EMBRACING GIS IN THE FIRE SERVICE TODAY AND INTO THE FUTURE

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Firefighter/Engineer
GIS Specialist
BACKGROUND

• B.S. in Forestry & minor in GIS from Cal Poly
  • Several GIS related projects including senior project
  • Began involvement 4 years ago within organization
    • Work on data & map products
    • GIS Specialist on Incident Management Team
    • Chair on FIRESCOPE GIS Specialist Group
OVERVIEW

• History of mapping and GIS in the Fire Service
• Putting our GIS needs on paper
• Finding solutions
• Overview of solutions
HISTORY OF FIRE SERVICE MAPS

- Hand Drawn Maps
  - Run cards, wall maps, etc
- CAD Maps
  - Transition to computerized mapping
- GIS Maps
- Mobile Mapping
WHAT IS WRONG WITH THIS PICTURE??
BRIEF HISTORY AT SCCFD

- CAD Maps converted to GIS by County around 2000
- GIS map books made in 2001 for the department
  - Minimal updates throughout the years
- Panasonic Toughbooks CF19s deployed in Fire Engines in 2008 with ADASHI software
- In 2011 I began involvement in our GIS program
- Brought data and editing in-house
  - Data came from the County, Dispatch Center, outside agencies
BRIEF HISTORY AT SCCFD

- Began organizing and updating data
- Contracted with UC Santa Cruz
- Utilized interns from Foothill College
- Printed new maps in August 2012
- Created several map products for the department
SAMPLE MAPS
### Map Symbols

- **Hydrant**
- **Sub-Standard Hydrant**
- **Fire Dept. Connection**
- **Water Tank**
- **Swimming Pool**
- **Knox Box**
- **Gate**
- **Bollard**
- **One Way**
- **Access Point**
- **Private Bridge - Safe**
- **Private Bridge - Unsafe**
- **Other Bridge**
- **Preplan**
- **Hazmat**
- **Electrical Shut-Off**
- **Gas Shut-Off**
- **Water Shut-Off**
- **Automatic Sprinklers**
- **OS & Y Valve**
- **Post Indicator Valve**
- **Fire Alarm Panel**
- **Headquarters**
- **Fire Station**
- **Landing Zone**
- **Propane**
- **PGE Pipeline**
- **Call Box**
- **FWY Access Point**
- **Railroad**

### Parcel Symbols

- **Park**
- **School**
- **Hospital**
- **Photovoltaics on Property**

### Park Roads & Trails

- **Paved Road**
- **Unpaved Road**
- **Unmaintained Road**
- **Trail**

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2-13-05
PUTTING OUR GIS NEEDS ON PAPER

• ArcGIS Server Solution
• Simple device for mapping with MDM software
• Application that routes to calls, shows our GIS layers, and provides status communications with dispatch
• Solution to provide AVL and data connection
PUTTING OUR GIS NEEDS ON PAPER

- Web application needs
  - Common Operating Picture/Platform
  - Command & Control, real-time incident drawing tools
  - Site Plans/Pre-Plans
  - Performance Metrics/Data Analytics
  - Wildfire/Community Risk
  - Data Collection/Editing
SOLUTIONS

• Data structure - based on ESRI LGIM
• ESRI AGOL for quick maps
• Sierra Wireless oMG
• Apple iPad
• Cisco Meraki
• BCS - MARVLIS for iOS
• Intterra - SituationAnalyst
ESRI LOCAL GOV’T INFO MODEL

- Easy data exchange
- Use of app templates
- Use of a standard
- Customizable to fit own needs
ARCGIS ONLINE FOR ORGANIZATIONS

- Utilize quality base maps
- Upload our own data
- Use of analytical tools
  - Network Analyst, drive time areas
- Easy sharing with web links and embedding in websites
- Build maps quickly for easy decision making
SIERRA WIRELESS INMOTION

- Provides data connection to cellular network
- AVL feed from InMotion GPS
- Advanced vehicle tracking
- Vehicle Diagnostics
APPLE
iPad
CISCO MERAKI

• Cloud based enterprise mobility management
• Configure mobile devices
• App deployment
• Network settings deployment
• Rapid provisioning of apps
• Works across all platforms
• Security enforcement
BCS - MARVLIS

- Simple to use iOS application
- Two way communication with Computer Aided Dispatch (CAD)
- ESRI Basemap with map service of department GIS data
- Routing to calls
- CAD notes page with call detail information
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INTTERRA - SITUATION ANALYST

- Integrated Mapping & Analysis Portal (iMAP)
- Web application built on HTML5/Javascript
- Common Operating Picture/Platform (COP)
- Real-time incident mark up tools
- Incident performance metrics and data analytics
- Pre-plans, damage assessment tool, community risk tool
QUESTIONS???