

# ESRI UC 2015

Making Tomorrow Possible Today



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**IT Gas Business Technology**



## § About PG&E

§ Our Customer Number is 3 digits J

§ We have several major GIS initiatives overall.

## § About Gas System Operations

§ TAMI project kicked off May 2013.

§ Operational August 2013.

§ Continuous improvements since then with monthly releases.

§ Supported by 4 environments (Development/Test/QA/Production).

§ 28 servers in total, 99.999% availability, runs simultaneously at 2 data centers.

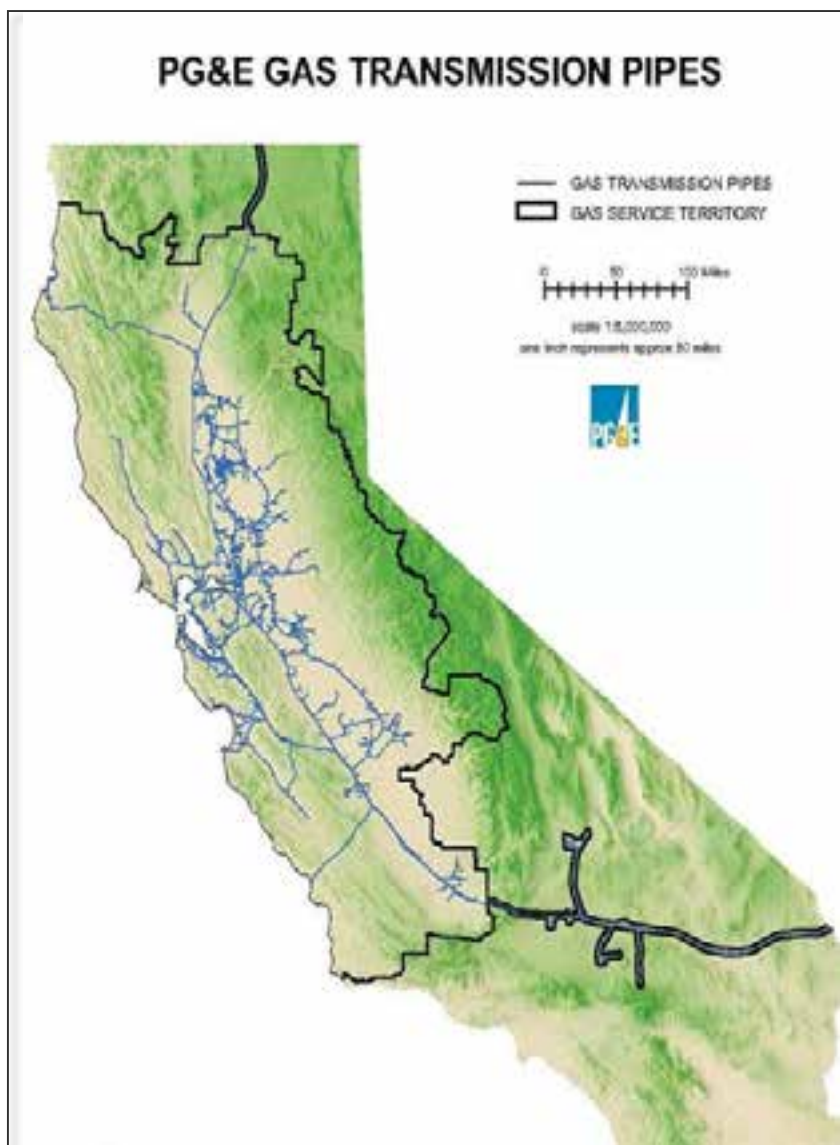
§ ArcGIS Server, SDE, and Goevent server extension based.

§ Scripts and SDKs

§ HTML5 User Interface

§ ORACLE and MS SQL Server databases

# PG&E Background



- § Serves approximately 15 million people throughout a 70,000-square-mile service area
- § Operates approximately 6,750 miles of gas transmission pipeline~ 42,000 miles of gas distribution pipeline
- § 4.3 million natural gas customer accounts.
- § Deliver 970 BCF/year
- § Approximately 105 BCF of gas storage
- § Approximately 203,000 HP of compression
- § Gas System Operations – Safe and Reliable Operations of Transmission and Distribution 24X7

## PG&E Enterprise

**Vision:** The Leading Utility in the United States

**Strategy:**

Deliver safe, reliable, and affordable electricity and natural gas

- Customer Focus
- Operational Excellence

## Gas Operations

**Vision:** The Safest, Most Reliable Gas Company in the United States

**Strategy:**

We will deliver gas safety excellence by:

- Putting safety and people at the heart of everything
- Investing in the reliability and integrity of our gas system
- Continuously improving the effectiveness and affordability of our processes

## Gas Control

**Vision:** The Front Line for Public and Employee Safety and System Reliability

**Strategy:**

Transform data into intelligence to operate predictively and proactively in order to identify and mitigate risks in real time.

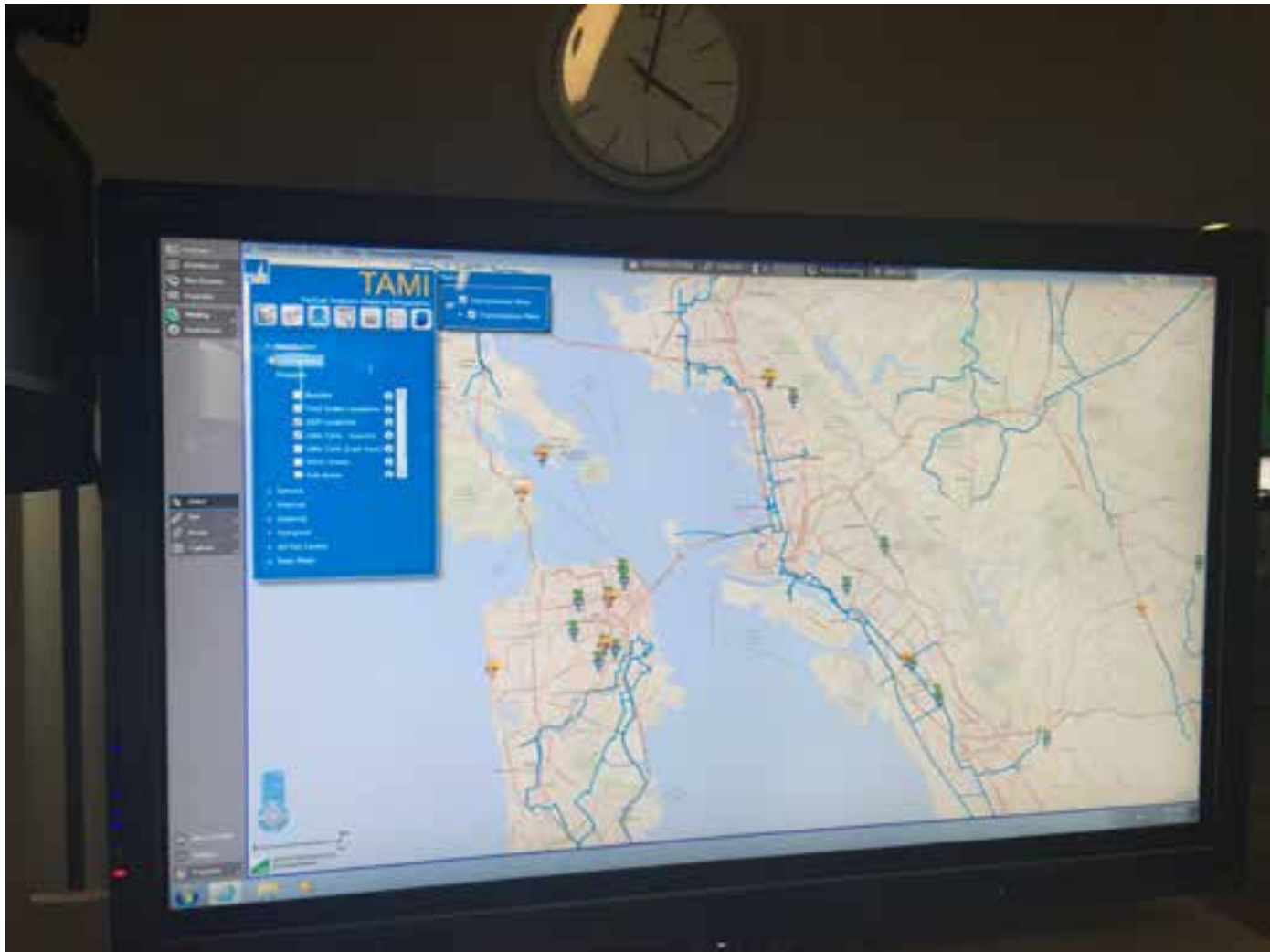
# Leveraging Technology to Reduce and Mitigate Operational Risk



# Transmission, Distribution, and Dispatch are colocated



# TAMI - Tactical Analysis Mapping Integration



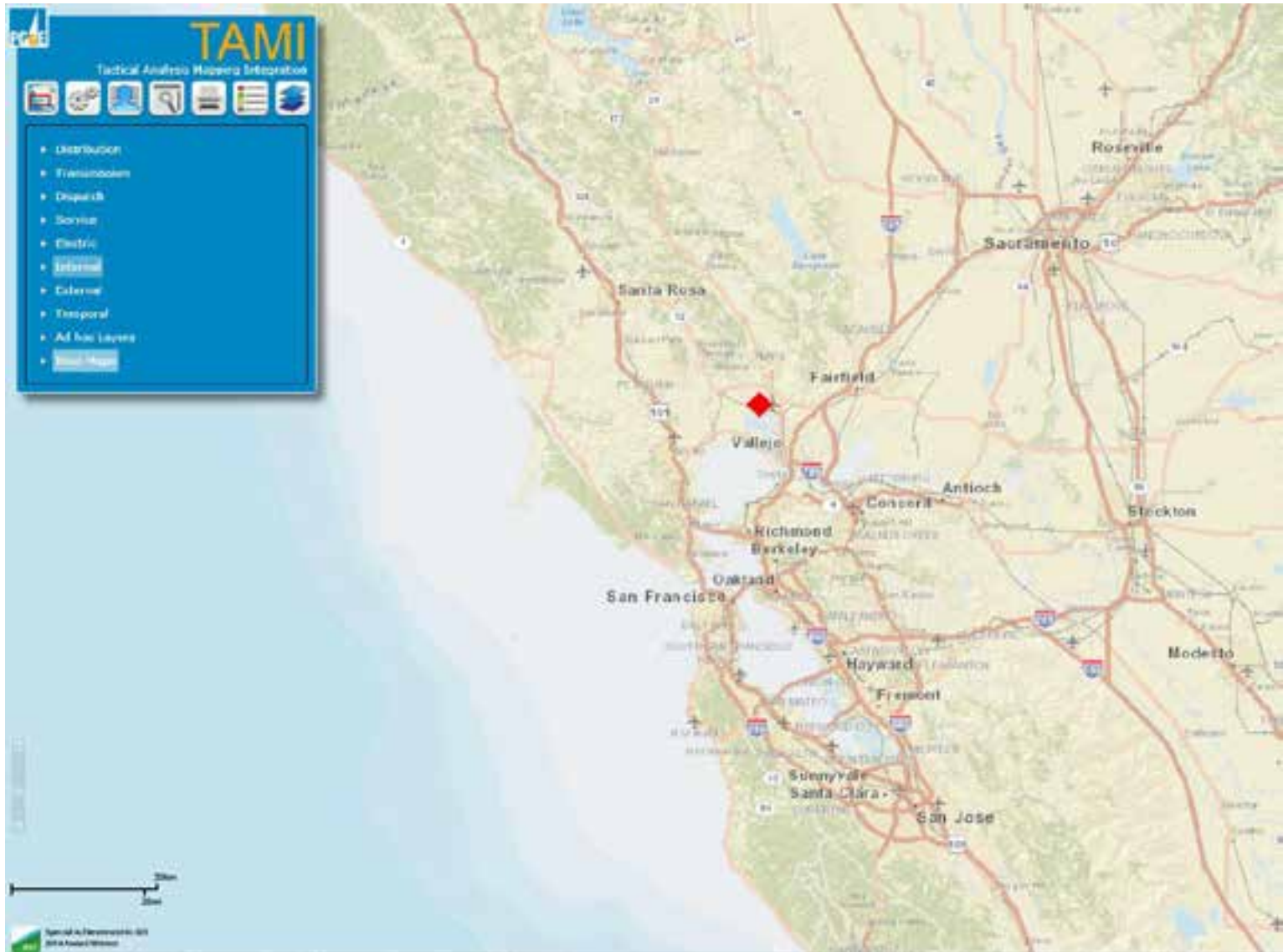
**TAMI** is a system that provides intelligent use of geospatial and temporal data for managing operational risk.

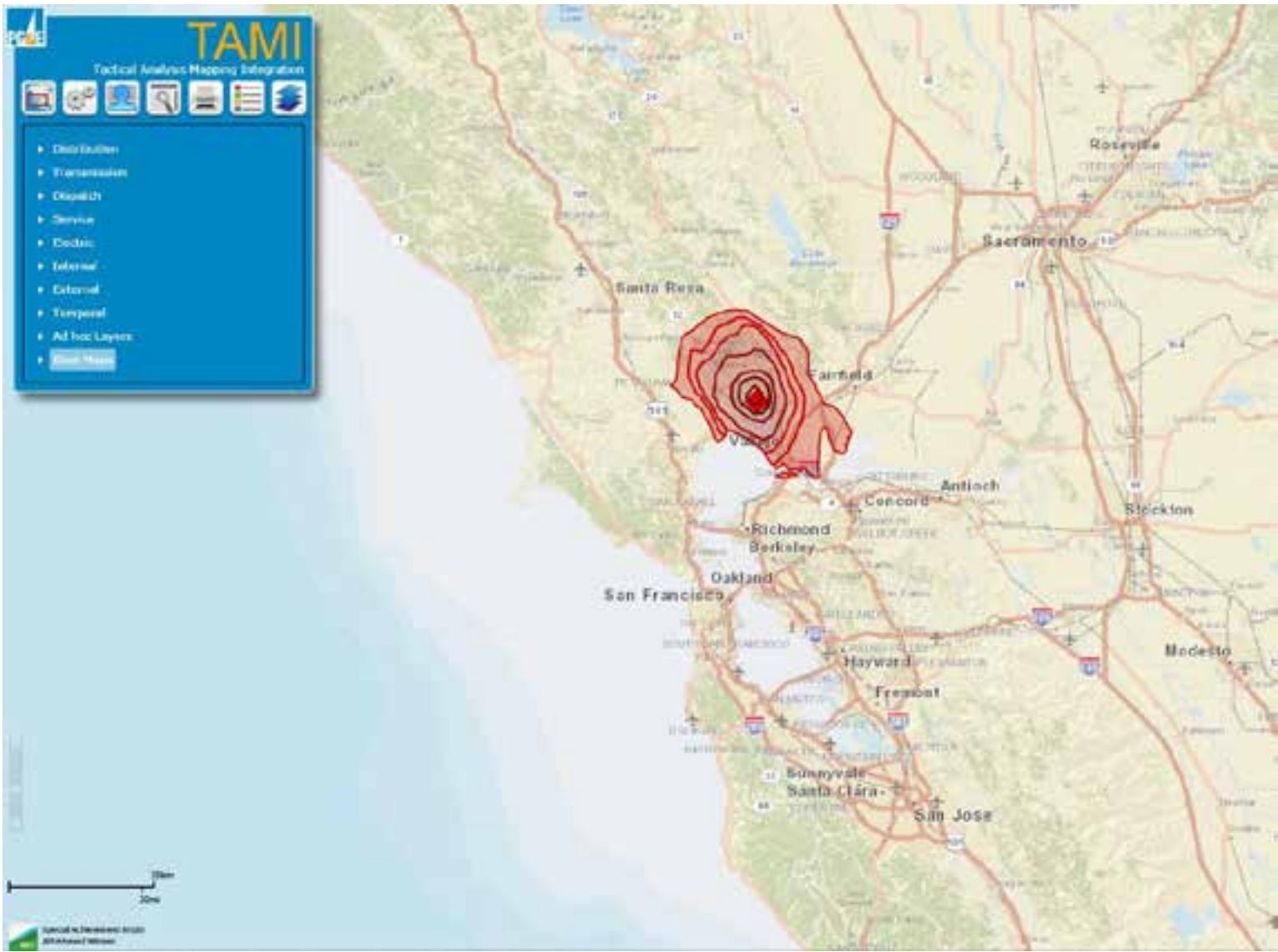


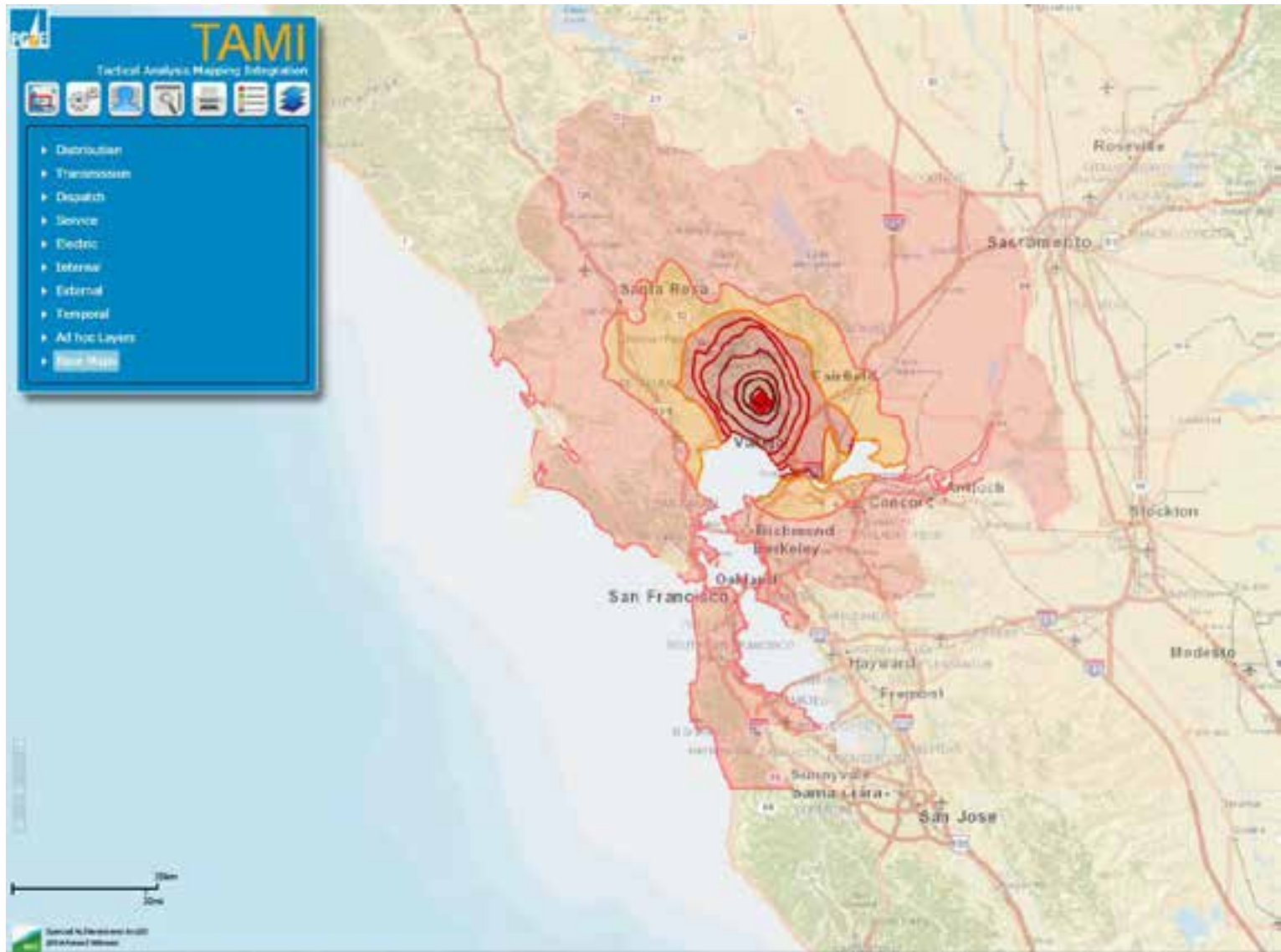
# Napa Earthquake 2014

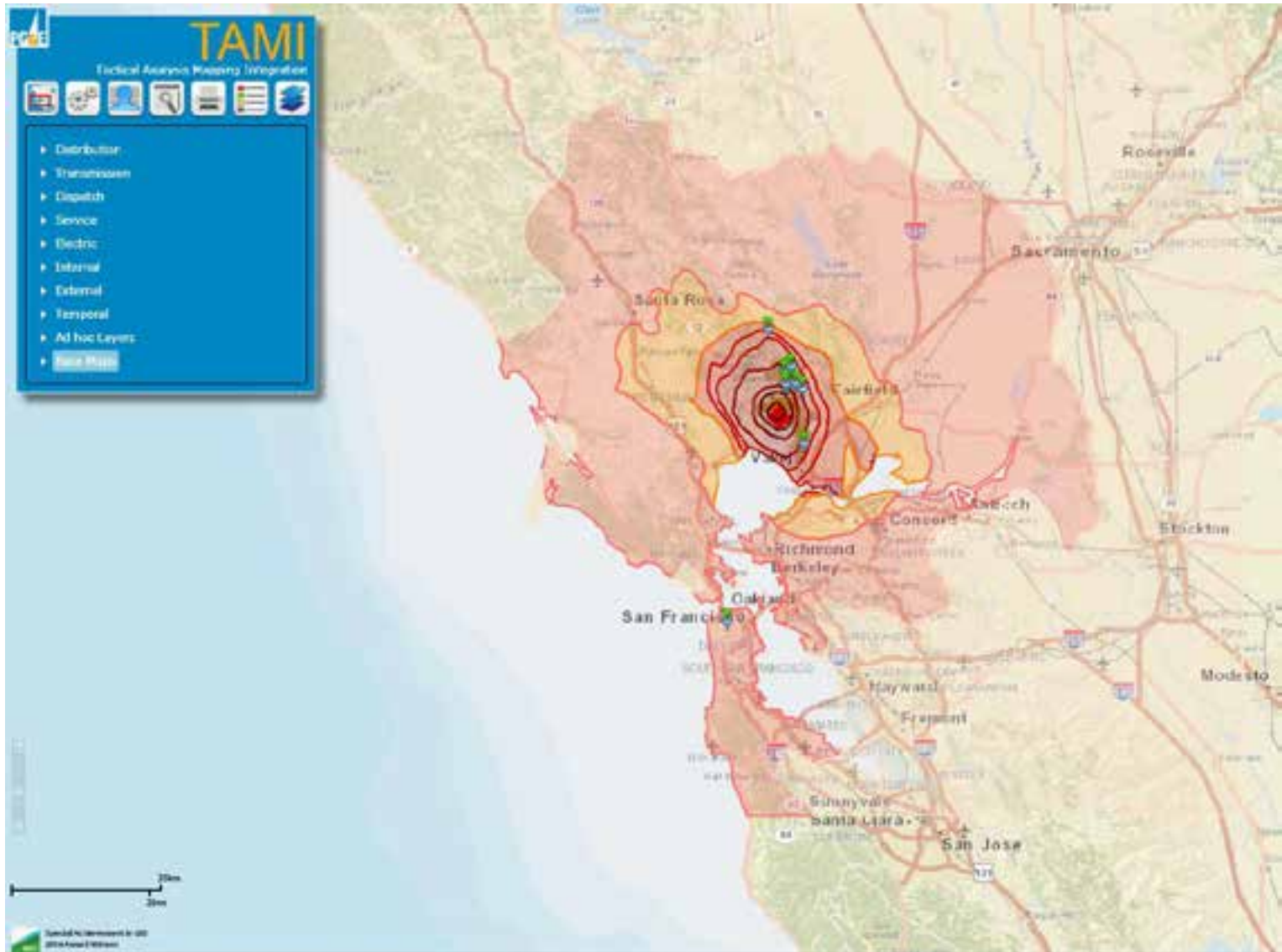
- 6.0 Magnitude earthquake
- 6km NW of American Canyon
- 0320 on August 24, 2014

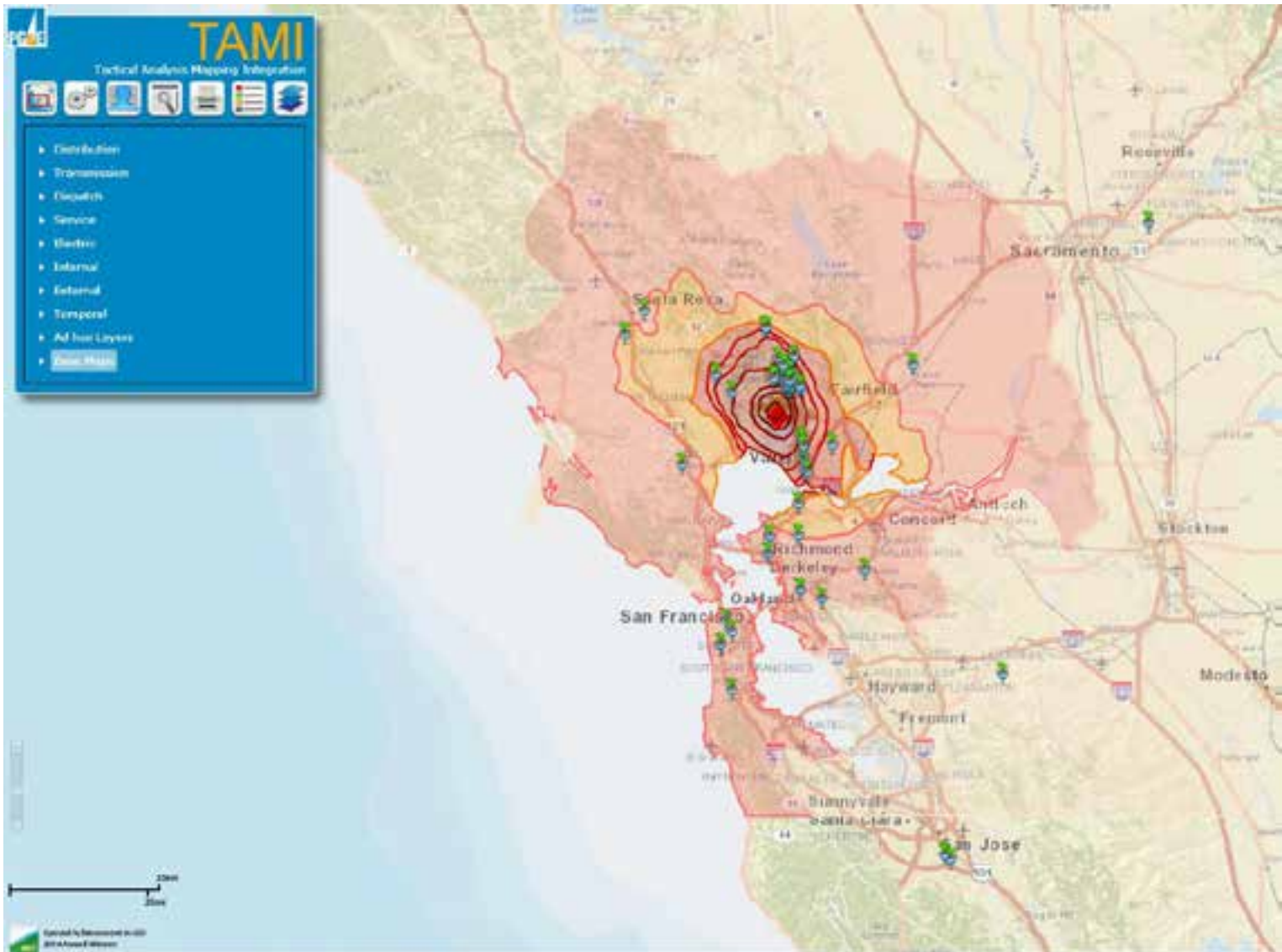


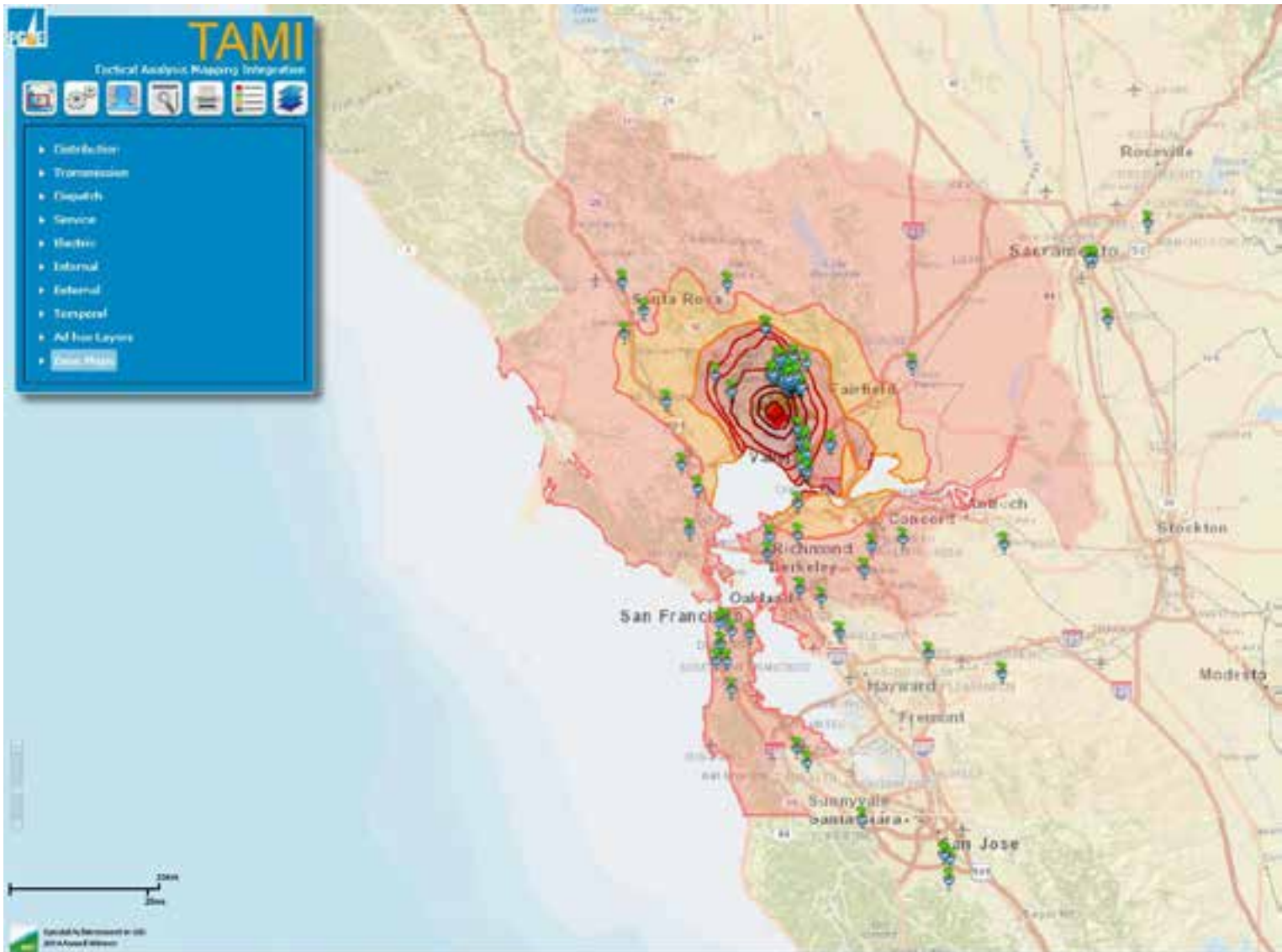


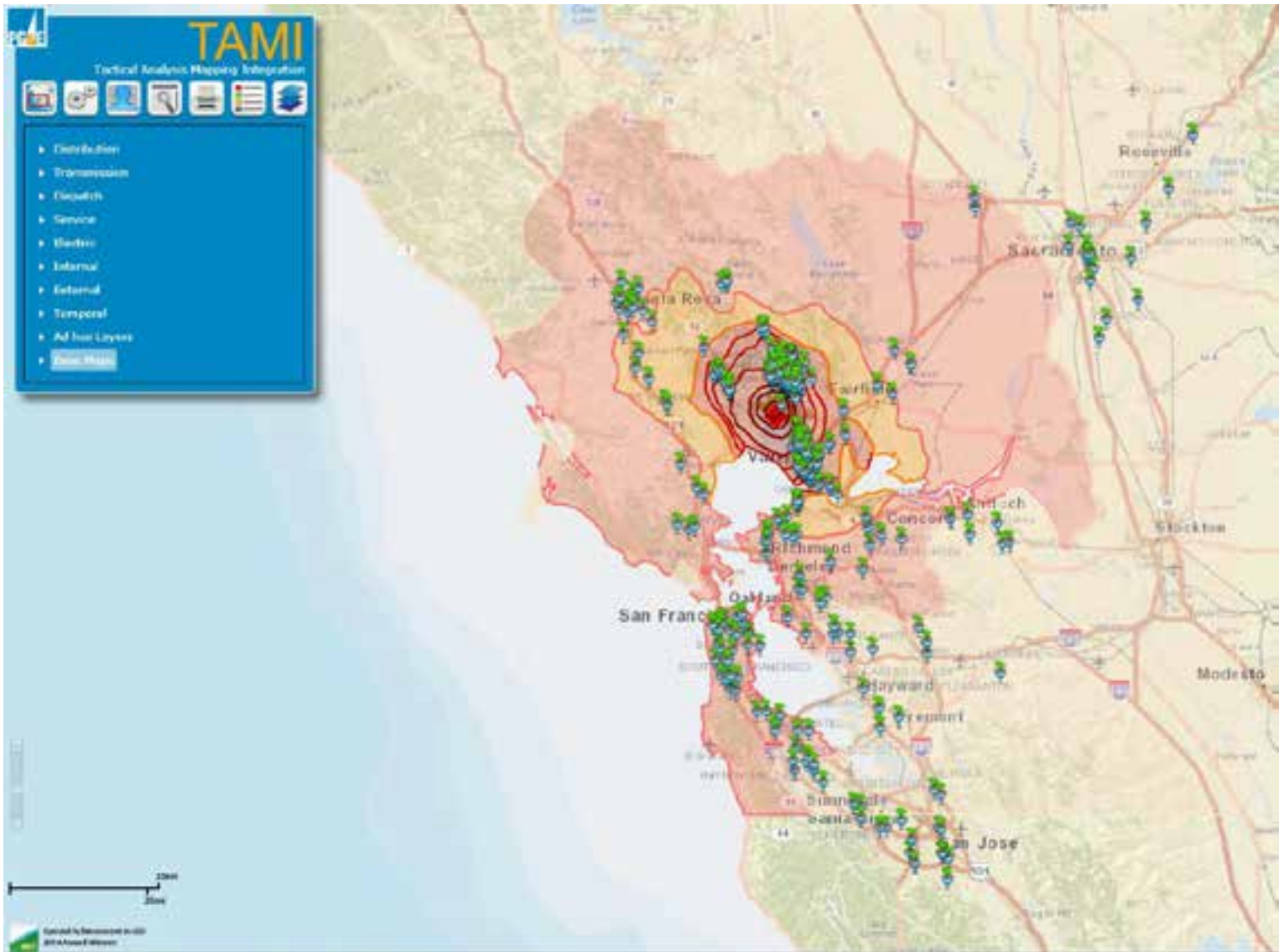




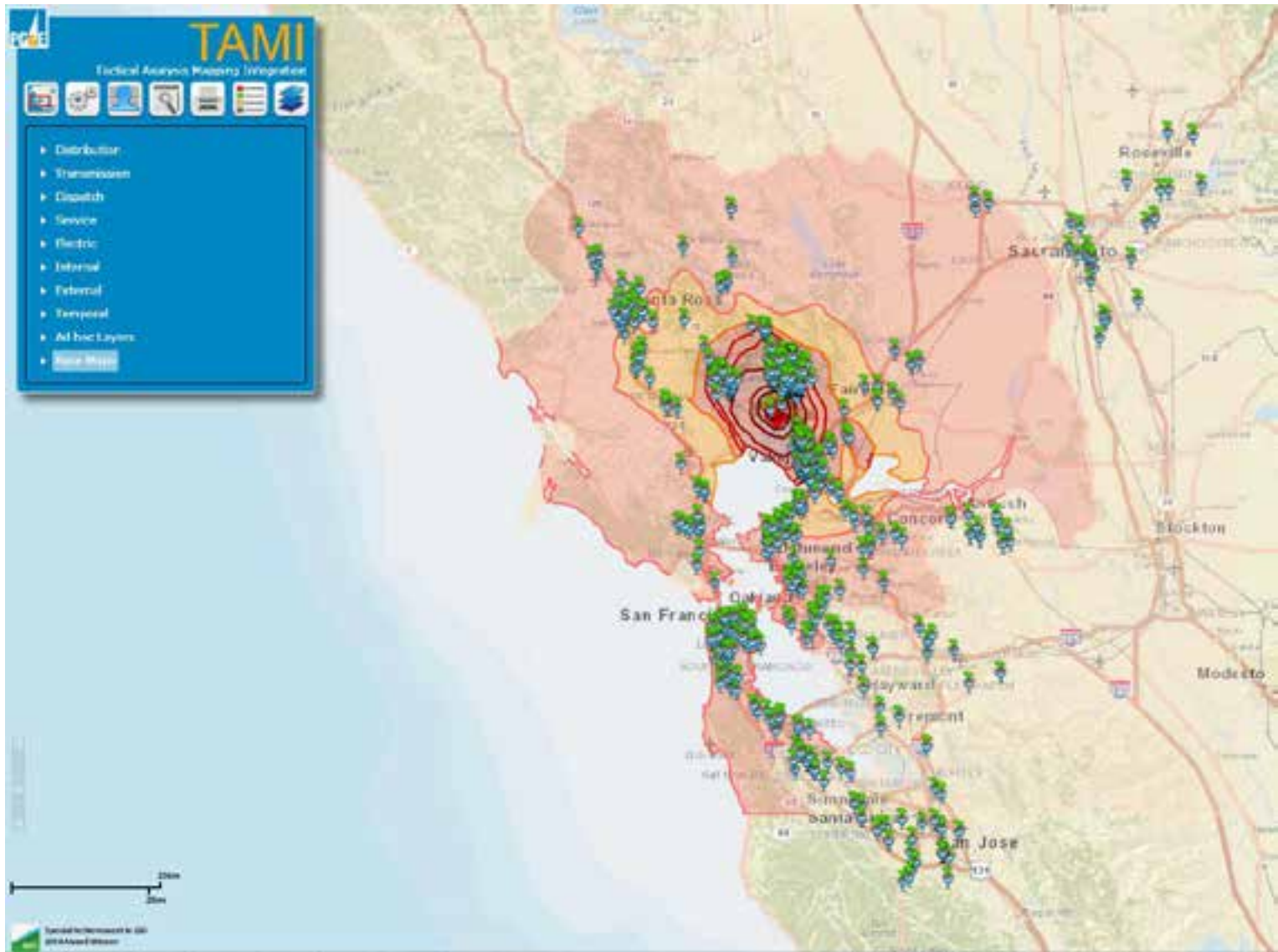


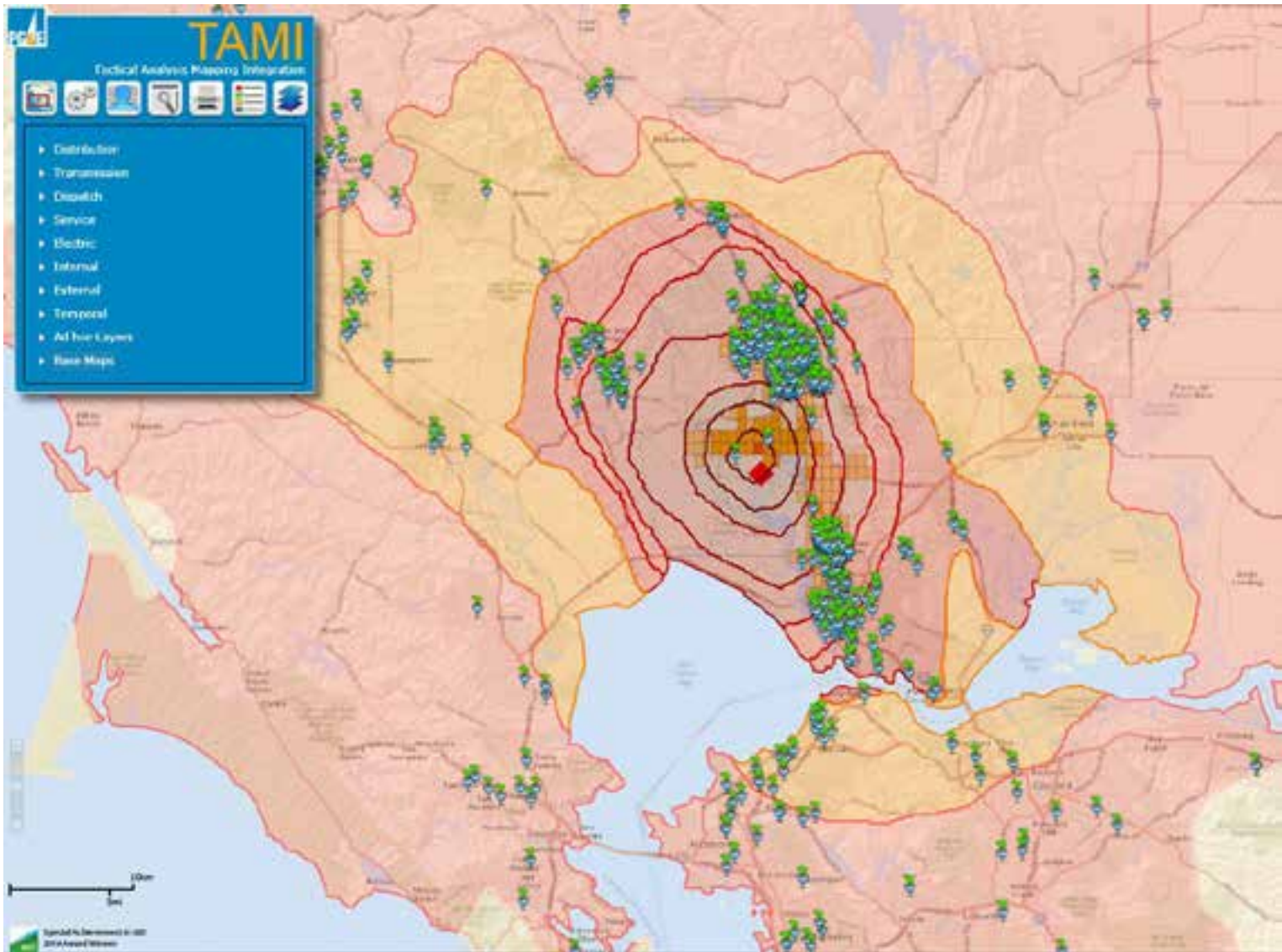


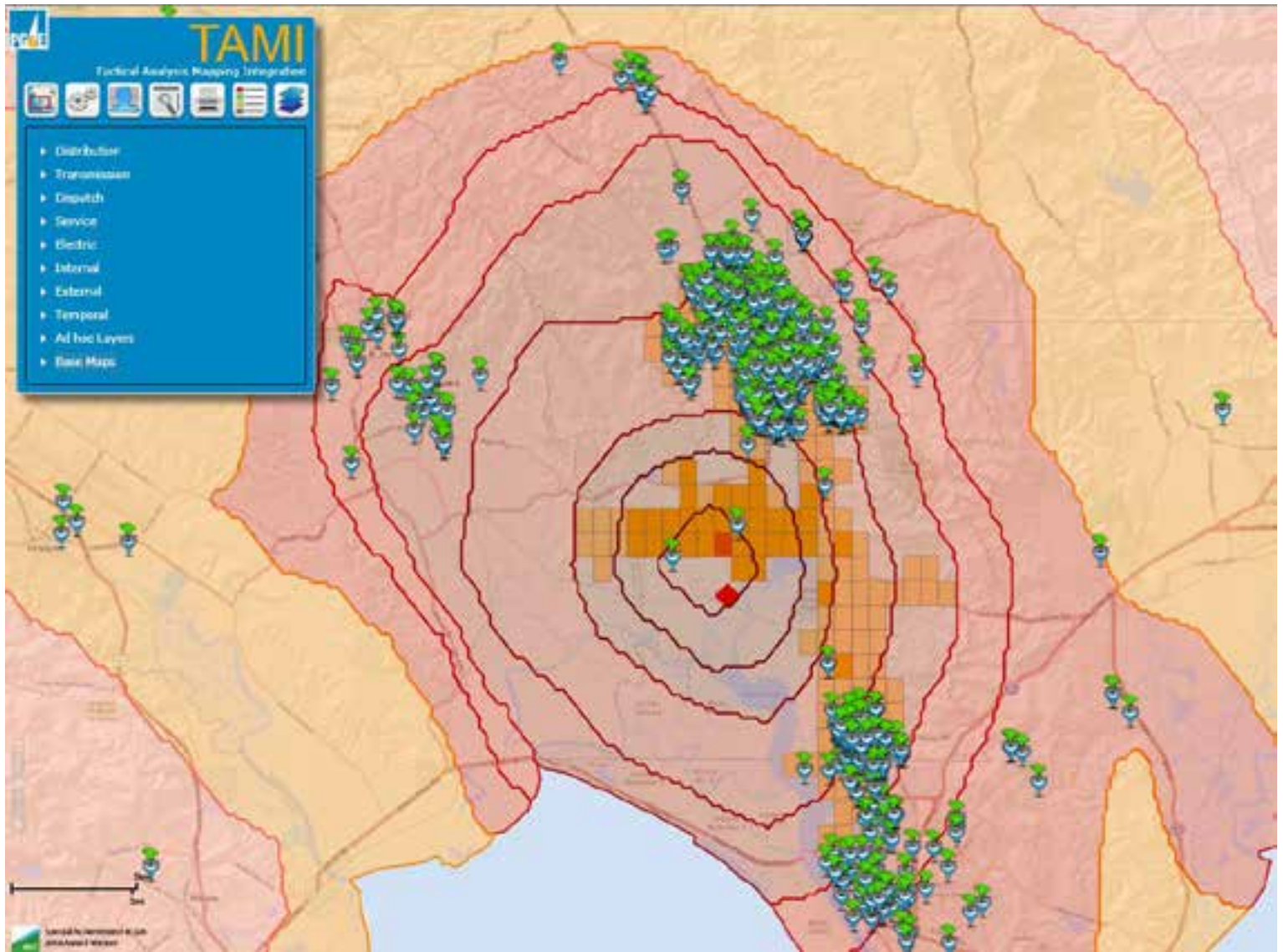












# Other Ways We Use **TAMI**



# Damage Prevention



# TAMI

Tactical Analysis Mapping Integration



Routes

- GasRoutes
- Transmission - Routes

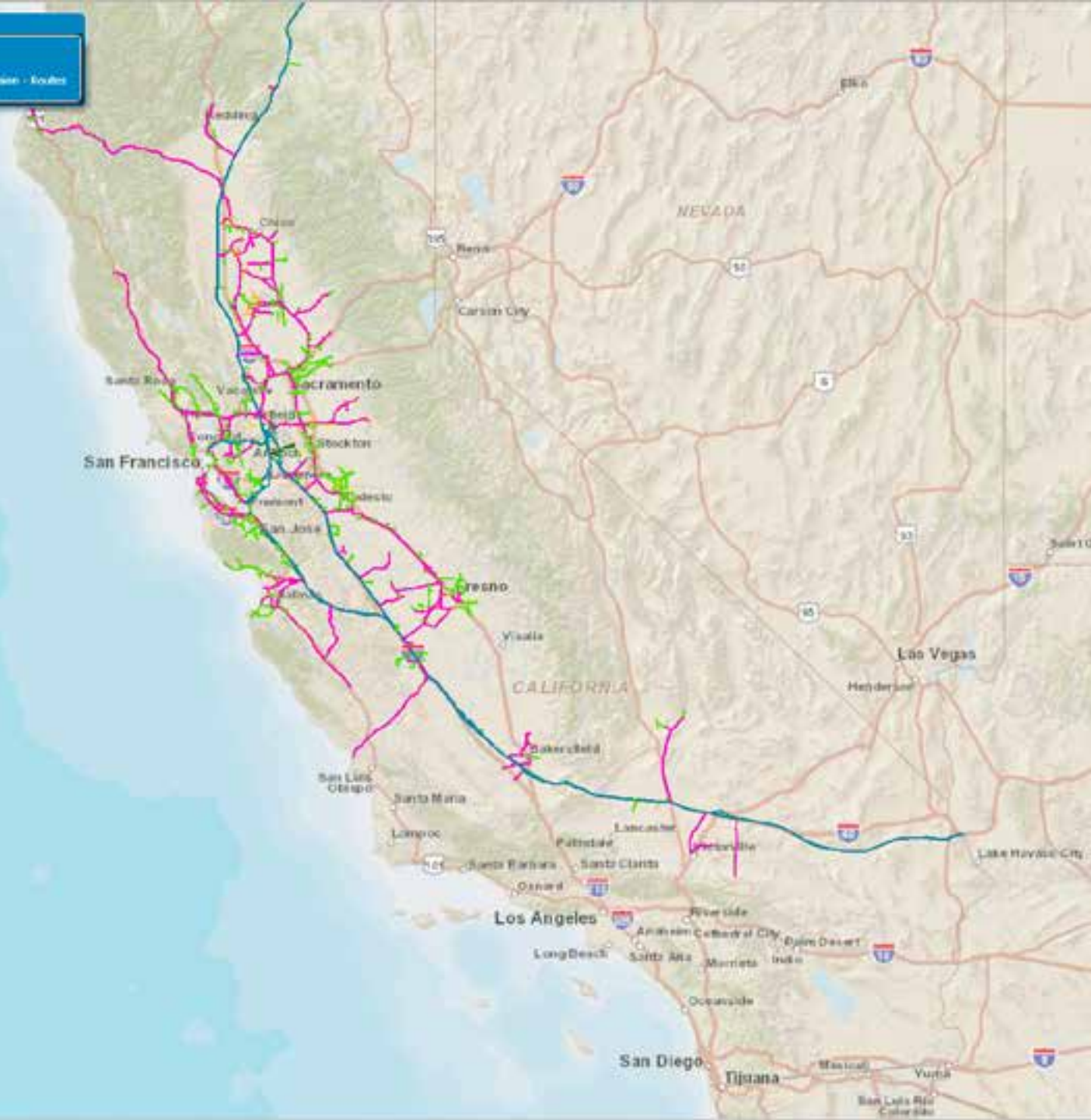
Distribution

Transmission

- Equal Pressure Drop
- Relief Valve
- Routes
- FTU - T
- Stations
- Slack Valve

Display

- Service
- Internal
- External
- Temporal
- Ad hoc Layers
- Base Map



0 100 200 Miles

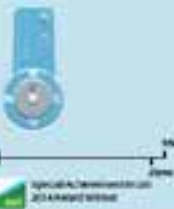
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# TAMI

Tactical Analysis Mapping Integration



- Distribution
  - Transmission
    - Equal Pressure Drop
    - Relief Valve
    - Routes
    - ETU - T
    - Stations
    - Stack Valve
- Display
- Service
- External
- Temporal
- Ad hoc Layers
- Base Map





- Distribution
- Transportation
- Dispatch
- Service
- Internal
- Boundaries
- Clearance
- MapUp
- Operations

Inhibit - Dig Tickets

- Offenders
- Transportation
- Weather
- External
- Temporary
- Ad hoc Layers
- Base Map

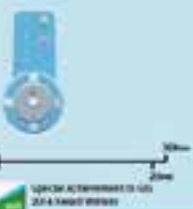
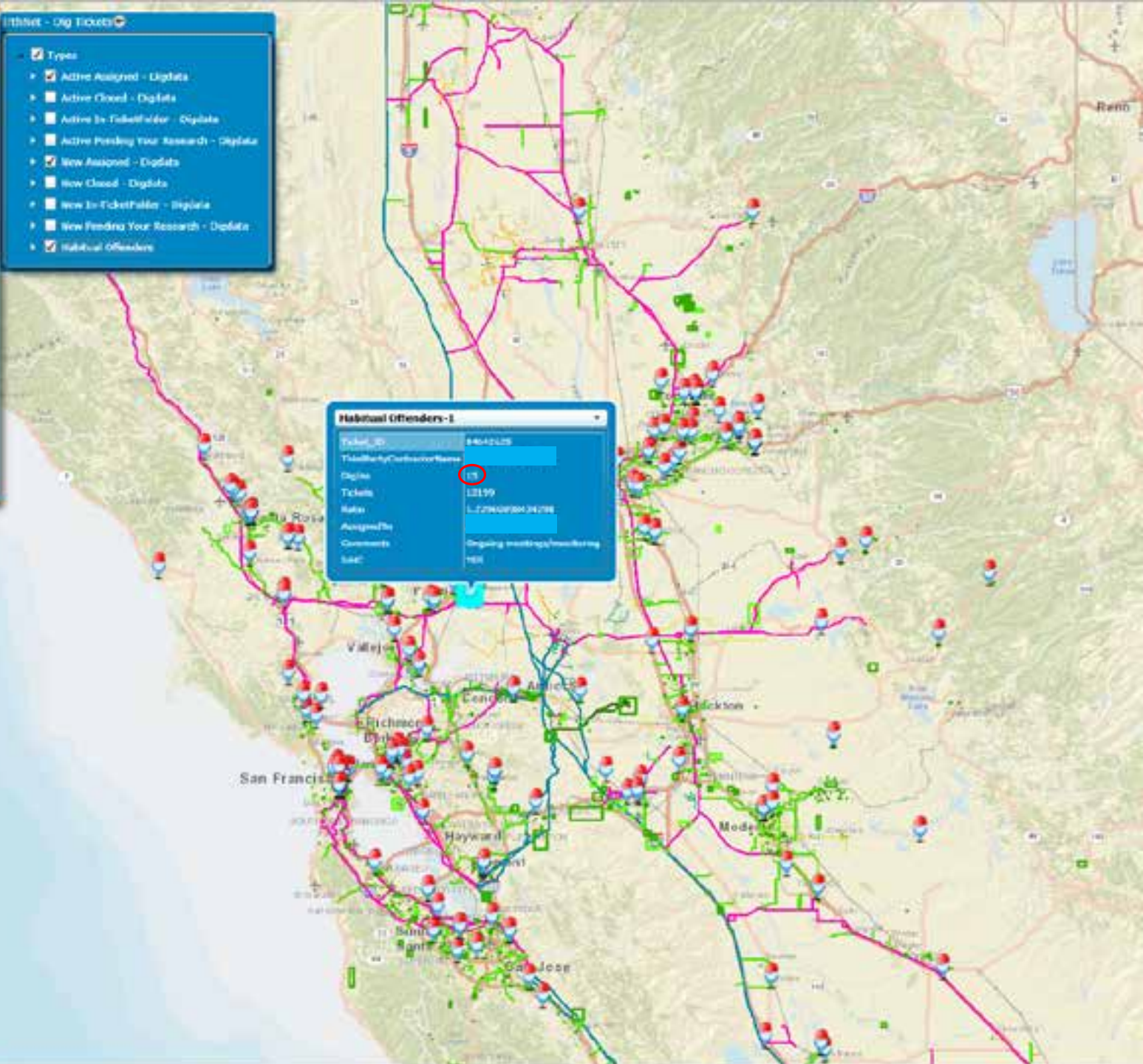
Inhibit - Dig Tickets

### Types

- Active Assigned - DigData
- Active Closed - DigData
- Active In Ticketable - DigData
- Active Pending Your Research - DigData
- New Assigned - DigData
- New Closed - DigData
- New In Ticketable - DigData
- New Pending Your Research - DigData
- Habitual Offenders

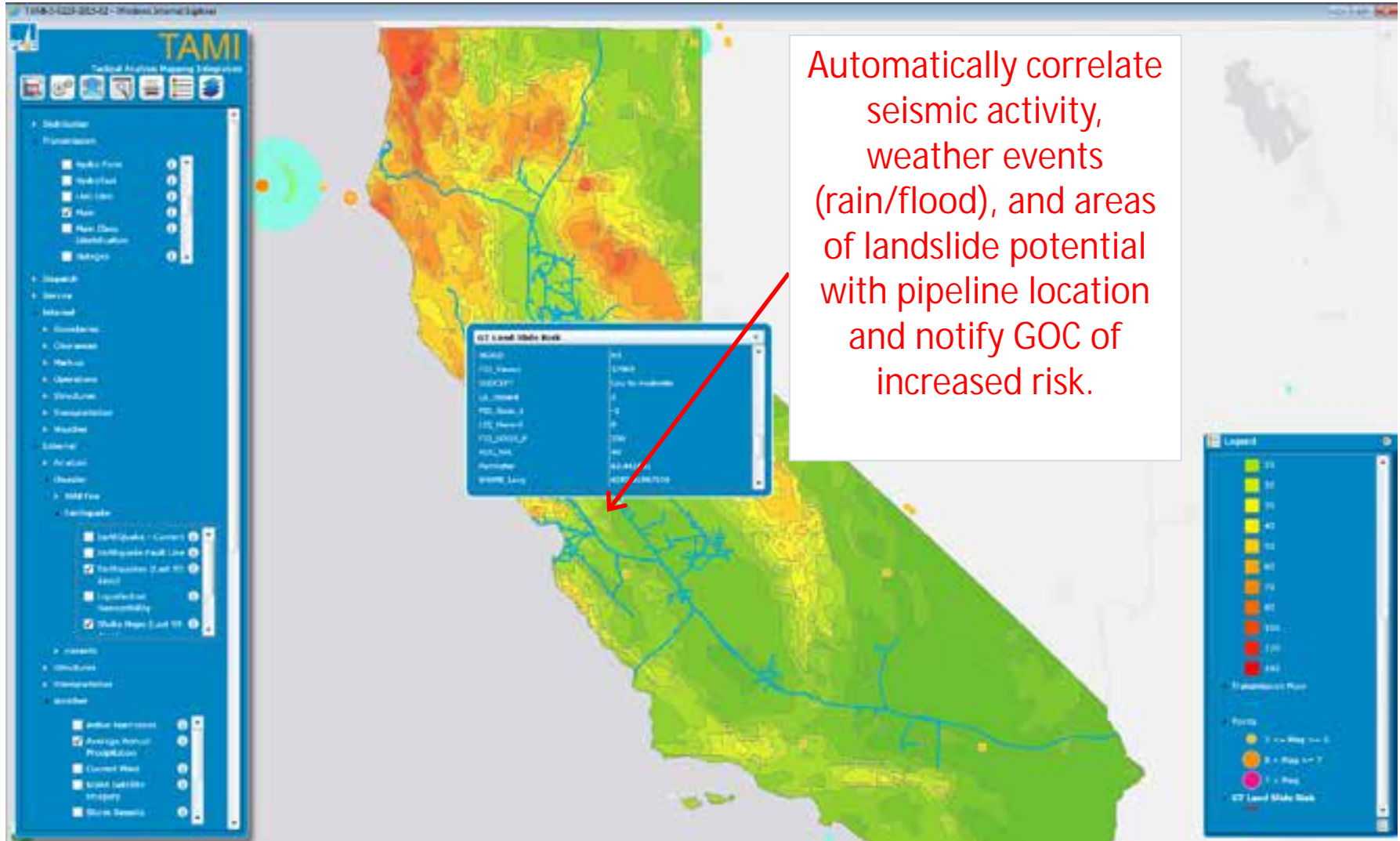
**Habitual Offenders-1**

Ticket ID	8462105
Ticket/Offender Name	[REDACTED]
Digits	13
Tickets	13199
Date	1/27/2010 04:24:28
Assignment	
Comments	Ongoing monitoring/monitoring
LOC	NER



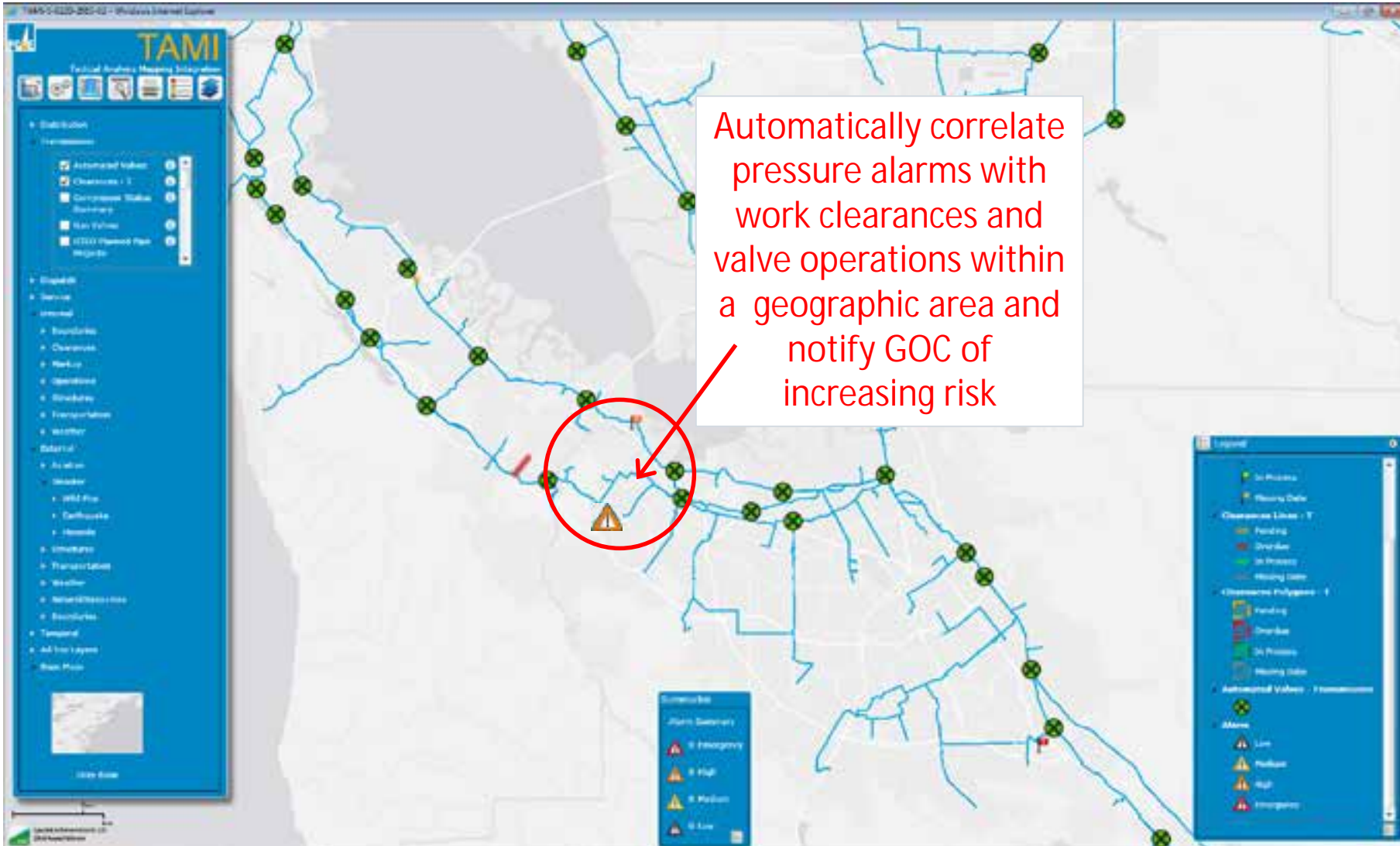


# Risk: Weather & Outside Forces, Land Movement



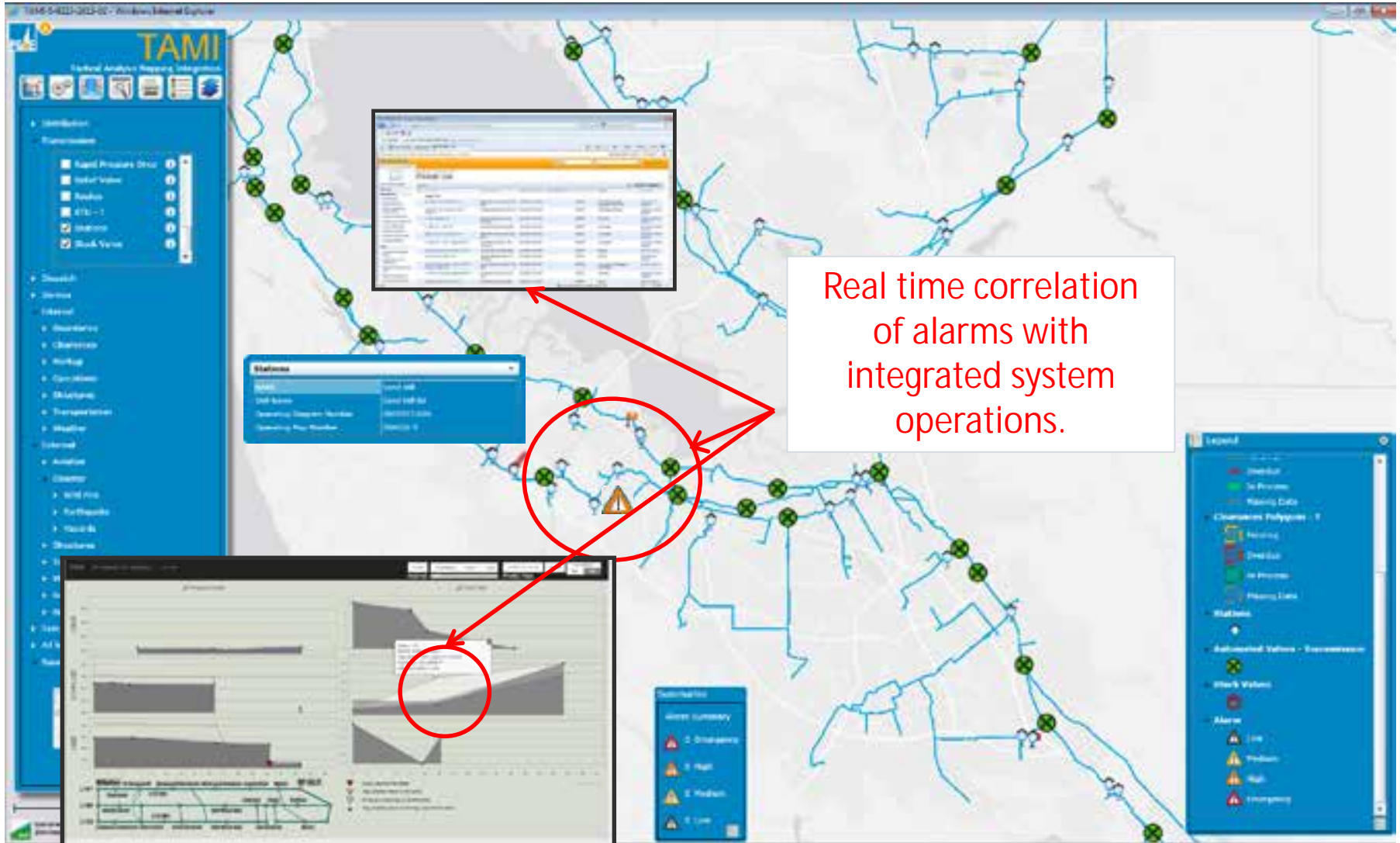
Automatically correlate seismic activity, weather events (rain/flood), and areas of landslide potential with pipeline location and notify GOC of increased risk.

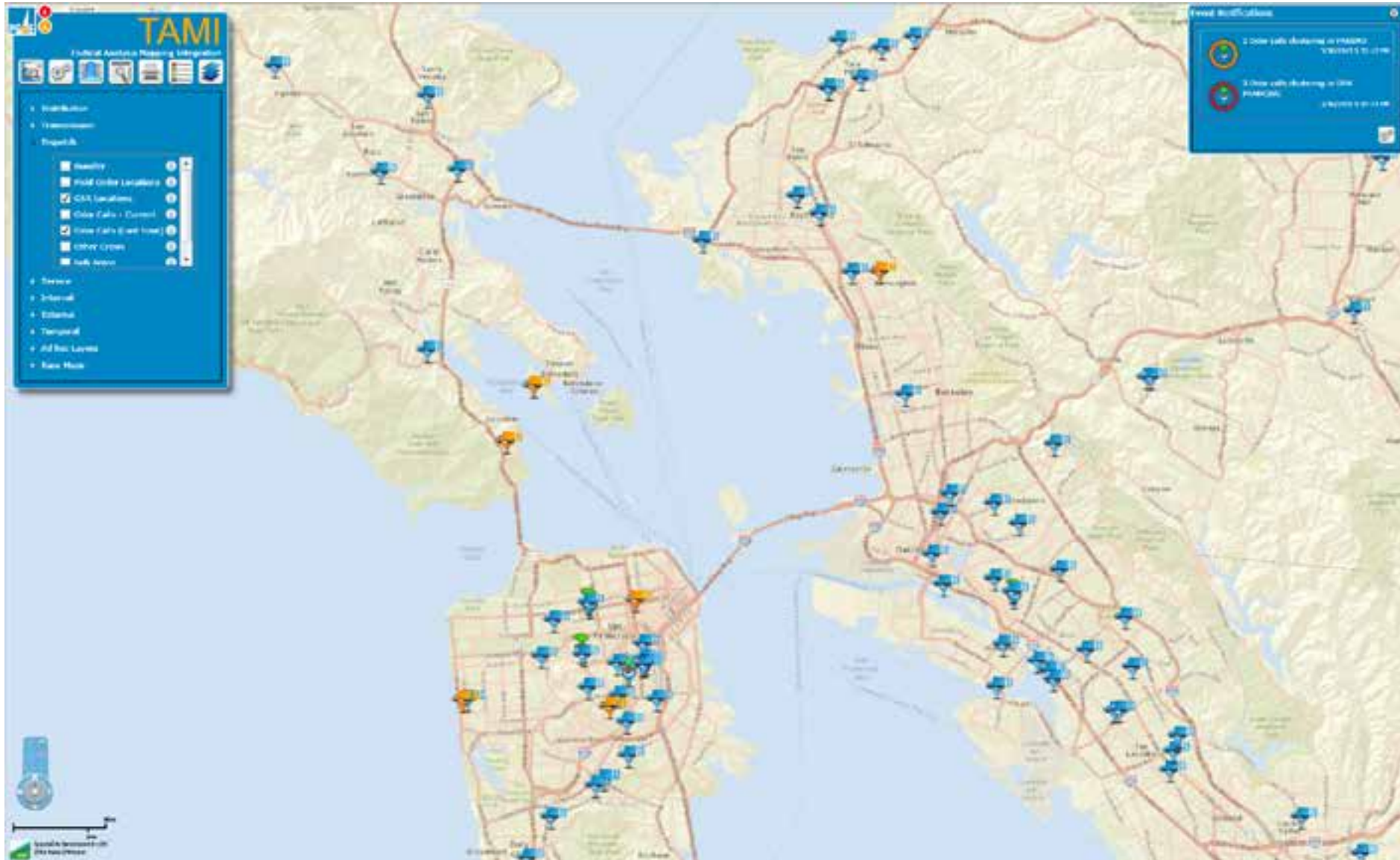
# Risk: Incorrect Operations



Automatically correlate pressure alarms with work clearances and valve operations within a geographic area and notify GOC of increasing risk

# Risk: Equipment Related





# Questions?

