Triaging Healthcare Facilities for Emergency Operations

California Office of Statewide Health Planning & Development

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When? - Not if.

- **>99%** probability of M6.7+ in CA within 30yrs\(^1\)
- **62%** probability of M6.7+ in SF Bay region within 30yrs\(^2\)
1971 “Sylmar” Earthquake
(San Fernando Fault Zone)

- Magnitude $M_w$ 6.6
- Avg Displacement 3 ft.
- 65 dead
  - Most in V.A. Hospital
- $500M$ damages
Responsibility - OSHPD

- Facilities Development Division (FDD)
- To respond to all significant earthquakes & verify hospital and skilled nursing facility building safety after an earthquake event.
  - Not 1st responder.
  - See Health & Safety Code, Section 130025.
    - Inspect buildings for safety & tag red, yellow, green.
- Staff inspect buildings regularly for permitting.
EOC Information System, background

- How do you triage the facilities??
- Extended existing CA Healthcare Atlas
  - Browser-based .NET web application
  - Proof of concept (of EOC functionality)
  - Small budget
  - Short development time
  - Cross-references facilities ↔ events
- Target User ➔ OSHPD Emergency Staff
Typical Event Scenario

- Earthquake Happens
- USGS Data Consumed (automatically)
- E.O.C. Team Activated (or not)
- Triage & Investigate
  - Atlas-EOC web application
  - ArcGIS Desktop
  - Other non-GIS applications
- Manage the Event
System Overview

- Sensor Network
- Facility LogBook
- ShakeMap
- Spatial
- .NET
- Perl+
- Python
- SOAP
- ArcIMS

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Live Demonstration

- **All Facilities** Perspective
- **All Events** Perspective
- **Single Facility** Report
  - Critical Buildings
- **Single Event** Report
- Reference Links
All Facility Report Tab

- **Facilities impacted within** time period & shaking threshold
- **Summary Stats**
- **Critical** Buildings
- **Links**
  - Single facility report
  - Maps
Single Facility Report Tab

- Recent Event Summary
- Buildings Summary
- Critical Buildings
- Metadata (event’s)
- Google Earth/Map links
- Cross-Reference to other events within time period
All Events Report Tab

- List all events within selectable time period
- Summary Statistics
- Links
  - Single event report
  - Maps
Single Event Report Tab

- List Facility Impacts above shaking threshold
- Summary Statistics
- Links
  - Metadata
  - USGS Graphic
  - Google Earth
Google Earth Link

✓ Any KML source can now be integrated
Status & What’s Next?

- Proof-of-Concept → Production
- ArcGIS Server
- Add Event Types
  - Fire
  - Flood
- Real-time Field Staff Updates of building safety status as tagged.
- Facilities Division is re-engineering their business process.
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Questions?

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