FDNY GIS Unit
GISMO NYC Agency Applications Fair
Wednesday, November 20, 2019
NYU Pfizer Auditorium
Who We Are

11,314 Firefighters and Fire Officers
4,294 EMT’s, Paramedics and Officers
341 Engine and Ladder Companies
65 Specialty Fire Apparatus
(such as Squads, Rescue, etc.)
359 Ambulances
171 Fire Marshals
356 Fire Inspectors
174 Dispatchers
1,957 Administrative Support Personnel
(Mechanics/Trades-people, Technologists, Civilian Professionals, Etc.)

Services Provided

Fire Apparatus responded to:
316,000 fires, non-fire emergencies
(Over 1.1 Million Total Runs)
EMS responded to over 1.5 Million medical emergencies
(1.75 Million Total Runs)
Fire Marshalls investigated 7,062 fires for potential arson
Inspectors conducted 203,052 fire code regulatory inspections
11,063 Fire & Life Safety Education Presentations
Interagency Cooperation

New York City Agencies:
NYC Emergency Management
Police Department
Dept. of Information Technology & Telecommunications
Department of City Planning
Department of Environmental Protection
Department of Parks
Department of Transportation
Borough President Offices…

State Agencies
Bi-State Agencies
Non NYC Local Government Agencies
Federal Agencies…USSS (UNGA)
Preparedness

- **Preparation** is a continuous cycle of forecasting, planning, organizing, training, conducting exercises, evaluating, analyzing and making improvements

  - GIS is more than mapping
  - Analytical, Data Management & Visualization Tools
  - Data can be mapped, analyzed and utilized to make improved decisions
  - Decision Makers can exercise response and recovery plans during non-emergency drills
Progression to Feature Services

- No reliance on paper maps or forms
- Greater sharing and collaborating
- Greater situational awareness and true common operating picture
- Create simple more intuitive applications for the non GIS professional user
- More cost effective now across PC’s, laptops, tablets and smartphones vs expensive difficult to use GPS devices
• Internal WEB Map application displays Incident Locations and other data
FDNY CRIMS MAP Content

- Pop ups provide attribute data and links to both internal and external applications and data.

Links to:
- DOB Building Search Page
- Dual Maps Street View Page
- Cyclomedia API - StreetSmart Page
- Pre Incident Guides
- CIDS Information
- Floor Plans, BIC Card (EAP)
FDNY CRIMS MAP Content

- Plans linked to the station data, provide critical information for planning and incident commanders.
FDNY CRIMS MAP Content

CCTV Cameras
- Dept. of Traffic (DOT)
- EarthCam

- Links to public facing cameras from DOT
- Links to EarthCam Live streaming cameras
- Possible Collaboration to consume camera feeds from private partnerships
FDNY CRIMS MAP Custom Widgets

- **Pictometry On-line Widget** provides oblique imagery, with the ability to view archived imagery by date of capture.
- Provides staff chiefs and Incident Commanders with situational awareness, size-up & exposure identification prior to arriving on scene.

- Valuable when creating Preplans, Profiles & Exercises.
- **Archived imagery** used to compare areas from a previous date, as was the case for Hurricane Sandy.
- Tools can be used to measure area, height, length of buildings or areas.
FDNY CRIMS MAP Custom Widgets

- **Cyclomedia Street Smart Widget** provides **CURRENT** High Resolution Street View Imagery, collected 2X year
- **High Resolution** - see addresses, tags, features clearly
- Provides staff chiefs and Incident Commanders prior to arriving on scene, size up, situational awareness
- Advantageous for **Inspections, Pre-Planning, Exercises**

- **Archived imagery** provides comparisons of building facades, addresses, street conditions
- **Images are easily extracted & included in print and electronic packages** for the Incident Commander, staff heading to scene, operations group
FDNY EMS Hourly Map & Operations Dashboard

- Internal WEB Map application displays EMS Incident / Response Data
- Provides EMS Operations Current Situational Awareness for response times / call volume
• 1st Mobile CRIMS Map accessible by Operations in the field
• Services published from EC2 & ArcGIS Server & pushed to AGOL
• Ability to collect Building Damage Assessments electronically vs paper forms
• Display near real time data as it is collected

• External WEB Map application using Amazon EC2 & ArcGIS Server, AGOL, Explorer & Collector Apps, as a work around, due to firewalls & security settings
Incident Management Team
Drone 2 MAP

- Ability to take DRONE imagery captured, during missions and create GIS layers.
- Situational awareness for briefings and planning
- Create 2D and 3D map products from DRONE Imagery
FDNY Bureau of Management, Analysis and Planning (MAP)

• MAP is FDNY’s analytic center
• Organized as 4 Teams: GIS Unit, Operations Research, Data Quality, Strategic Planning

• Interdisciplinary team with backgrounds in geography, economics, epidemiology, statistics, data science, computer science, public policy, etc.
Spatio-temporal Incident Demand and Response Time (our most frequent analysis)
Even More so for EMS Than for Fire!

- Opiate Overdoses
- Stabbing Related
- Gun Fire Related
GIS Data Essential for Statistical Modeling

**Risk-Based Inspection System (RBIS)** uses a risk model to prioritize building inspections dependent upon both GIS techniques and data.

**PROBABILITY**
- Deep learning
- Probability of major fires

**IMPACT / CONSEQUENCE**
- Disease surveillance
- Risk ratio of civilian injuries and deaths
- Dasymetric mapping
- Night-time population estimate

**RISK**
- Risk-Based Inspection System (RBIS) uses a risk model to prioritize building inspections dependent upon both GIS techniques and data.
Track/Evaluate Pilot Programs

- Both EMS and Fire
- Set up dashboards to track pilots in Tableau
- Both descriptive and statistical analyses
F. Forecasting Need in Growth Areas

Major new construction projects can have a discernible impact on needs planning. The location of major new construction projects within community boards are displayed in Map 8. Some areas currently slated for major development or where major developments have been proposed are in areas of existing high need; Manhattan Community Board 8 and Queens Community Board 1 both fall into the top 10.
Special Event Planning

2019 World Pride Parade