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| OverviewCountry or Region: United StatesIndustry: GovernmentCustomer ProfileMiami, Florida, is one of the most vibrant cities in the United States. Drawing thousands of visitors and new residents every year, Miami’s population is projected to grow nearly 10 percent by 2010.Business SituationTo provide essential services while reducing costs and increasing efficiencies, Miami wanted to offer its citizens easier ways to interface with services and information online. SolutionThe City of Miami chose Microsoft® Virtual Earth™ mapping software to develop online mapping applications that provide enhanced public safety response, urban design and planning, and tourism services.Benefits* Better emergency response
* Improved permitting and planning
* More transparent government
* More connected city
* Enhanced customer experience

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|  |  | Miami, Florida, is one of the most vibrant cities in the United States, drawing thousands of visitors and new residents each year. The city government must provide a host of essential services for residents, visitors, and businesses, while keeping operating costs low. Miami wanted to merge its geographic information system (GIS) data with a consumer-oriented mapping application to provide an easy way to visualize and navigate through information and services. After evaluating several options including Google, the City of Miami chose Microsoft® Virtual Earth™ mapping software to develop online applications that provide enhanced public safety response, urban planning, and tourism services. With the new software, fire personnel can respond more quickly to emergencies, urban planners can study the impact of new construction, and the public can get the most out of city services.  |
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Situation

Located near the southeastern tip of Florida, Miami is blessed with year-round warm temperatures, miles of beautiful beaches, a dynamic urban center, and many cultural, historical, and recreational attractions. The city draws thousands of visitors and new residents every year, and its population is projected to grow nearly 10 percent by 2010.

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Like all metropolitan governments, the City of Miami must provide a range of services for residents, visitors, and businesses. City services include police and fire departments, zoning regulations, schools, museums, parks, and other cultural and recreational resources. And, like most public sector organizations, Miami faces continual challenges to minimize costs and operate as efficiently as possible.

To help meet those challenges, Miami maintains a robust IT infrastructure. Its IT department develops Web-based applications to provide collaborative tools for municipal departments, as well as online access to City services for residents and visitors. To support the Mapping Services of these applications, Miami has developed comprehensive Geographic Information System (GIS) capabilities using the Environmental Systems Research Institute (ESRI) ArcGIS Platform. Within this platform, Miami used ESRI tools like ArcGIS Desktop to create, develop, and maintain layers and information within an ArcSDE GeoDatabase. This GeoDatabase contains key information such as Addresses, Streets, Property, Zoning, and Business-based boundaries that are used by applications through the city.

The City of Miami wanted to merge its GIS data with a consumer-oriented mapping application that would provide an easy way to visualize, connect with, and navigate through information and services. The city needed online mapping applications to help in three main areas: public safety response, urban design and planning, and tourism services.

“We wanted a collaborative tool to give people in public safety a better perspective of buildings and neighborhoods, and a better understanding of how to respond to emergencies,” says William Tharp, GIS Manager for the City of Miami. “We also wanted a mapping tool that would help develop urban design areas and approve new buildings, and an online application that could show people visiting Miami what the city offers.”

The challenge Miami faced was developing applications that would be easy and intuitive to use for public and internal users that weren’t familiar with traditional, sometimes complex GIS technologies. The city also needed to work quickly and cost effectively, and develop a tool that was compatible with its existing data and IT resources, but that could also adapt and grow as the city expanded services and technologies. “We couldn’t take a year developing an application,” says Conrad Salazar, IT Project Manager for the City of Miami. “We needed an application that could adapt to the times and to the technology coming in.”

Solution

Miami engaged IT consulting firm and Microsoft® Gold Certified Partner IS Consulting to help it develop a mapping application built on the Microsoft .NET Framework and integrating the city’s ESRI-based GeoDatabase with other databases. Working with IS Consulting, Miami chose Microsoft Virtual Earth™ mapping software to develop its new applications.

The city evaluated several other mapping platform options, including Google, but ultimately chose Virtual Earth because it provided the flexibility to grow applications over time, and because it was compatible with the city’s existing technologies. “We looked at Google while we were looking at Virtual Earth, and the big advantages to Virtual Earth were the small start-up costs and quick time to market,” says Salazar. “Plus we were already a [Microsoft] .NET shop and the easy integration of Virtual Earth with our existing development platform was a huge value for us.”

The City of Miami uses Virtual Earth to provide emergency responders with a way to not only locate a site, but also to see a detailed, daytime aerial-photo view of a specific neighborhood or buildings from any direction or perspective. Using the information from Virtual Earth, Fire and Police personnel can determine the size, height , condition, and the potential entrance or exits of a building in planning their response. Smoke, fumes, and flames during a fire can often obstruct on-site views, but Fire Personnel can use Virtual Earth to virtually look through the smoke and see how they want to approach a fire.

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By integrating its GIS and building-permit data with Virtual Earth, Miami can provide its public-safety responders a way to find even more specific and timely data on any standard Internet browser. “Responders will be able to see a building in a 3-D format with all the plans,” says Salazar. “They’ll be able to see per floor where the water connections are, where the fire escapes are. We’ll be able provide that data to them in a quick, dynamic format as the plans are coming in and as buildings get approved.”

Miami is using Virtual Earth to also provide less heroic but just as vital services in zoning and planning. With Virtual Earth, Miami built the “Virtual City of Miami” application where users can access zoning, building, and permit information online. Users can locate a building on a map, and click on it to obtain current zoning and permit information. Miami is also enhancing its urban planning by creating representations that display the relationships of proposed buildings to zoning regulations, neighborhoods, and open areas. The city can insert architectural renderings of proposed buildings into a Virtual Earth map to display how a building will relate to its surrounding neighborhood before it’s built. Miami is using the application to create a collaborative layer between its review board, developers, and citizens.

For the general public, Miami used Virtual Earth to create another application called “My Neighborhood” that allows residents to register in a portal, where the city service locations, schools, parks, learning centers, and other facilities within one mile of their home address will automatically display. When a user hovers over a displayed location, they get a schedule of upcoming events at that facility.

For visitors, Miami uses Virtual Earth to provide an easy-to-use resource for individuals who want to explore the city or plan a route. “With Virtual Earth, visitors can actually go to sites without being there,” says Tharp. “They can see what bay sites or the Coconut Grove CocoWalk area look like before they’ve ever been there.”

Benefits

With Virtual Earth, the City of Miami has established an innovative Web presence. It is allowing its citizens and visitors to connect more effectively with the city’s services and attractions. It has also streamlined its urban planning and permitting processes. By using Virtual Earth to assist its emergency respon-ders, Miami is improving public safety and potentially saving lives and property.

**Better Emergency Response**

By providing emergency responders an unobstructed view of sites, Miami is providing them the tools they need to allocate and place equipment and resources most appropriately. Police can respond to calls more quickly, and with better results. Firefighters will be able to battle fires more efficiently, and more safely, helping them preserve property and potentially save the lives of citizens.

“With Virtual Earth, our public safety people have a better perspective of response locations,” says Tharp. “They can look at buildings from north, south, east, and west views to get the best understanding of how to respond in emergencies.”

**Improved Permitting and Planning**

With Virtual Earth, Miami can provide property owners and developers easy, intuitive access to zoning, permitting, and geographic data they can use to plan projects. They can access the information they need whenever they need it, and submit their applications with fewer questions, allowing permitting staff to focus on moving projects forward and serving more customers.

“The Virtual Earth application is a lot more intuitive and user-friendly than traditional GIS,” says Salazar. “Property owners can search by folder number, address, or many other of the same searching terms they would use if they came into the building, but they can do it on the Web.”

The Miami skyline is changing, with 180 projects scheduled in just the next three years. With Virtual Earth, Miami planners can see—and show—how future projects will fit into existing landscapes and impact neighborhoods, preserving livable environments. “We’re using Virtual Earth to give the citizens of Miami a view of the future,” says Jim Osteen, Assistant Director for Information Technology at the City of Miami. “Before a building ever exists, they get to see how it will actually affect their neighborhood and its culture.”

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**More Transparent Government, More Connected City**

With Virtual Earth, Miami is developing a new way to engage its residents, giving them a comfortable, intuitive way to look at spatial representations of zoning information, urban planning goals, facility locations, cultural and recreational resources, and visitor attrac-tions. Miami is using its online mapping technologies to help its citizens connect to their government and get the most out of the services the city provides. The city is making its services and government more trans-parent for businesses, citizens, and visitors.

“Virtual Earth is changing the way that people interact with information,” says Osteen. “It helps our citizens interact better with government services, and engages them in a friendly, enjoyable customer experience.”

Microsoft Virtual Earth

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For more information about City of Miami products and services, visit the Web site at: [www.miamigov.com](http://www.miamigov.com/)

The Virtual Earth platform is Microsoft’s next generation mapping and location service. It combines the MapPoint® Web Service with exciting new innovations around bird’s eye, satellite, and aerial imagery, dynamic map styles; and enhanced local search. Using the Virtual Earth platform, companies and government organizations can create an immersive online mapping and search experience that enables their customers to easily discover, search, explore, share, and visualize business location data and locally relevant information.

For developers, Virtual Earth supports a variety of programming environments and can be easily integrated into business applications, like customer relationship management and supply chain management applications.

For more information about Microsoft Virtual Earth, go to:

[www.microsoft.com/virtualearth](http://www.microsoft.com/virtualearth)