

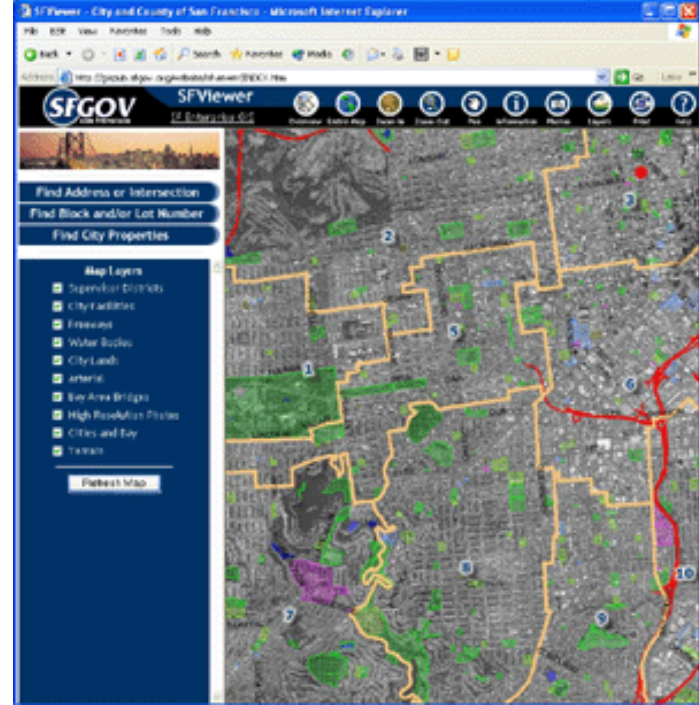
Connecting Disparate Information Is First Step Toward Security

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For those in the technology arena, large historic events have a tendency to effect radically how we approach our jobs. To a greater extent, those in government often times are required to re-examine how we do business when societal events come to rise. With the rise in terrorism over the past two years, and its impacts on security, the use of technology has (and will continue) to aid government in many aspects. In particular, efforts that leverage the use of geographic information systems to interconnect disparate information are becoming much more common in the average government employee's world.

San Francisco's effort to develop and implement an "enterprise" GIS program began in 1999, with Mayor Willie L.

Brown's mandate to consolidate GIS efforts in the Department of Telecommunications and Information Services (DTIS), the central technology agency for San Francisco (www.sfgov.org/gis).

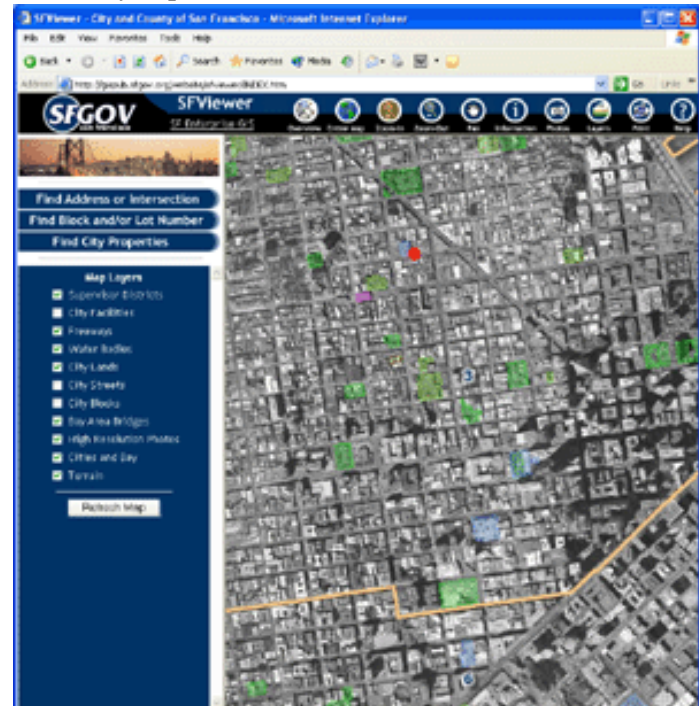


With approximately 25,000 full-time employees and 61 city departments, having a cohesive approach to how San Francisco uses geographic data in a standard fashion is a critical component to streamlining processes and increasing productivity. Additionally, security issues that involve close interactions between various public safety agencies (Police, Fire, Sheriff, Emergency Services, 911, etc.) often times rely upon the sharing of information that has a geographic context. Both functional areas - daily business processes, as well as public safety and protection - derive tremendous value from utilizing common GIS information.

Several key advantages were seen in developing this approach:

- Enterprise access to standardized data sets. Organizing and maintaining GIS data in an enterprise fashion creates a mechanism to allow standardized, dynamic access to spatial and other related attribute information.
- Cost-sharing. Developing a consolidated model to view, analyze, and maintain GIS information allows costs that were originally spread out

over many departments to be structured in one area.



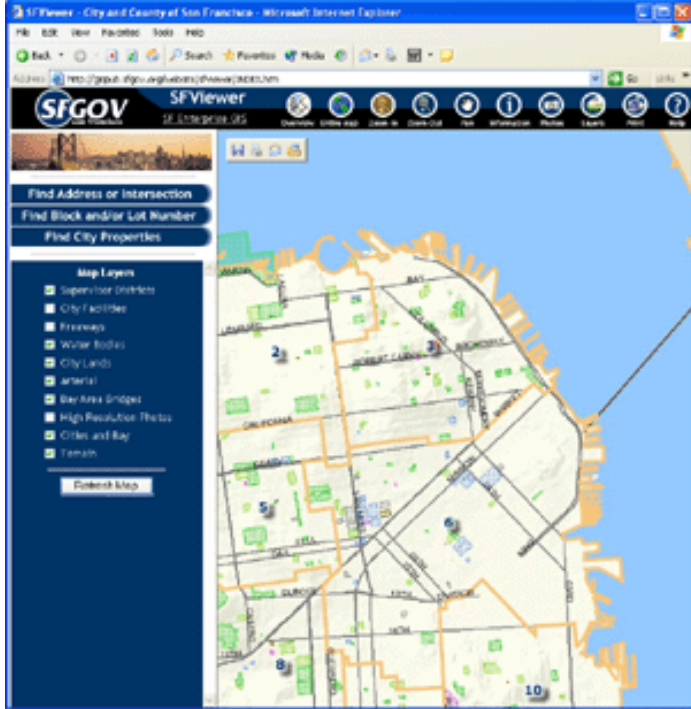
- Utilization of expert resources. By centralizing data dissemination and application development, San Francisco is able to share in the costs and overhead needed to develop complex information technology architectures, such as enterprise GIS.

- Data sharing. Serving as the "data provider" for the city, DTIS' responsibility is to collaborate with all city departments, assisting with integrating data into a "repository" from where all departments could access information, following a standardized methodology.

Often times described as the "Gateway to the West" San Francisco's beauty and diversity attracts visitors and concern regarding the protection of such a large and extensive metropolitan area. With an overwhelming need for public safety agencies to protect landmarks - Golden Gate Bridge, financial institutions, public gathering locations, utility and infrastructure - the ability to understand how location factors into these decisions is paramount. Several efforts are under way to utilize GIS for security efforts, particularly in the areas of emergency preparedness and police activity.

- Emergency services/emergency preparedness. The use of GIS for emergency exercises, planning and resource allocation, as well as the use

of mapping for large events (protests, rallies, athletic events) is being leveraged by multiple city agencies. In particular, the Mayor's Office of Emergency Services. San Francisco's Enterprise GIS Team at the Department of Telecommunications and Information



Services maintains and provides high-quality spatial data to city departments and the public. • Crime mapping. The City and County of San Francisco was awarded a \$1.5 million grant from the U.S.

Department of Justice's Community Policing group to develop a secure, integrated crime mapping system for the San Francisco Police Department. This system, which will leverage enterprise GIS data, will provide officers with near real-time abilities to view and map crime as it is occurring. By better understanding how location factors into crime analysis, this system will incorporate information from several areas to assist the SFPD with protecting San Francisco's citizens.

• Regional GIS data sharing for homeland security efforts. The City and County of San Francisco is active in the first Bay Area Regional GIS Council (www.baama.org/bargc), which reports to the State of California's GIS Council. The BARGC serves to provide leadership and support to GIS data sharing efforts for the nine-county San Francisco Bay Area, with a key focus on homeland security issues. While federal and state efforts tend to emphasize a macro view of the sharing of GIS data, the BARGC is one of California's first regional councils to attempt to deal with GIS sharing at the local level. There is no doubt that a key focus of security, especially in terms of governments' use of GIS, is the

ability for organizations to share and use common information. Along these lines, several programs at federal, state, and local levels facilitate this collaboration:

The United States Geological Survey's (USGS) National Map project <http://nationalmap.usgs.gov>. The National Map project is the USGS' effort to develop a consistent framework for geographic knowledge needed by the United States. This effort, implemented to be a seamlessly maintained and consistent grouping of online, public domain data sets, will serve as a basis for governmental and private.

Office of Management and Budget's Geospatial One-Stop project <http://www.geo-one-stop.gov>. The Geo-Spatial One-Stop project, a key initiative under President Bush's E-Government effort (<http://www.whitehouse.gov/omb/egov>), looks to be the overarching program to interlink geographic information will all agencies. Overseen by the Office of Management and Budget, the Geospatial One-Stop project has two key purposes:

1. Support the businesses of government - almost every aspect of government including but not limited to; disaster management, recreation, planning, homeland security, public health, environmental protection, etc. has a geographic component.
2. Support decision making - issues occur in places (e.g. floods, events, crimes) and decisions addressing one issue often have broader implications, sometimes affecting entire communities. Geospatial information allows decisions to be viewed in a community context; and can facilitate cross-agency coordination. In particular, the Geospatial One-Stop will focus on:
 - Developing a portal for seamless access to geospatial information;
 - Providing standards and models for geospatial data;
 - Creating an interactive index to geospatial data holdings at federal and non-federal levels; and
 - Encouraging greater coordination among federal, state, and local agencies about existing and planned geospatial data collections.

National Imagery and Mapping Agency's (NIMA) 133 Cities report <http://www.nima.mil/ocrn/nima/geospatial.html>. This NIMA-led project was conceived as part of a strategy to protect a large portion of the U.S. population from natural disasters and acts of terror. Mapping is integral to the effort, and the issues that have arisen in gathering and sharing map data for the 133 Cities Project (and USGS' corollary, The National Map) call for federal agencies to work with local governments to integrate data for the most populated municipal areas in the United States.

Other organizations that are pursuing efforts in GIS collaboration: National States Geographic Information Council (NSGIC) <http://www.nsgic.org>. NSGIC is an organization of states that are committed to efficient and effective government through the adoption of geographic information technology. Members of NSGIC include state GIS coordinators and senior state GIS managers from across

the United States. Other members include representatives from federal agencies, local government, the private sector, academia and other professional organizations.

Public Technology Inc. (PTI) <http://www.pti.org>. PTI is a national non-profit technology research and development organization based in Washington, DC., with a mission to bring the benefits of technology to local governments. PTI has a seat on OMB's Geo-Spatial One-Stop Board of Directors, and is spearheading a national GIS survey. With world events forcing technologists and politicians toward the same goal - a safer America - GIS appears to be an "enabling technology" to assist in this endeavor. What can you, the government official, take from these topics?

- Use of GIS in public safety and homeland security areas is critical to the success of government in a shrinking economy.
- The ability to enhance security with GIS is reliant upon a strong enterprise technology foundation.
- Government does not stop at municipal borders: local, state, and federal collaboration is essential to protecting YOUR constituency. The days of focusing on local problems, with little or no outside involvement are becoming less and less.
- Implementation of complex technology (such as GIS) is hindered more by political and organization barriers than by the technology itself. If decision-makers understand the advantages of technology and its relationship to enterprise goals and objectives - then they can make better decisions themselves. Technologists must become more adept at defining and describing these efforts - in a way that is understandable to the average person.

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