Leveraging the Washington Master Address System for Wildfire Structure Assessments

WAMAS Database, NIFC ArcGIS Online, Collector for ArcGIS

ESRI User Conference 2017
Working with Structural Firefighters

- Structural Firefighters from across the state
  Unfamiliar with neighborhoods, terrain, fuels
- Quick assessment of the population at risk
  Distribution of residences
- Detailed assessment of individual structure defense
- Damage assessment of affected structures
- Identify types of structures
- Identify associated hazardous materials
- Identify significant historical buildings
Structure Defense and Damage Assessment

- **Black**
  already burned and destroyed

- **Brown**
  already burned with some damage

- **Red**
  high risk
  significant preparation needed

- **Yellow**
  moderate risk
  moderate preparation needed

- **Green**
  low risk - FireWise
  almost no additional preparation needed
Statistics for Governor and Legislators

- Identify types of structures
  - Primary residence
  - Secondary residence
  - Business
  - Outbuilding
- Need for emergency shelter
- Funding for reconstruction
Collecting Data – Crayon, GPS vs Collector

- Map sketches
  Printed or no map, map skills, sketch skills, margin notes, many teams and levels to correlate, messy, late COP
- Global Positioning System – accurate locations plus noise
  Receivers – agency provided, personal, smart phone
  Lots of points, memory, notes to interpret, typing errors
  Lots of sources, perspectives, correlation, use of GPX fields
  Often road location represents house off the road
- ArcGIS Collector App
  Focused use – structure protection assessment
  Point placed by integral GPS or selected location
  Configured fields, allowed values, fast
Structure Assessment Convergence

- **2014** – More large fires and increasing wildland/urban interface
  - Additional construction without mapped locations
  - Structural firefighter GPS – no GPX field standards
  - Personal mobile devices
  - Incident maps with QR codes posted on Cloud

- **2015** – Okanogan County Emergency Management preparation – largest fire
  - Located structures in advance
  - More efficient structural assessment procedures

- **2016** – NW Team 11 ArcGIS Collector
  - ArcGIS Collector template for use on fire
  - NIFC ArcGIS Online site
  - Team tablets, mobile devices
  - WAMAS state address location database
Washington Master Address System (WAMAS)

- Washington State
  Office of the Chief Information Officer/Innovation Lab, Departments of Ecology, Health, Revenue, Social and Health Services
  State, County, City, EMS partners

- Database of structure locations with complete address
  Address coordinates
  USPS standards
  State/local government address correction
  Locations within jurisdictions

- Shared services
ArcGIS Online - National Interagency Fire Center

ArcGIS Online: nifc.maps.arcgis.com

Members: Geographic Information System Specialists (GISS), Public Information Officers (PIO)

Groups: Incidents, Incident Response Teams, Data, Tools

Content
Design the Collector App

- Design/build GDB
- Cut unneeded fields for performance
- Read-only GDB – base data clipped to incident
- Edit GDB – incident operations data
ArcGIS Online – NIFC
Build the Collector App

1. Create app folder in My Content
2. Upload base and ops GDB.zip files
3. Create MXD using AGOL service definitions
4. Create Web Map by sharing to AGOL from MXD
5. Tune Web Map
6. Share to incident structure group
ArcGIS Online – NIFC
DEMO Use Collector App

Office
1. Open Collector and log in AGOL
2. Open Structure web map and download/sync

Field – collect assessments

Office
1. Upload/sync
2. Log out
Field
1. Select WAMAS address point
2. Use location for new structure assessment (green, yellow, red...), feature template sets PROTECTION_ASSESSMENT
3. Select STRUCTURE_TYPE
4. Select DAMAGE_ASSESSMENT if already damaged
5. Select HAZ_MAT if hazardous materials on site
6. Select HISTORIC_BLD if building over 50 years
7. Enter correct ADDRESS_TEXT if needed
8. Enter COMMENTS_TEXT if needed
9. Take a photo or link a document
After the fire...
Questions?

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More Information:
http://nifc.maps.arcgis.com  NIFC Fire GIS
http://firewise.org  FireWise home and community preparation
http://gis.nwcg.gov  Fire GIS
http://www.nifc.gov  Fire Information
http://www.dnr.wa.gov  Fire Information, Geologic Hazards
http://www.emd.wa.gov  Hazards, Preparedness, Assistance
http://www.doh.wa.gov  Emergencies
http://www.fema.gov  Preparation, Response
http://www.seattletimes.com/seattle-news/northwest/mapping-wildfires-how-they-do-it/  Mapmakers: Unsung heroes in the battle against wildfires