



## City Conserves Resources with GIS Portal and Citizen Service Platform Solution

### Overview

**Country or Region:** United States

**Industry:** Government—Local

### Customer Profile

The 16,000 employees of the City of Houston, Texas, serve the city's more than 2 million citizens by providing facilities and services such as libraries, the justice system, and emergency services.

### Business Situation

The city needed a better way for various departments to communicate about and respond to pollutants in the city's storm sewers that could affect the area's watersheds.

### Solution

The city is working with Microsoft® Gold Certified Partner Idea Integration to deploy a portal solution that is based on ESRI ArcGIS Server and Microsoft Office SharePoint® Server.

### Benefits

- Greater efficiency
- Improved public service
- Better care of the environment
- Ease of use

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Raj Shah, Project Manager, City of Houston

The City of Houston needed to share information among multiple departments to manage and respond to environmental concerns in its storm sewer system. Without effective tools in place for interdepartmental collaboration, investigators found it difficult and time-consuming to gather necessary information about a particular area of the city. Plus, they needed to learn of potential issues sooner and enhance their ability to trace the pollutants' origins. The city decided to implement a solution from Idea Integration that combines geographic information system (GIS) technology from ESRI with Microsoft® collaboration tools for a Web-based GIS portal. The city expects that this new Citizen Service Platform solution will help streamline operations, cut costs, improve public services, and, ultimately, have a positive effect on the condition of area watersheds.

## Situation

The City of Houston provides a range of important services to the metropolitan area, from maintaining high-quality parks to promoting the well-being of its citizens. Among the responsibilities of the city government is the care of the area's storm sewers, which empty into local bayous and watersheds. Houston has 3,500 miles of storm sewers, with more than 1,000 major storm-sewer outfalls and 5,000 potential industrial and commercial storm water dischargers.

To further the health and safety of the citizens of Houston and the environment, the city employs approximately 50 investigators. These specialists investigate emergency spills, new developments, and solid waste issues. They also conduct health, industrial, and wet and dry inspections, along with criminal investigations. These investigators are spread among city departments such as the Health Department, Police Department, and the Houston Storm Water Management Program, which protects watersheds from pollutants that travel through the storm sewers. The program's investigators do their best to identify and work with people to mitigate potential points of pollution, such as activities at a construction site. They also track watershed pollution back to the source so that the city can stop contaminants from entering the storm sewers, bayous, and watersheds.

"The city strives to ensure that we're doing all that we can to look into and resolve potential problems in a timely manner," says Raj Shah, City of Houston Project Manager for the SWQMIS and NPDES program. "The Storm Water Management investigators knew that they'd be more effective if they could collaborate with each other and with all the other city investigators."

However, working together wasn't easy. Investigators in each department collected and stored their data separately, making it difficult for others to be aware of past or present activities associated with a specific location. For instance, when an investigator visited a site, he or she would have no automatic process of identifying if there were other related issues—such as an environmental citation or current police investigation—in the neighborhood that might affect the investigation.

The investigators did collaborate whenever they could. If a Health Department investigator, for example, visited a site and noticed a problem with disposal of possible pollutants, that investigator would do his best to quickly notify a Storm Water Management investigator. However, it could still take weeks for the environmental investigator to call around to gather any available information about the site prior to visiting it. During that time, potential damage to the area could continue or worsen.

Other times, investigators from multiple departments visited a site when a single visit from one investigator could have done the job. "With such a large city and corresponding government structure, we often had a hard time with communication and coordination," recalls Shah. "Employees didn't have information when they needed it. All the investigators meet every two months, and we frequently heard a lot of people saying things like, 'I wish I'd known that two weeks ago' at those meetings."

The city determined that it needed a technology solution to help it share information both within and among its departments. It decided to look for a solution that could draw information from its multiple databases, support geographic information system (GIS) data, improve existing workflow

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processes, and be easy and intuitive for city employees to use.

“We wanted investigators to be able to pull up detailed maps of any given area in our region and see all activities and issues related to a site,” says Shah. “We also wanted them to have immediate access to all digital photographs, reports, citations, and other documentation that corresponded to a particular site. We figured that, by putting comprehensive, multidepartmental information into the same bucket, the city would be able to identify threats and damage to our watersheds, determine their points of origin, and resolve them more quickly.”

### Solution

In 2007, the city released a request for proposal for a data-sharing solution to several technology companies. After a rigorous review process, city decision makers opted to partner with Idea Integration, a Microsoft® Gold Certified Partner and Corporate Consultant Business Partner with ESRI, a leader in the development of GIS-related software.

Once it identified and evaluated the city’s specific business requirements, Idea Integration proposed a Citizen Service Platform solution based on its Constellation Framework, which creates a collaboration portal that features ESRI ArcGIS Server and Microsoft Office SharePoint® Server. ESRI ArcGIS Server facilitates the storage, creation, and management of spatial data, and Office SharePoint Server provides the portal structure to support collaboration. The framework also relies on the Windows Server® operating system, Microsoft SQL Server®, and various Web parts to provide comprehensive functionality.

Idea Integration helped the City of Houston put together a system that will make it possible for employees to search for issues

based on zip code, street address, or latitude and longitude. They also can set up alerts for themselves and others that will notify them when certain information changes within an area and immediately inform other departments when they make updates—all of which will take place through automated workflow processes. In addition, users will be able to attach digital photographs, notice of violations, reports, and other documents to their corresponding sites and send that information through the system. Idea Integration tailored the ESRI/Microsoft system’s functionality to be available by user role and department. Depending on the user’s logon information, a manager from one area may see a tab that grants access to reports while another department’s investigator has fewer options. “Working with Idea Integration has been great,” says Shah. “They’ve been extremely accommodating in meeting our particular needs, and the solution was implemented in June of 2008.”

### Benefits

With its new solution, the City of Houston will have a structured way to share information among departments, thus better protecting the environment and increasing government efficiency. “Thanks to technology from ESRI and Microsoft and to expertise from Idea Integration, we’ll be able to improve our conservation of financial, human, and environmental resources,” says Shah.

### Greater Efficiency

Currently, it may take workers at the Storm Water Management Program several days to find out about a potential environmental issue that another department discovers. With the new solution, investigators from another department can go straight to the system and, with a single click of a mouse, immediately alert all appropriate parties that an area needs investigation. Using spatial data further streamlines the city’s workflow process because managers and investigators

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will have a clear picture of what’s really taking place around the city’s storm sewers. Employees can proactively check to see if other departments have already investigated potential problems, registered issues, or issued citations within a particular area.

In addition, those who set out to compile reports about particular areas will save considerable time and effort because they can conduct searches using the system, determine what already exists, and capitalize on it, rather than duplicate previous efforts.

“If everyone is up to date regarding an area, we can be far more efficient in dealing with it—avoiding repeat visits and unnecessary calls, duplication of effort, and so on,” says Shah. “By pooling departmental information and making it easily accessible through the portal solution, we’ll be saving time and therefore operational costs. And that’s always one of our goals as a local government.”

#### **Improved Public Service**

Thanks to this new Citizen Service Platform solution, the City of Houston will be better able to respond to citizen inquiries and act more quickly. If a citizen or organization calls the city to ask about the environmental health of a particular area, employees typically have to call multiple departments, compile available information, and then send it to the inquirer, a process that can take weeks. With the ESRI/Microsoft system in place, city employees will have a single source to find the requested information and can therefore relay it to the interested party far more quickly. “We’re always looking for ways to better serve our public,” says Shah. “Because employees will have instant access to more comprehensive data, they’ll be providing detailed information more quickly to the people who need it.”

#### **Better Care of the Environment**

With enhanced access to information, the City of Houston will be able to identify those areas of the city that are in environmental trouble. Using the system, designated users can instantly view a detailed area map with color-coding that makes it easy for them to monitor problematic sites and also to pay attention to trends. “We’re stewards of our environment and do our best to protect it,” says Shah. “The ESRI/Microsoft solution will mean that news of actual or potential pollution can reach the right people in less time. They’ll be able to act more quickly if a watershed has sustained damage and be more proactive in tracking the source of pollutants.”

#### **Ease of Use**

One of the advantages of the city’s portal solution is that it is based on Microsoft technologies, so users already will be familiar with the interface. As a result, city employees will need minimal training to use the new system. “We’re excited that the solution will be so easy and approachable for both users and administrators,” says Shah. “Plus, we worked with our partners to design the system so that we’ll be able to host and maintain it internally, which is another source of cost savings for the City of Houston.”

## For More Information

For more information about Microsoft products and services, call the Microsoft Sales Information Center at (800) 426-9400. In Canada, call the Microsoft Canada Information Centre at (877) 568-2495. Customers who are deaf or hard-of-hearing can reach Microsoft text telephone (TTY/TDD) services at (800) 892-5234 in the United States or (905) 568-9641 in Canada. Outside the 50 United States and Canada, please contact your local Microsoft subsidiary. To access information using the World Wide Web, go to: [www.microsoft.com](http://www.microsoft.com)

For more information about Idea Integration products and services, call (713) 353-4503, or visit the Web site at: [www.ideageospatial.com](http://www.ideageospatial.com)

For more information about ESRI products and services, call (800) 447-9778, or visit the Web site at: [www.esri.com](http://www.esri.com)

For more information about City of Houston products and services, call (713) 837-0311, or visit the Web site at: [www.houstontx.gov](http://www.houstontx.gov)

## Microsoft Office System

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- Idea Integration
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