Creating Insight Through Location Technology

Event Management & First Response: Powered by Web Mobile GIS

Bruce Bishop, City of Marietta, GA & Kevin Stewart, GISi

ESRI International Conference – San Diego - 2015
Agenda

• Introduction
• Challenge
• Solution
• Benefits
Introduction

Site & Situation

- 23+ Square Miles
- 56,000+ Citizens
- ~260 Fire/Police Personnel
- ~100 GPS-Track Vehicles
- 2 Full-Time GIS Employees
- 1 Crisis Management Center (CMC)
Introduction

Crisis Management Center (CMC)
Introduction

Existing GIS Architecture

• GISi’s Custom-Built Applications
  
  #1 Fire Mobile
  
  #2 Crisis Management

• Esri’s ArcGIS 10.1 for Desktop; Server & SDE 10.0

• Utility Products’ Rocket System: Rugged, High-Speed Air Cards

Introduction

Existing Application #1

Fire Mobile

• Result of needs assessment
• Implemented in 2010
• Mobile application
• Intro’d GIS to Fire
• Standalone installation = high maintenance
• Required ArcGIS 9.3.1 (Generate Mobile Service Cache Tool)
Introduction

Before Fire Mobile
Introduction

Existing Application #2

Crisis Management
• Implemented in 2011
• Web-based, Flex API
• Used during planned & unplanned events
  • Ice Storms (Jan/Feb 2014)
  • 4th of July Parades/Fireworks
• Pivotal to CMC function
• Utilized ArcGIS Desktop & Server 10.0
Introduction

Existing Application #2
Challenge

Improve Existing Architecture

• Increase Support for First Responders
  • Reduce technical load
    - Eliminate standalone aspect
    - Less logins
  • Enhance situational awareness
    - Bring CMC perspective to Fire

• Strengthen Decision-Making of Admin in CMC
  • Incorporate Fire Department in COP
  • Simplify application interface
    - Less tools
    - Views based on strategic perspective
Challenge

Combine Existing Applications
Solution

Crisis Management 2.0

- Users login once for all views
- High-level admin view
- Crisis Management functionality
- CMC Capable
- Fire Mobile functionality
- Customized Javascript API
Solution

Features (Cameras)

- 35 live traffic cameras throughout the city
- Each camera exports jpegs every 5 minutes that are accessed by the application
Solution

Features (AVL)

✓ Automatic Vehicle Location (AVL) available

✓ Night-based basemap cached to accommodate bright screens/red light washout in fire trucks
Solution

Features (Event Management)

✓ Event Management functionality showcased via Incident Creator tool
✓ Markups seen by all Crisis 2.0 users
Solution

Features (Pre-Plans)

✓ Fire Mobile’s pre-plan functionality available, embedded in the Identify tool
Solution

Features (Tri-View)

✓ Fire Mobile’s Tri-View functionality remains, also embedded in the Identify tool.
**Solution**

**Mock Flood Event**

- **CMC Opens**
- **Power Outage layer populates**
- **CMC sees cluster of utility vehicles at HQ, contacts unaware supervisor to mobilize**
- **CMC Admin begins receiving info from Crisis 2.0**
- **Police dispatched to broken stoplights, CMC adds incident**
- **Utility crew responds to downed tree, adds traffic incident along way**
- **CMC uses camera JPGs to ID more stoplights out, adds incidents**
- **People stranded on roof, Fire uses Street View to determine building height, sends ladder truck**
- **Fire arrives at flooded building with HAZMAT materials, pulls pre-plan**
- **Fire establishes shelters, adds incidents**
- **Police locates temp helipad area, Identifies parcel for owner info**
- **CMC exports Event Manager table for FEMA, GEMA, other org. reports**
- **Flood Disaster Begins**
- **Flood Disaster Ends**
- **Incident timeline reviewed for improvements**
Benefits

Challenges Met

• First Responders have a reduced technical load and greater situational awareness

• Admin in CMC can make more informed decisions using a more efficient application
Benefits

Improvements from IT Perspective

• Went from 2 applications to 1
• JavaScript = desktop & mobiles
• Web-based solution
  - More efficient maintenance
• GIS group now fully migrated to ArcGIS 10.2.2
• GISi made development process quick, simple, and tailored to our needs
Acknowledgements

• City of Marietta (GA)
  • Bruce Bishop
    (770) 794 - 5551
    bbishop@marietta ga.gov
    marietta ga.gov

• Geographic Information Services, Inc.
  • Kevin Stewart
    (205) 941-0442 ext 135
    kstewart@gisinc.com
    gisinc.com