Urban Search & Rescue: Data Collection, Aggregation and Dissemination
FEMA US&R and FEMA GIS

**FEMA GIS**
- HQ / NRCC
- Regions / RRCC
- National Incident Management Assistance Teams
- Agency GIS Cadre

**Formalizing GIS support of FEMA US&R**
- FEMA GIS community briefed on US&R needs
- FEMA GIS deployed with IST
- Developing capability

**Leveraging FEMA US&R Data**
- GIS community briefed on US&R mission products
- Successfully integrated this hurricane season
Current State

**Field Data Collected**
- “Iron Sights” Directive: GPS based system for collecting
- Results of Search Information Standardization Working Group

**Field Data Dissemination**
- Daily KMZ distributed via email
- GPX files uploaded to web service
- Dashboards (public and private)

**Search Data Analytics Working Group**
- Established August, 2017
- Subject matter experts from across FEMA US&R
- SMEs from FEMA, DHS, etc. as applicable
Ad-Hoc Experimentation

- **ESRI Collector**
  - SIS standard symbology in editable feature service
  - Test runs in numerous exercises
  - Parallel runs in some deployments
  - Key issues identified:
    - Learning curve requires practice which raises account management issue
    - Offline function has some overhead for technical personnel
    - Offline synchronization over satellite based internet not always successful
    - Device battery life

- **ESRI Survey123**
  - Offline reference map functionality limits
2017 Evolutions

- **Hurricanes Harvey and Irma**
  - FEMA GIS delivered products to N-IMAT and RRCC
  - Fed into decision making process (CAP AOIs, DSA, TSA)

- **Quantifying US&R Efforts**
  - Senior leadership briefings
  - Puerto Rico:
    - 2,6894 structures
    - 1,216 assists
    - 17,500 miles traveled in 14 days

- **Remote GIS Support Model**
  - Puerto Rico: Reach back geoprocessing resulted in 23 reconnections and 9 medivacs
2017 Evolutions

**Hurricane Maria**

- Massive dissemination of US&R data
- Massive and cumbersome effort to get there:
  - IST delivered GPX to NGA
  - NGA published to web service / FEMA dashboard
  - Region 1 created mirror service that filtered sensitive information
- Publicly available dashboard: over 100,000 views
- Distributed far and wide:
  - FEMA Modeling and Data Working Group
  - Crowd sourcing efforts
    - Stand By Task Force: road status web map of PR

http://fema.maps.arcgis.com/apps/webappviewer/index.html?id=22c54c8a27a9411cbece8fa12a701ce6

Future Goals

- **Stress the Immense Value of US&R data**
  - Immediate response / tactical
  - Larger picture emergency management response and recovery

- **SAR Data Collection, Aggregation, Dissemination**
  - Defined data patterns for collection
  - Consumable formats
  - Automated processes
  - Span organizations and tiers of government
  - Seamless geographic view of aggregated activity per event

- **Standards and Doctrine**
  - Make this part of how we operate