2016 ESRI User Conference

How to Use ESRI's Map Editor to Integrate Emergency Response Planning

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Room 30D (1:30 -2:45)

Sonoma County Operational Area (OA)

The Emergency Management Division of the Fire and Emergency Services Department is responsible for the planning, coordination of response, recovery, and mitigation activities related to county-wide emergencies and disasters

- OA Consists of 9 cities, 2 special districts, and 26 county departments
- Population >500,000 people
- 3 full-time Emergency Management staff members

Facility Mapping Project

Background:

- Sonoma County Fire & Emergency Services Department is interested in improving it's ability to coordinate and collaborate with it's Operational Area (OA) partners and enhancing it's ability to provide public information and warning to it's residents during disasters
- Desire to reduce our reliance on proprietary systems such as WebEOC and CalCOPs
- Acknowledge that assorted department, city, state, and federal emergency response plans conflicted geographically
- Desire to understand to what extent we can spatially support assorted types of emergency responses
- Initial focus on basic Incident Command Systems (ICS) facilities

Facility Mapping Project – Continued

Goals:

- To partner with local, state, & federal agencies to obtain new data and non-traditional data for Sonoma County Fire & Emergency Services and OA partners
- Create a map editing application to define information requirements, identify planning deficits, & enhance information sharing between OA partners
- Create a map viewing application to enable decision makers, improve situational awareness between city, county, and state leadership teams, & strengthen public information and warning for OA residents

Facility Mapping Project - Continued

Project Issues:

- Problems in identifying map features
  - Required attributes have not been identified by FEMA or CalOES
  - Reporting requirements or information requirements have not been identified
  - Symbology for assorted attributes have not been standardized
- Moving forward
  - Internal working group collaborated and identified 26 attributes (Table 1) and their associated data requirements in CSV format
  - Working group requested symbology from FEMA and CalOES
  - Developed simple definition query and template MXD file

One Data Source – Multiple Viewers/Editors

- Schema Development
  - Internal county working group developed information requirements/schema for most map attributes
  - Schema for the Emergency Shelters and Emergency Generators were acquired from American Red Cross and U.S. Army Corp of Engineers
- Symbology
  - Utilized ESRI symbology and military C2 symbols
- REST Services – ArcGIS Online
- Geocoding
  - Facility address geocode in ArcGIS

Attributes

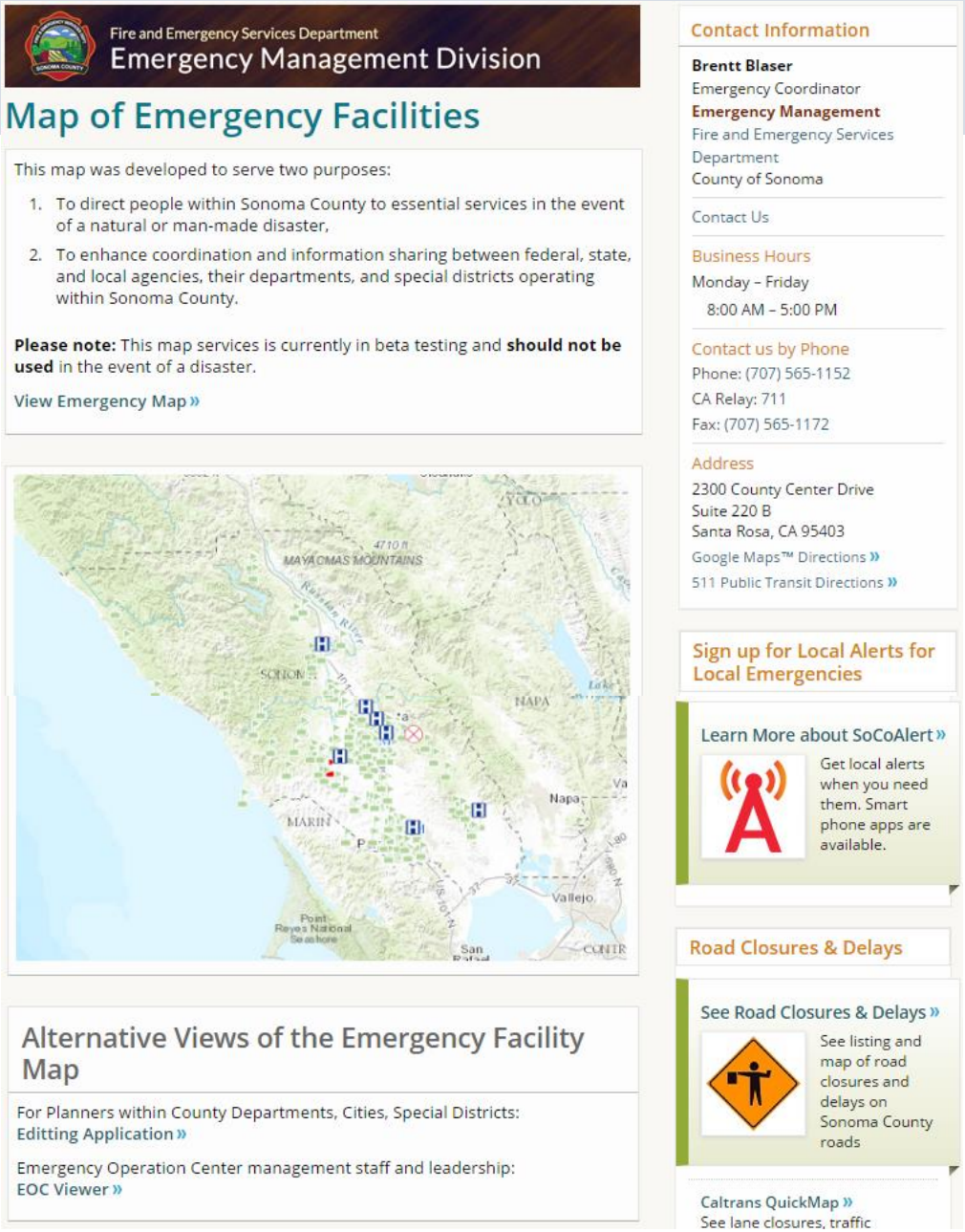
- 26 Attributes within the Map Editor
- Table 1 lists all attributes within the Facilities Map Editor
  - The public viewer can only display the attributes listed in green. Additionally, the public viewer only displays the particular points that have been selected within the editor

Table 1: Map Application Attributes

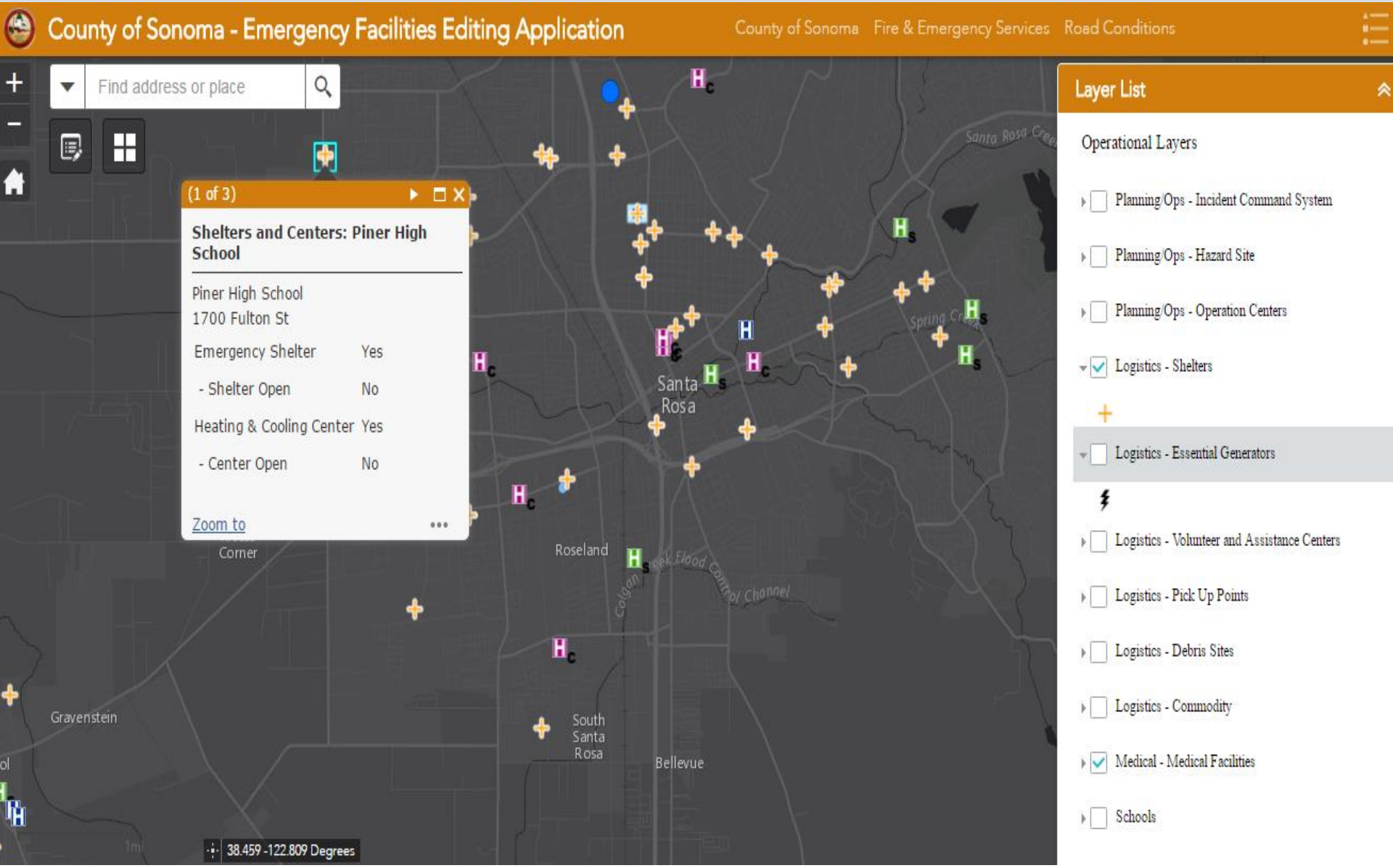
Public Viewable		**Public CANNOT View**	
Emergency Shelters	Hospitals	Emergency Operations Centers (EOCs)	Incident Command Posts (ICPs)
Heating & Cooling Centers	Clinics	Medical Logistical Staging Areas (MLSAs)	Joint Information Centers (JICs)
Volunteer Reception Centers (VRCs)	Skilled Nursing Facilities	Commodity Logistical Staging Areas (LSAs)	Helibases
Local Assistance Centers (LACs)	Medical Points of Dispensing	Essential Generators	Helispots
Commodity Points of Distribution	Alternate Care Sites	Bases	Mobile Weather Units
Debris Sites	Pick Up Points	Camps	Mobile Relay
Schools		Staging Areas	

One Dataset – Multiple Viewers/Editors

- Editing Application
- Public Viewer
- EOC Viewer



Editing Application



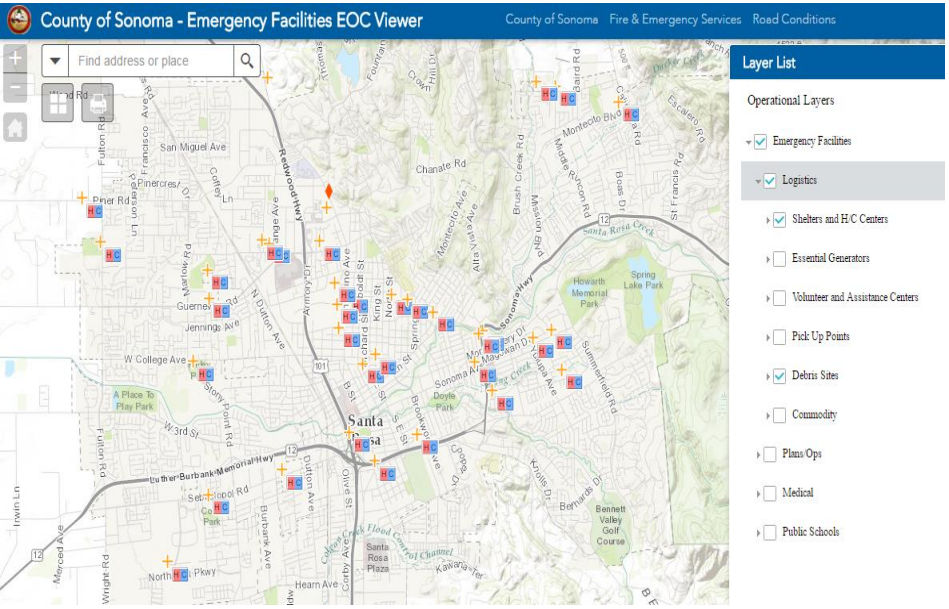
Editing Application Development

- Editing data through four separate REST service
  - Login required to access the HTTPS service
- Customized pop-up to show general information
- When editing point all attributes accessible
  - Domains used when possible
- Customized viewer
  - Color
  - Tools

Viewers

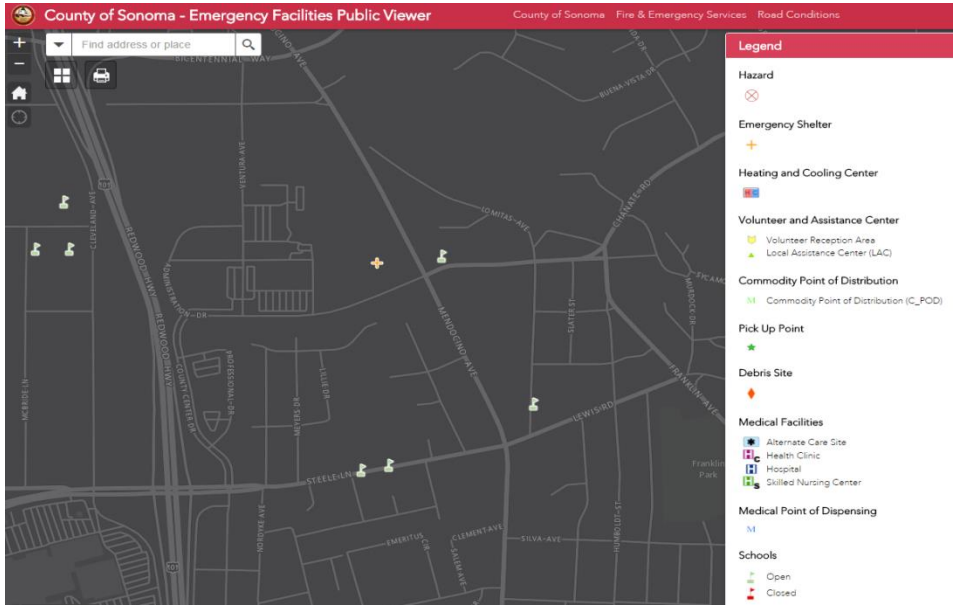
EOC Viewer

- Enables decision makers to view all attributes

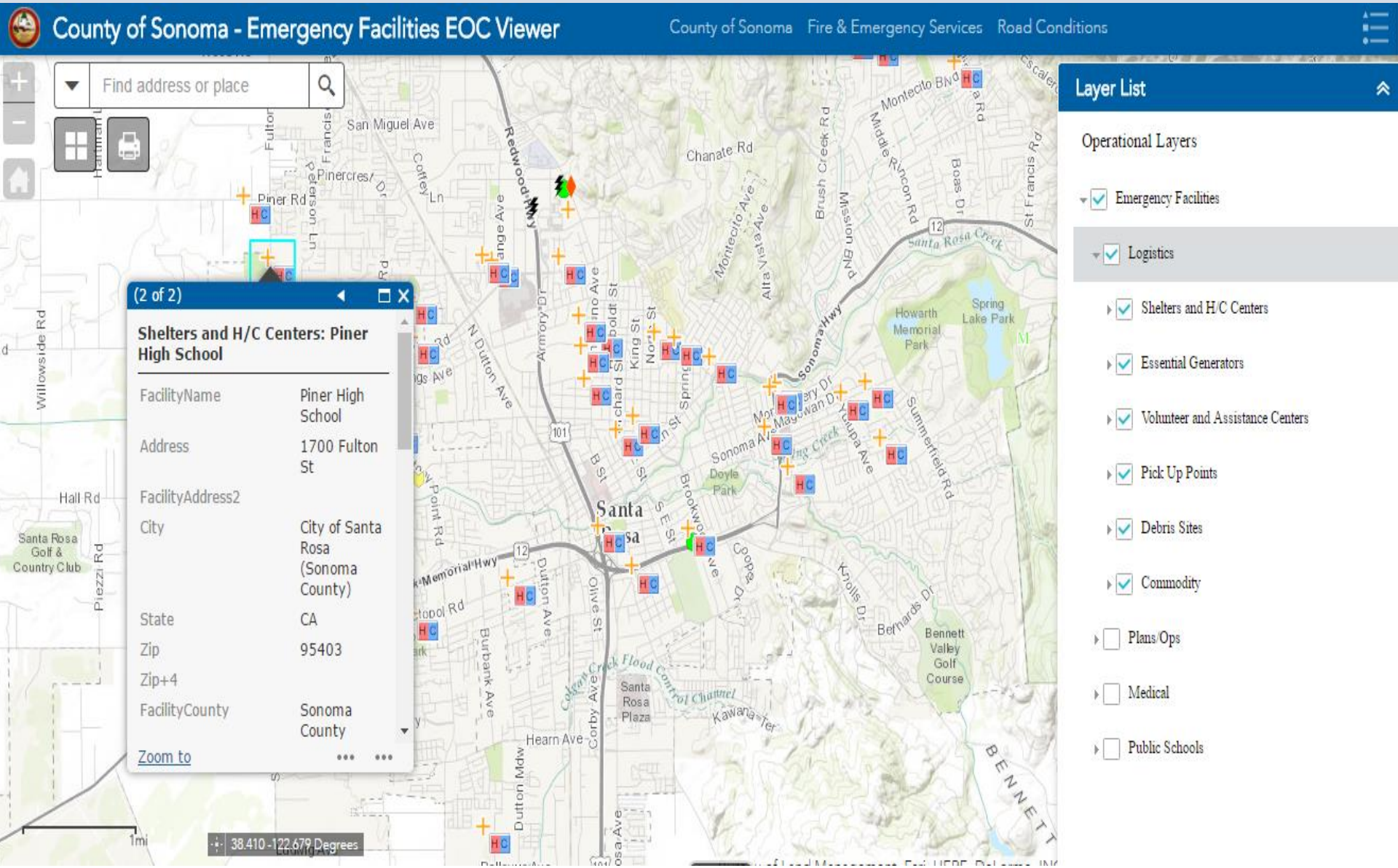


Public Viewer

- Refers the public to selected and operational emergency facilities



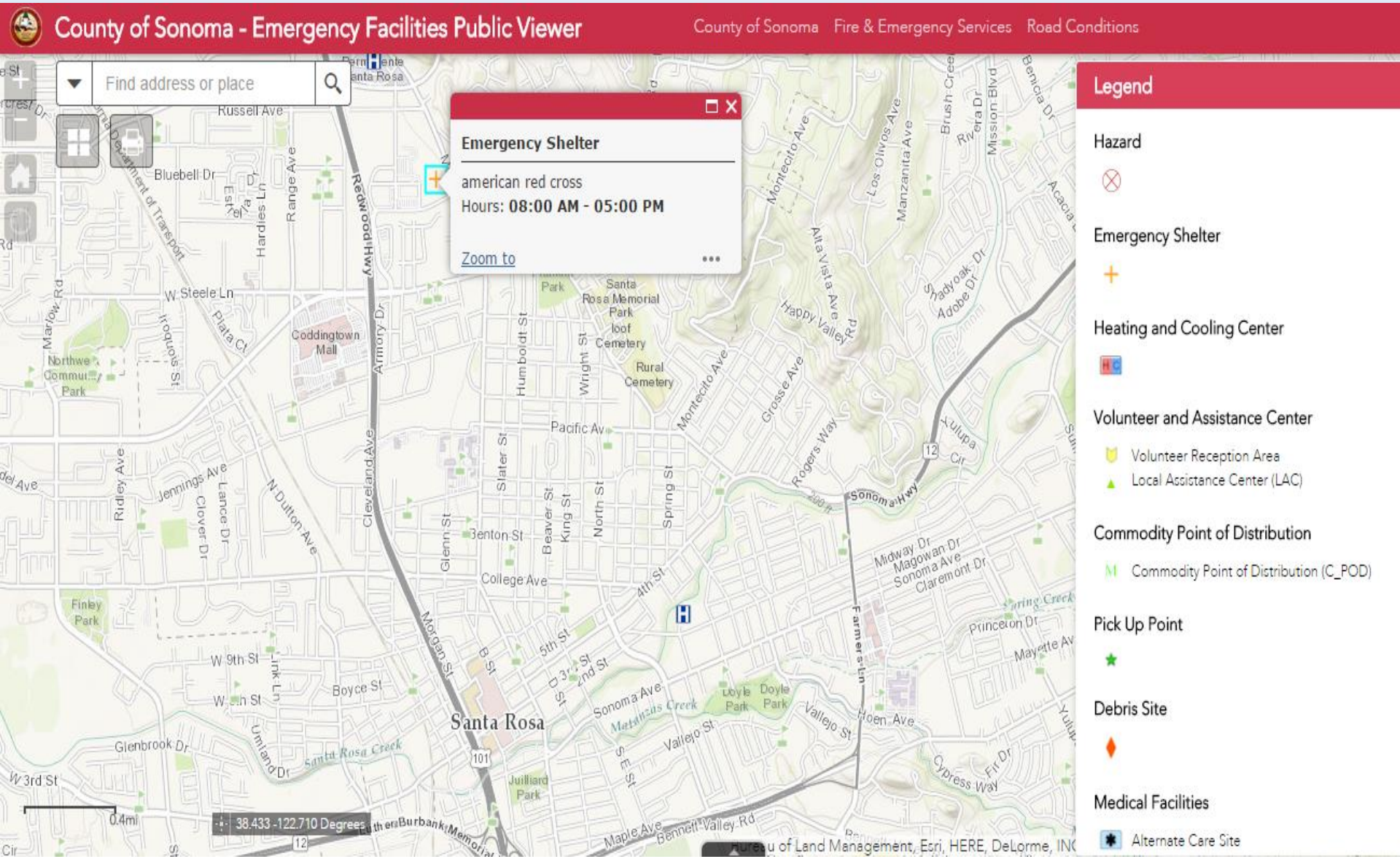
EOC Viewer


County of Sonoma - Emergency Facilities EOC Viewer
County of Sonoma
Fire & Emergency Services
Road Conditions
Find address or place
(2 of 2)
Shelters and H/C Centers: Piner High School
FacilityName
Piner High School
Address
1700 Fulton St
FacilityAddress2
City
City of Santa Rosa (Sonoma County)
State
CA
Zip
95403
Zip+4
FacilityCounty
Sonoma County
Zoom to
Layer List
Operational Layers
Emergency Facilities
Logistics
Shelters and H/C Centers
Essential Generators
Volunteer and Assistance Centers
Pick Up Points
Debris Sites
Commodity
Plans/Ops
Medical
Public Schools
Santa Rosa
38.410 -122.679 Degrees

EOC Viewer Development

- All data available to view
- Displays the edit data (but in this app it is not editable)
- Layers are grouped
- Login required to access the REST Service
- Customized viewer
  - Color
  - Tools

Public Viewer



Public Viewer Development

- Single REST Service containing only layers public can view
- No login required
- Customized viewer
  - Color
  - Tools

Next Steps

- Collaborate with NAPSG, FEMA, & CalOES to create intuitive & standardized public facing symbology
- Create AFN/ADA compliant webpage
- Enhance editor login security
- Add fields to attribute tables to support site maps and pictures
- Provide URL to cities and special districts to integrate the public viewer into their organizational webpages
- Deconflict planning assumptions between response partners
- Develop a series of exercises to spur planning efforts within the incorporated areas of the OA

Questions?

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"If everyone is thinking alike, then someone isn't thinking."
--George S. Patton

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