blue points show areas with few employees that may serve as good meeting places.

### GIS in Action: Forest City Enterprises, Inc.

a specific building. Although businesses typically prefer employees to stay inside a building during an emergency until the situation is fully understood, an evacuation plan should be in place.

The location of the office affects the complexity of this task. It can be simple if the business is located in an office park. However, if the office is located in a densely populated city, such as New York, logistics are more complex. If the emergency is isolated within a single building, it is easier to manage than if multiple, adjacent buildings are affected. In the latter case, the plan must take into account the neighborhood surrounding the affected buildings.

After evacuating the office, employees usually meet at a specific location and decide what needs to be done next. Where should employees regroup? Factors, such as how far from the building employees can travel with relative ease (recognizing that some may have disabilities) and the presence of open spaces that can be used, must be considered. These questions are all geographic in nature.

#### Conclusion

Commercial organizations using GIS can prepare more robust BCPs that integrate many types of data from multiple sources, incorporate geography, and use new tools developed specifically for spatial statistical analysis. GIS enables BCP analysts to ask different types of questions and obtain better answers than they could previously using other techniques relying solely on databases, spreadsheets, and traditional business intelligence packages.

had to implement a new system for daily in-house analyses without hiring outside consultants. Forest City Enterprises wanted to improve its mapping solution. Attention focused on reduced operation costs, greater access for multiple users, and better flexibility for the in-house production of demographic reports and maps as part of the retailer assessment packages.

#### The Solution

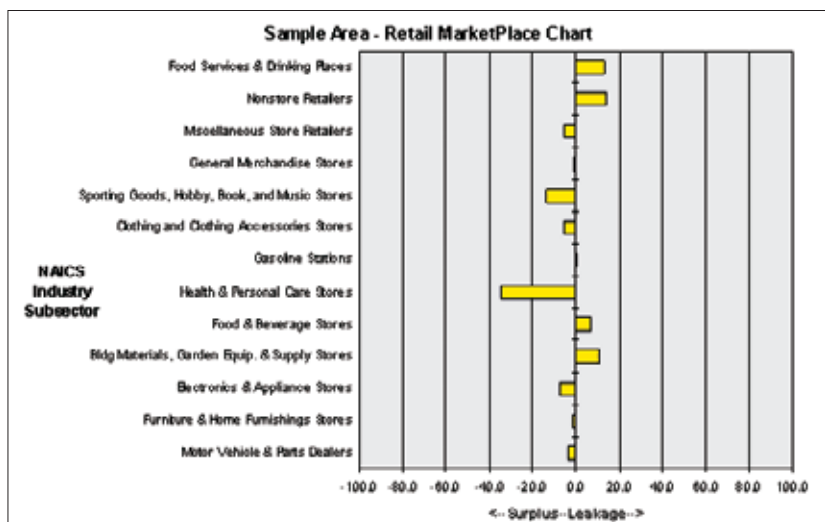
Forest City Enterprises asked ESRI to design a solution that met the expanded demographic and mapping analysis requirements yet stayed within a specified, budgeted amount. ESRI suggested ArcGIS Business Analyst desktop analysis software combined with Business Analyst Online, a Web-based reporting and mapping service. This provides Forest City Enterprises, Inc., greater flexibility in how it addresses the analysis needs of different projects and gives it improved control over budgeting and investment risk.

As part of the analysis process, Forest City Enterprises also uses Retail MarketPlace and Community Tapestry. The Retail MarketPlace database measures the leakage/surplus that directly compares the demand (consumer spending by household) to the supply (retail sales by business). Tapestry provides a demographic profile of consumers in the retail area. These two data types provide even more comprehensive detail for the retailer assessment packages.

Diana Parsons, research and design administrator at Forest City Enterprises, said, "Having the ability to convince retailers of a market's value and how they will enhance that value is one of the greatest impacts we have seen from using ESRI products and services. We can use ArcGIS Business Analyst to shade key demographic variables, such as income or the number of households, on thematic maps to highlight a proposed area for a potential retailer."

#### Results

Using state-of-the-art geographic information system (GIS) software and data from ESRI, Forest City Enterprises has realized dramatic savings of time and money by bringing this capability in-house. "Now we can help retailers explore a market location in finer detail and provide them with much better customer service," said Parsons. "ESRI's Business Analyst Online is one of the best tools we have to perform our marketing analyses. It simply towers over the competition. The quick access, value, and user-friendliness of the service allow us to precisely explore a market to successfully optimize the leasable space in our retail portfolio. At Forest City Enterprises, detailed demographic information from ESRI allows us to analyze prospective areas more accurately and provides a win-win situation: success for our retail centers and for the retailers we position there."



ESRI Retail MarketPlace database measures the leakage/surplus that directly compares the demand (consumer spending by household) to the supply (retail sales by business).

## Interview with David Huffman, ESRI

The expression “If you build it, they will come” may hold true for the construction of baseball fields but is not always the case for the development of successful commercial real estate projects. The major challenge of commercial real estate developers, agencies, and financiers is to build or lease properties in areas that match consumer demographics to tenants. To provide some answers about the capabilities of ESRI’s products for the commercial real estate industry, David Huffman, director of commercial sales at ESRI, was interviewed for this article.

### What is the major challenge of the commercial real estate industry today?

It’s all about site selection. Matching the right tenants with the right properties and keeping centers filled is an ongoing challenge for all real estate companies. They must also understand and stay ahead of changing demographics and competition moving into the area so that they can develop the right tenant mix for their properties.

### Can ESRI’s experience with GIS translate into viable solutions for commercial real estate?

Yes, this is not rocket science. Real estate companies can easily use GIS products to perform site selection applications and identify customers who might shop at a particular center. They can also use ESRI’s desktop and Web services products to blend demographics, detailed cartographics, consumer behavior data, floodplain

maps, and other types of data with aerial imagery and analysis to produce boardroom-ready output for presentation to prospective tenants and developers. GIS software can also handle facilities management tasks and business continuity planning analysis.

### Can you provide specific examples of the ESRI products that can help to perform these tasks?

Yes. ESRI’s ArcGIS Business Analyst desktop analysis software provides advanced analysis tools and an extensive library of data from industry-leading data providers to help real estate companies make better business decisions regardless of the size of the organization. Some of the wizards in ArcGIS Business Analyst software were designed specifically to perform applications for real estate professionals including

- Performing customer or store prospecting
- Defining customer-based or store trade areas
- Finding a location similar to that of the most profitable stores
- Conducting market penetration analyses
- Creating SIMs to forecast potential sales at new stores
- Performing drive-time analysis over a nationwide street network

A complementary product to the ArcGIS Business Analyst desktop software is Business Analyst Online, ESRI’s on-demand data re-

porting and mapping service. Built from ESRI’s ArcWeb Services, Business Analyst Online provides reports, maps, aerial photographs, satellite imagery, and features that can be purchased as needed or by subscription.

### How can real estate companies use Business Analyst Online?

Small real estate companies have found Business Analyst Online to be an invaluable tool that provides instant, affordable access to data, maps, and interactive features. Without requiring any training, anyone can produce presentation-quality data reports and maps in just a few minutes.

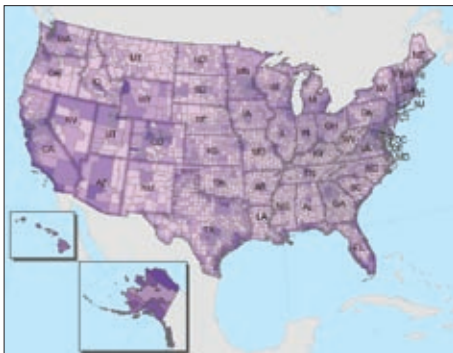
Large real estate companies that require in-depth analyses use ArcGIS Business Analyst desktop software to perform applications such as site selection, tenant mix analysis, modeling, and trade area analysis. Business Analyst Online is the ideal answer for staff who must quickly produce multiple presentation-quality packages of data reports and maps. Most important, the Business Analyst product suite can grow as the company’s requirements grow, so companies can use the products interchangeably.

### What role do you foresee for ESRI in this space?

I believe that ESRI’s heritage of more than 35 years as an industry-leading provider of data, software, technology, and Web services will enhance the company’s standing and strengthen its market position in this industry space. We continually strive to enhance our users’ experience with ESRI’s technology and data, providing innovative products and satisfied clients. We have some exciting new products that we’ll introduce in 2006 that we believe will be very attractive to real estate professionals.

For more information about ArcGIS Business Analyst, visit [www.esri.com/ba](http://www.esri.com/ba). For more information about Business Analyst Online, visit [www.esri.com/bao](http://www.esri.com/bao).

## Maptoid



Average amount of money spent annually on food away from home. Cyan is the lowest, and pink is highest. The breaks are \$250 (light blue [cyan]), \$300 (medium blue), \$400 (dark blue), \$600 (purple), and \$900 (pink).

## Tele Atlas

Tele Atlas is a leading global provider of digital maps and dynamic location content for a variety of navigation, location-based services and geospatial products, and database solutions. Tele Atlas is an ESRI Corporate Alliance Partner that provides datasets formatted for ESRI's ArcInfo, ArcView, and ArcSDE software. Through proven methods of data collection from 50,000 global sources, coupled with a robust field survey team, Tele Atlas excels in change detection and management, delivering real-world change quickly and accurately.

More than one million vehicles rely on Tele Atlas data for routing, tracking, and scheduling. The company is a leading data solution provider for government and utilities with OneMap™, land base applications, and critical asset management. Tele Atlas processes more than one billion geocoding matches per year. Industry leaders in Internet, wireless, and navigation

entrust Tele Atlas for their business success.

Products using ESRI software and Tele Atlas street data include

- *ESRI Data & Maps*
- ArcLogistics Route
- ArcWeb Services
- ArcGIS Business Analyst
- BusinessMAP
- MapStudio
- RouteMAP IMS
- Route Server Data Pack
- StreetMap Pro
- StreetMap Premium
- ArcPad StreetMap

Find more Tele Atlas information at [www.esri.com/teleatlas](http://www.esri.com/teleatlas).

## ESRI on the Road

Visit ESRI at the following trade shows, and talk to industry experts.

### Twenty-Sixth Annual ESRI International User Conference

August 7–11, 2006  
San Diego, California

### NACS SHOW 2006

Booth# 8317  
October 9–11, 2006  
Las Vegas, Nevada

### 28th Annual Applied Geography Conference

October 11–14, 2006  
Tampa, Florida

### DMA 2006

Booth# 1038  
October 14–18, 2006  
San Francisco, California

### NRF 2007

Booth# 2322  
January 13–16, 2007  
Jacob C. Javits Convention Center  
New York, New York

### IFA 47th Annual Convention

February 25–27, 2007  
Las Vegas, Nevada



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