Paper Title

GIS: An Effective Executive Information System

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Paper Abstract

GIS continues to evolve in so many ways and across many disciplines. Local governments have embraced this technology to become an enabler for agencies providing services to the general public. Daily operations require managers and executives to be in touch with field personnel and contractors while tending to organizational and strategic needs. The city of Jacksonville leveraged the technology by creating a multi-tiered approach to track operations live, thus allowing executives to stay in touch with daily field activities. The paper will also address various strategies and details used to plan, design, and implement these and other related applications.

Paper Body

In recent years GIS has proliferated across many industries and became an integral part of several disciplines. The concept of integrating geospatial databases with tabular attributes gave a new dimension to data analysis and information management. Whether it is incident reporting or tracking mobile assets, the need for GIS is increasingly dominating operations. Time and time again, this emerging technology proves to be an indispensable tool upon which many managers depend in making daily decisions.

GIS was founded on three main sciences: Geography, Geometry and Technology. Recent advances in computer programming and data management gave developers the ability to manipulate data and provide accurate and real time feedback of live transactions. This capability turned GIS into an effective Executive Information System used to streamline operations and effect decision making.

This paper provides a detail of how GIS is being used by the City of Jacksonville Florida to track live data from two applications customized for the benefit of departments that render services to city agencies and the general public.

C.A.R.E.

The Citizen Active Response Effort (CARE) is a service based program that allows Jacksonville residents to call in via telephone, or report via email any issues, complaints, and requests for services. A clearing house organization receives each request and routes the case to appropriate departments. Cases are entered in a database and tracked as their status changes. Estimated completion times are governed by pre-determined thresholds for particular case types.

The CARE Solid Waste application was developed to track cases related to Solid Waste Management, a division of the Environmental Resources Management Department. The agency receives over a hundred requests daily relating to trash, recycling, yard waste and bulk waste removal. The application is divided into two modules:

- CARE Dashboard is an Arc IMS application that provides a continuous update of cases in a live environment. The dashboard serves as a tool to keep the department head and other managers abreast with Case status without having to manipulate the screen or use a mouse and keyboard. The application runs like a screen saver, thus allowing managers to assess the situation in the field at a glance. The background consists of basic layers for reference and orientation.
- CARE Search is a more detailed application that can be accessed from the dashboard. The search engine provides an advanced query tool that allows users to structure queries combining almost every field in the database. This comprehensive module is used by mid-level managers and operations executives in search for specific data or to develop an ad hoc report.

The CARE GIS application is used by 15 concurrent users, and since its inception in May 2005 approximately 62,000 cases have been processed and tracked.
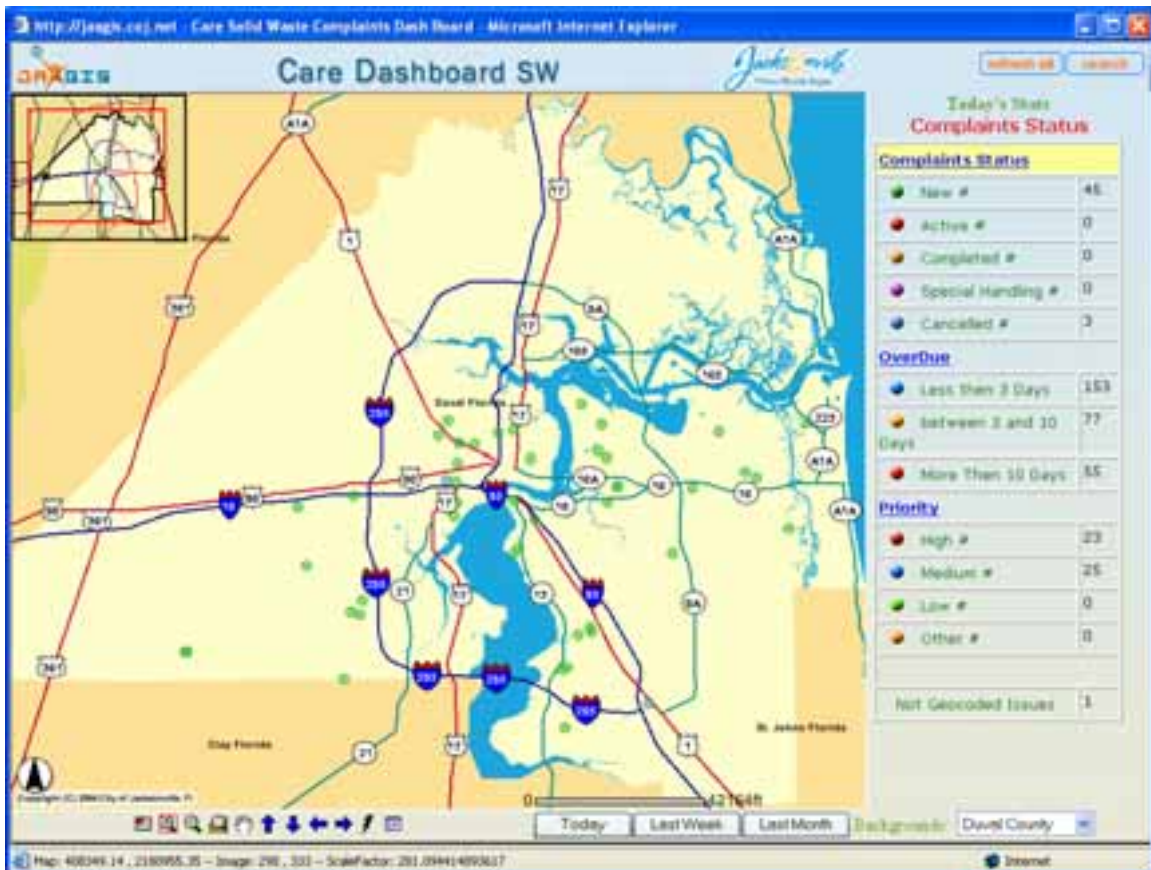
SAFER
The Satellite Asset Finder and Emergency Response is an AVL type project aimed at
tracking data from mobile assets in the field of operations. This system uses a proprietary
device to collect GPS and other data in a mobile vehicle and uses UHF radio for data
transport. The viewer is ArcIMS based and provides basic information as collected from
each vehicle at pre-designed intervals. In addition to location and speed the device on
board each vehicle is capable of capturing 5 events that are triggered by electric current.
The project is in a pilot phase whereby one hundred units have been deployed across
various city departments. At the present time the data being tracked consists of:
Location, Speed, and Engine On/Off. Using a polling rate of 1 poll per 20 seconds per
vehicle, the system processed 2,203,899 records since March 2006.
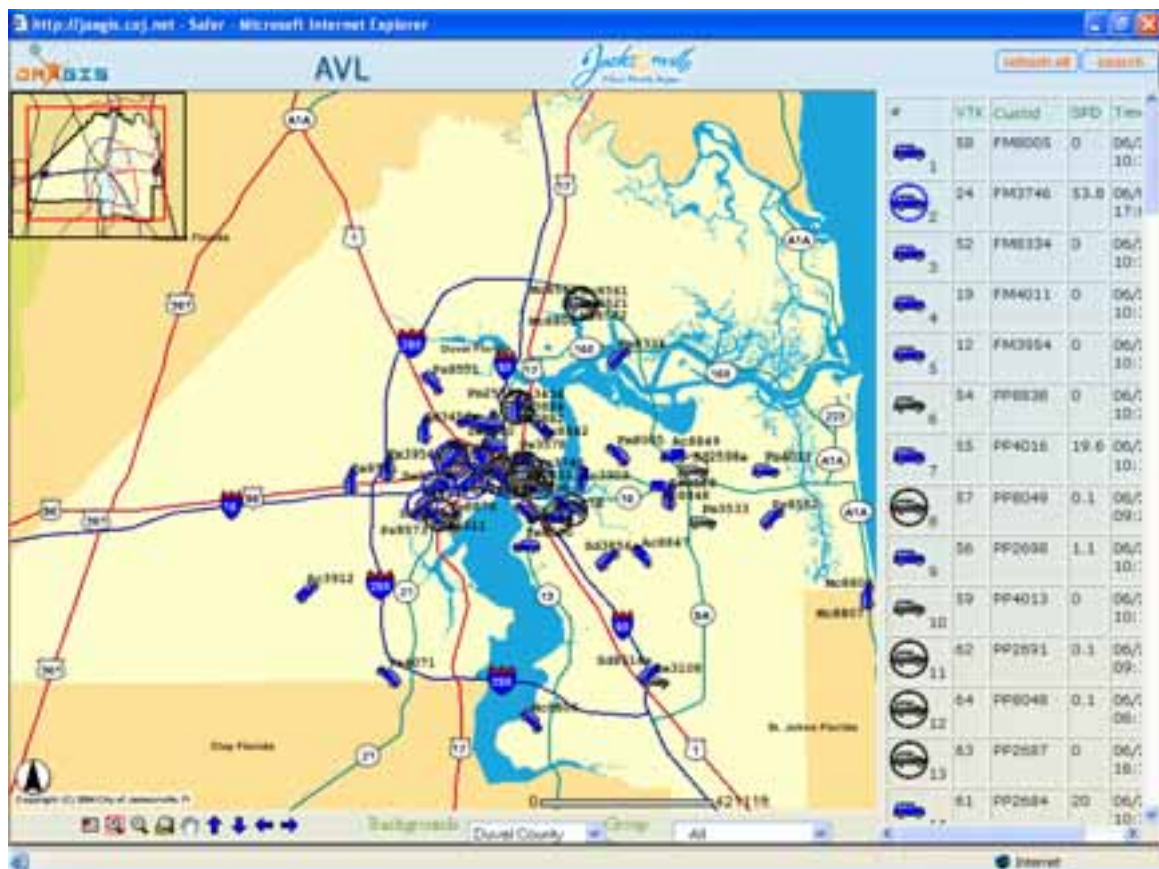
The applications mentioned above are only two in the arsenal of resources available to
employees of the city of Jacksonville and the general public. These tools are often used
to research land based features, maintain inventory, report and model incidents, locate
assets and services in proximity of particular parcels, and countless of other uses
throughout city government. The applicability of GIS clearly demonstrates the

effectiveness of this technology as a business enabler vital to decision making and essential to the "bottom line".

Acknowledgments

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