

ESRI UC 2015

Making Tomorrow Possible Today



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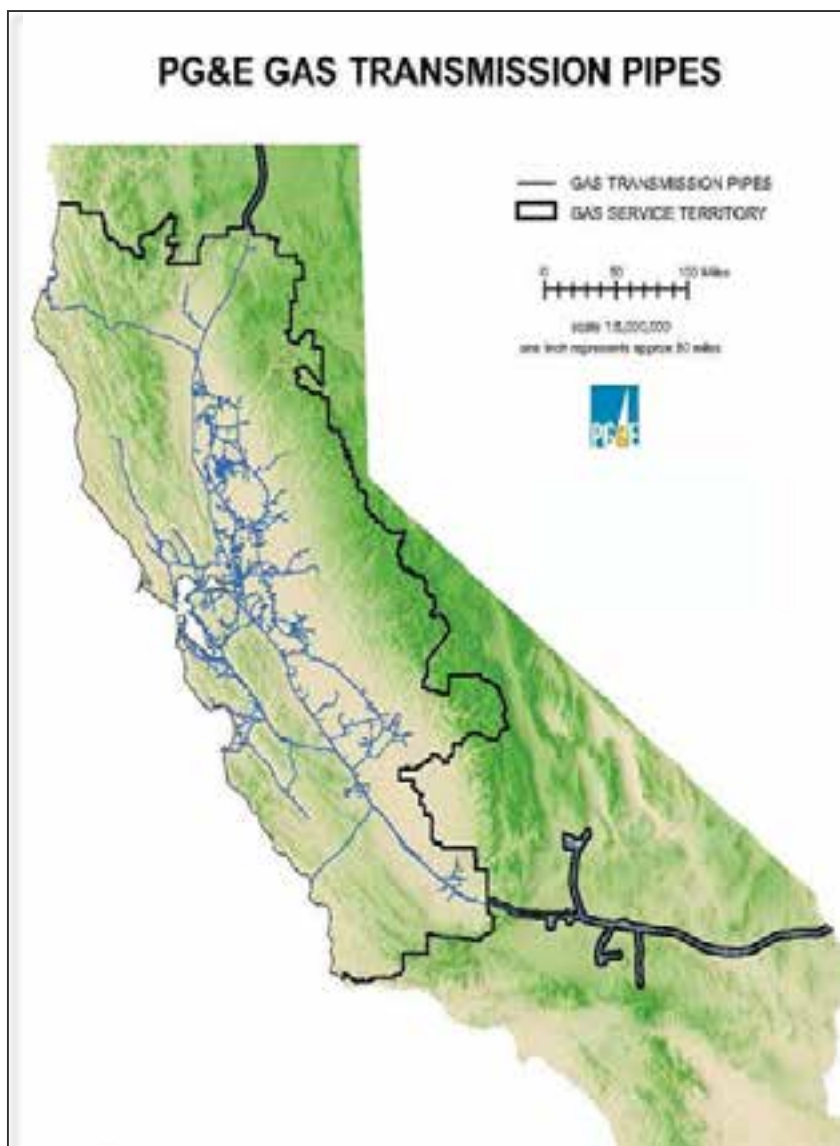
§ About PG&E

- § 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.

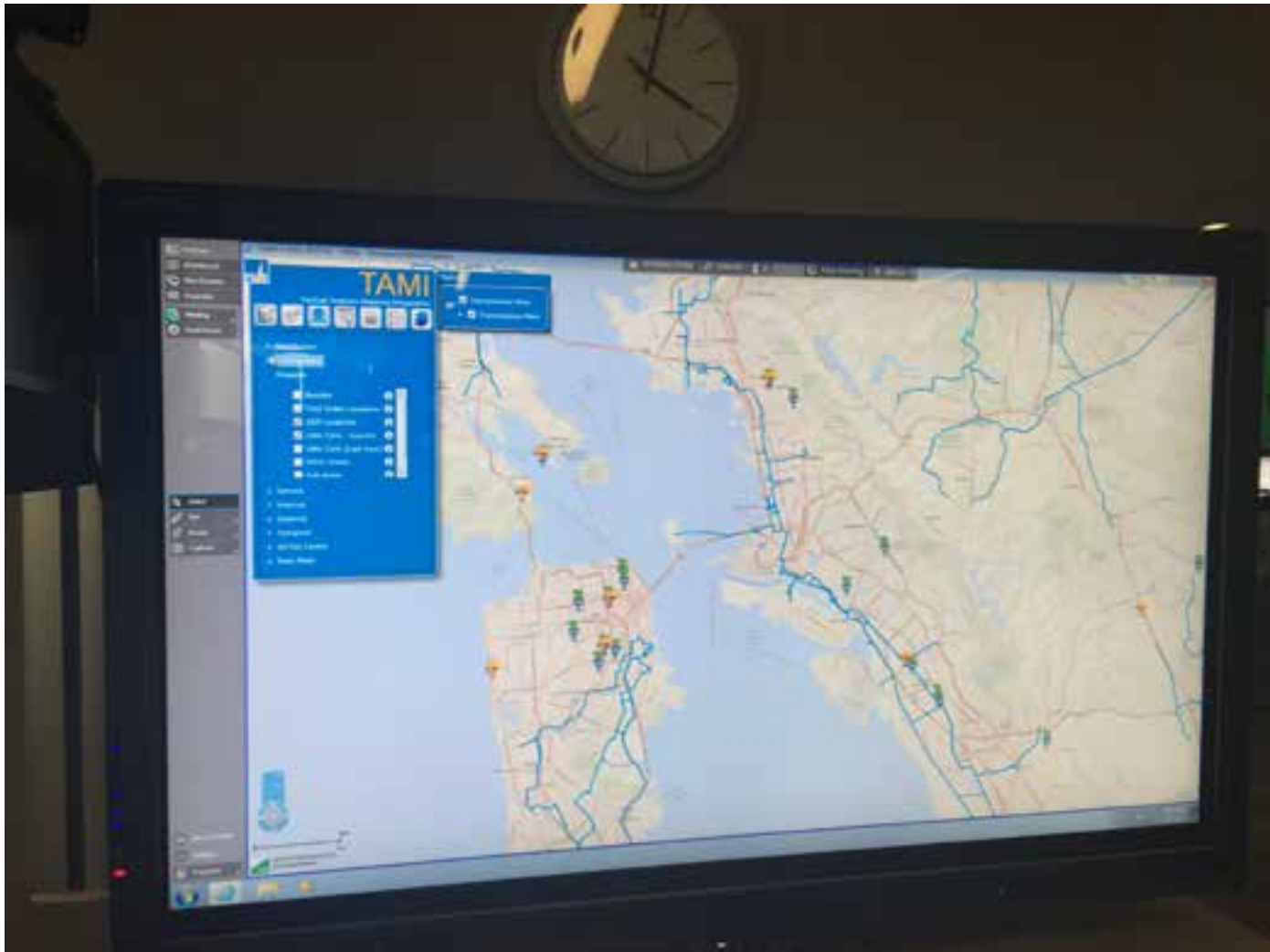
Leveraging Technology to Reduce and Mitigate Operational Risk



Transmission, Distribution, and Dispatch are colocated



TAMI - Tactical Analysis Mapping Integration

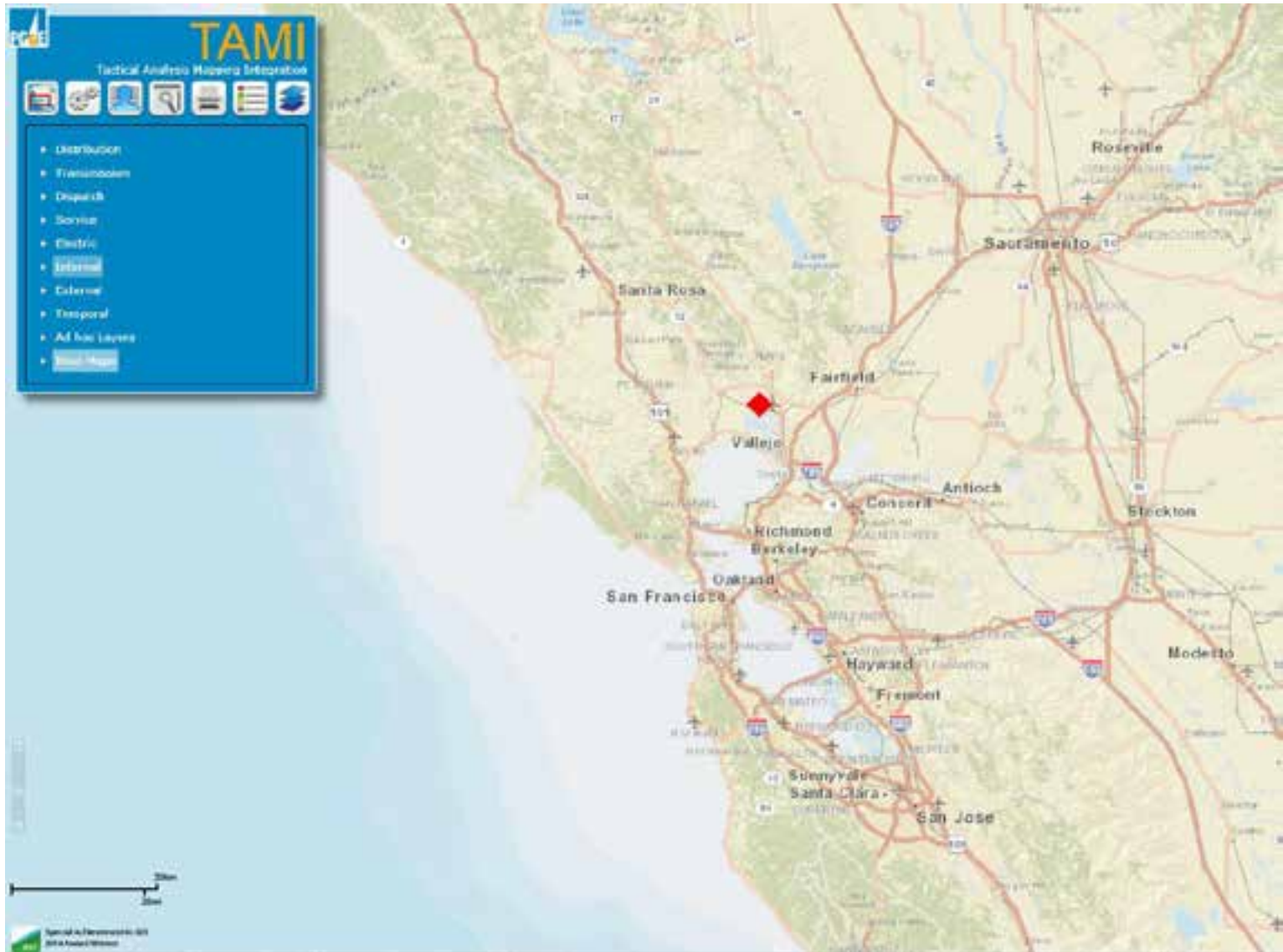


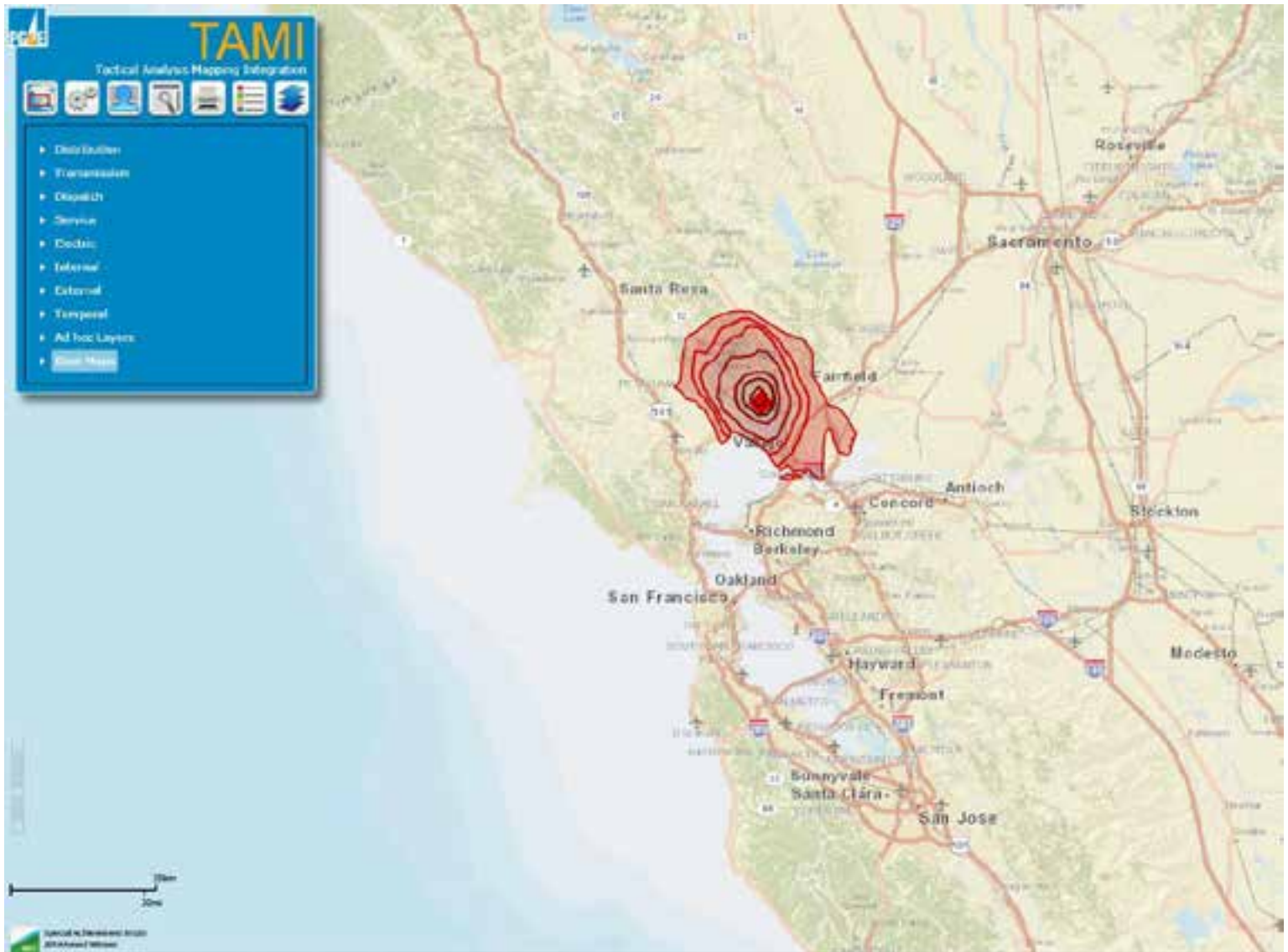
TAMI is a system that provides intelligent use of geospatial and temporal data for managing operational risk.

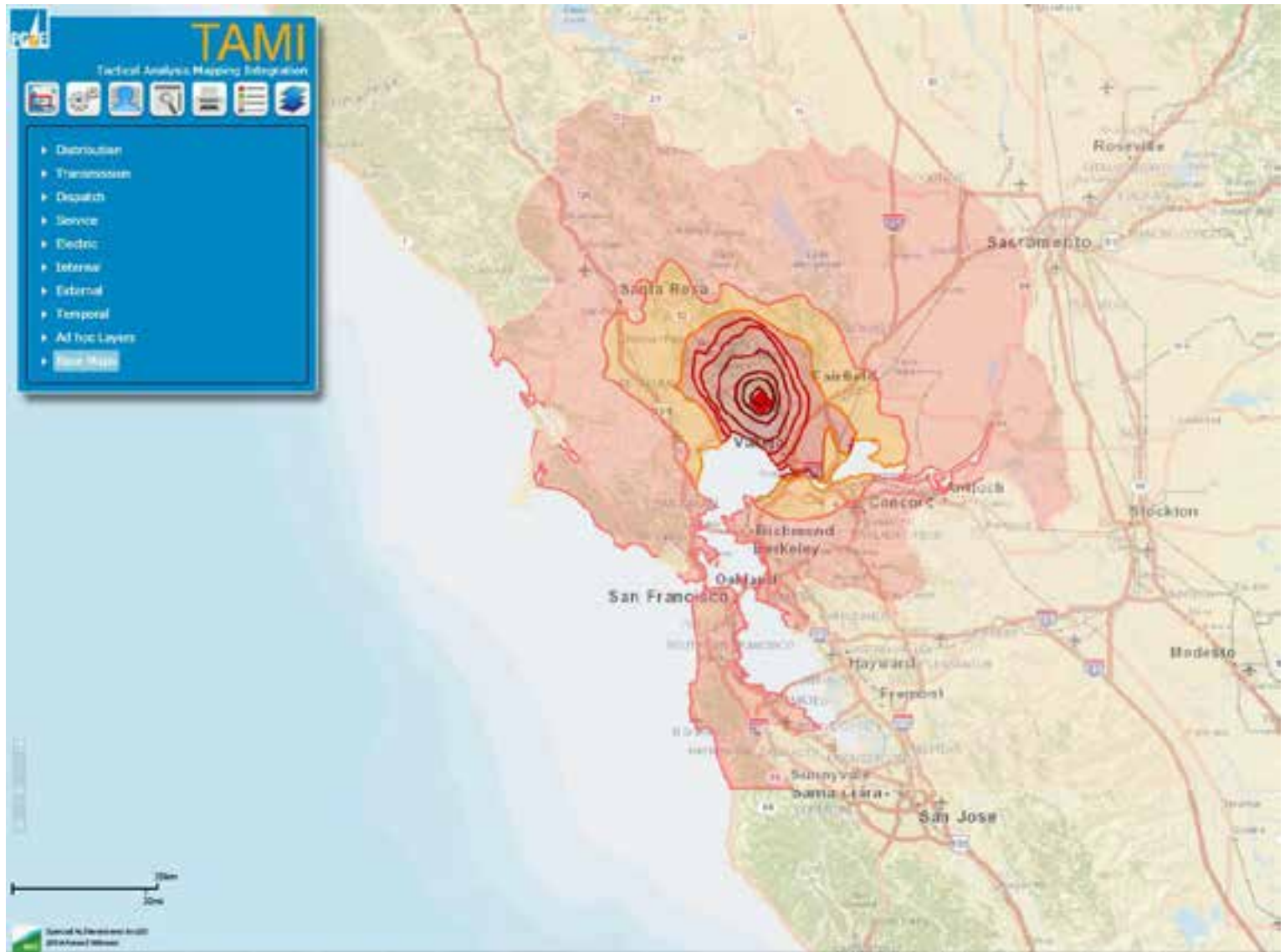
Napa Earthquake 2014

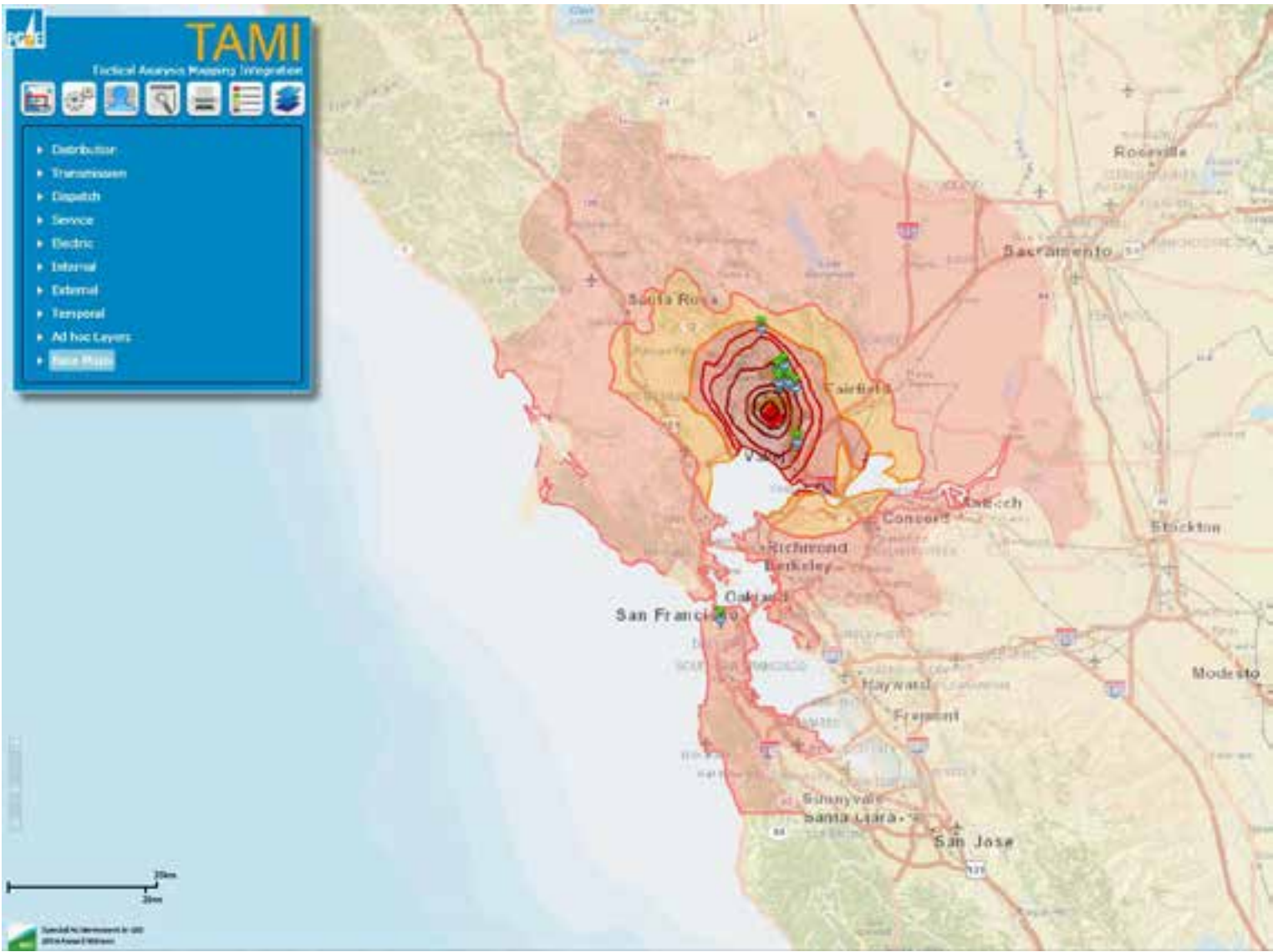
- 6.0 Magnitude earthquake
- 6km NW of American Canyon
- 0320 on August 24, 2014

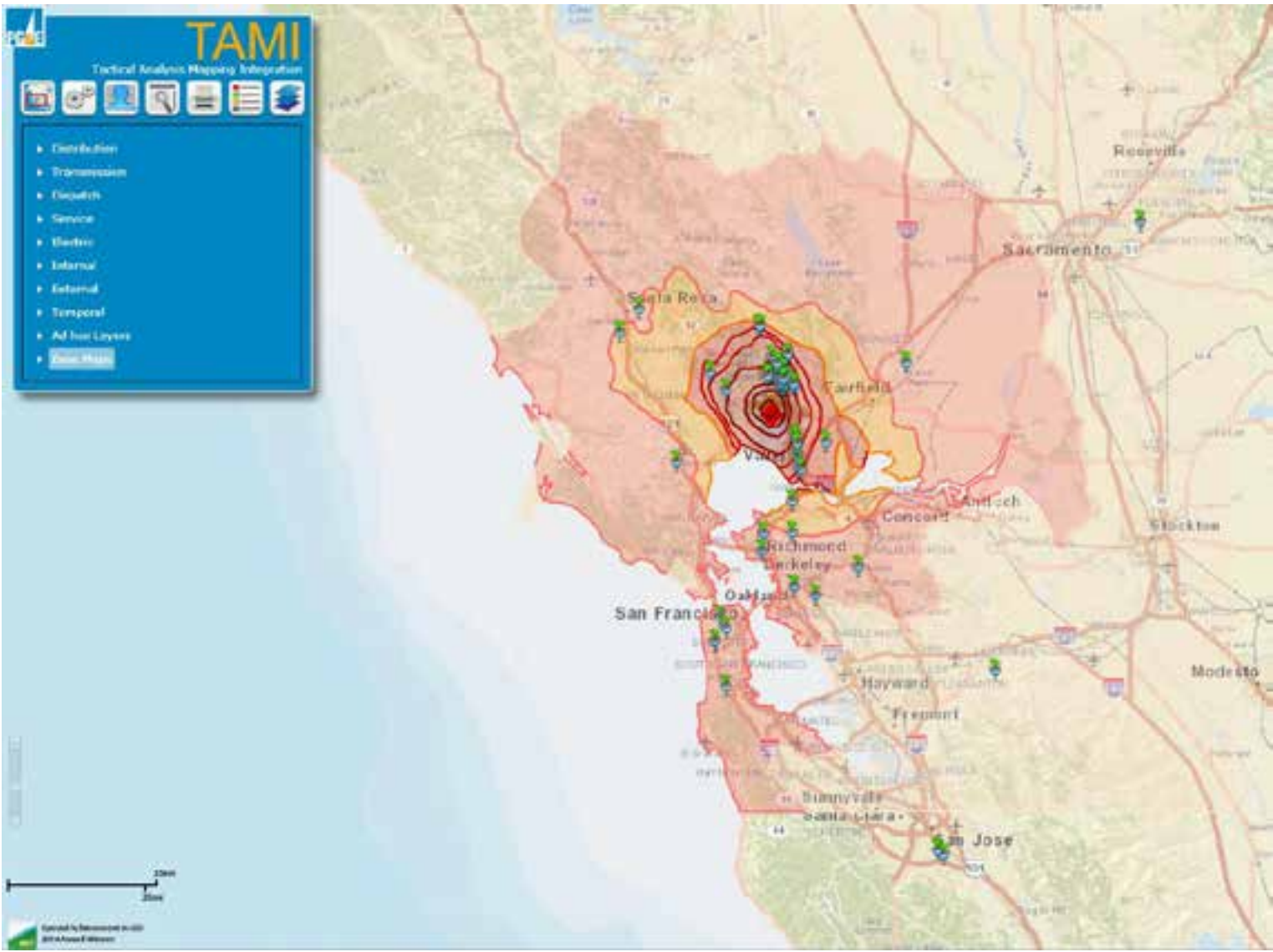


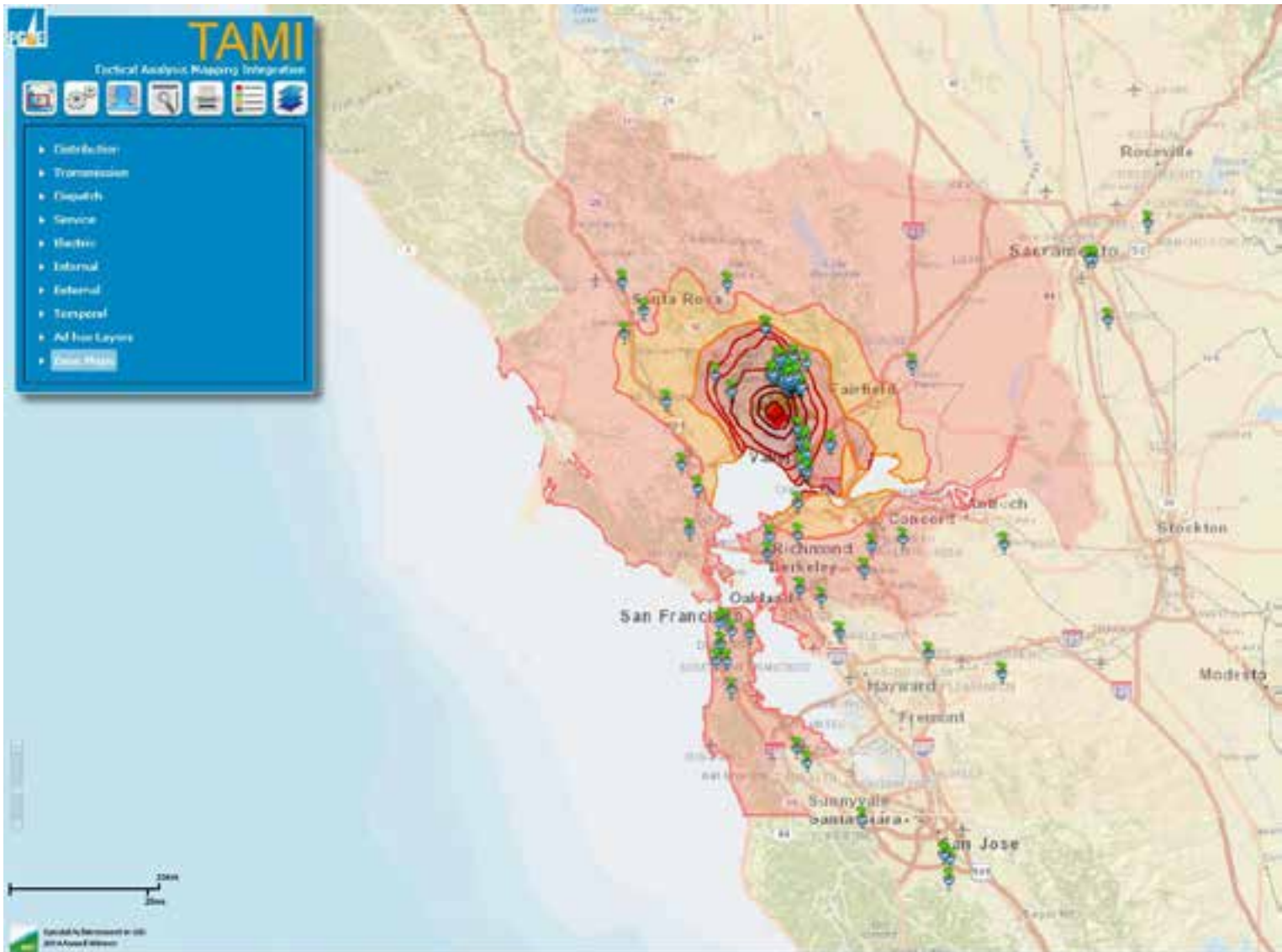


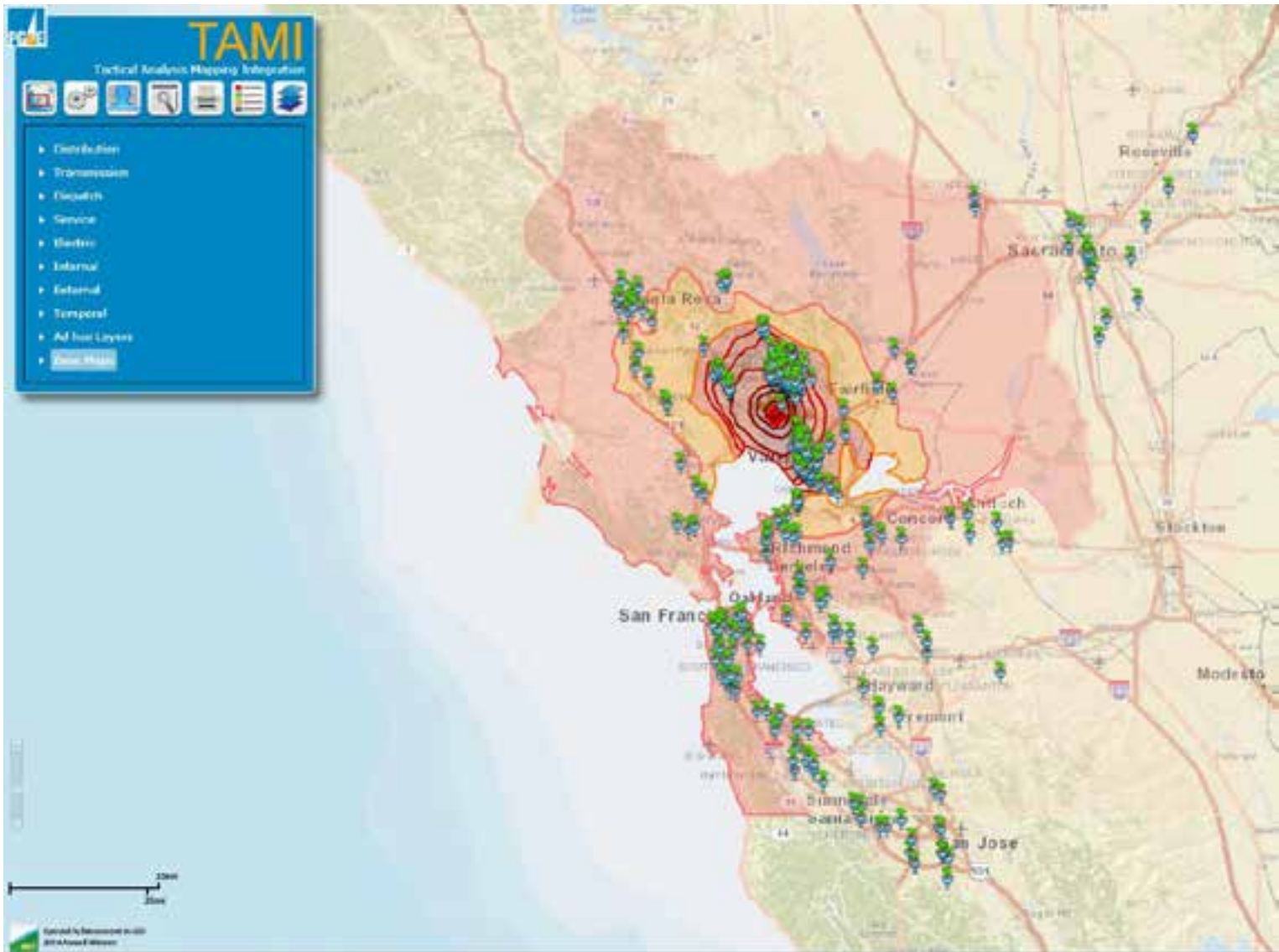


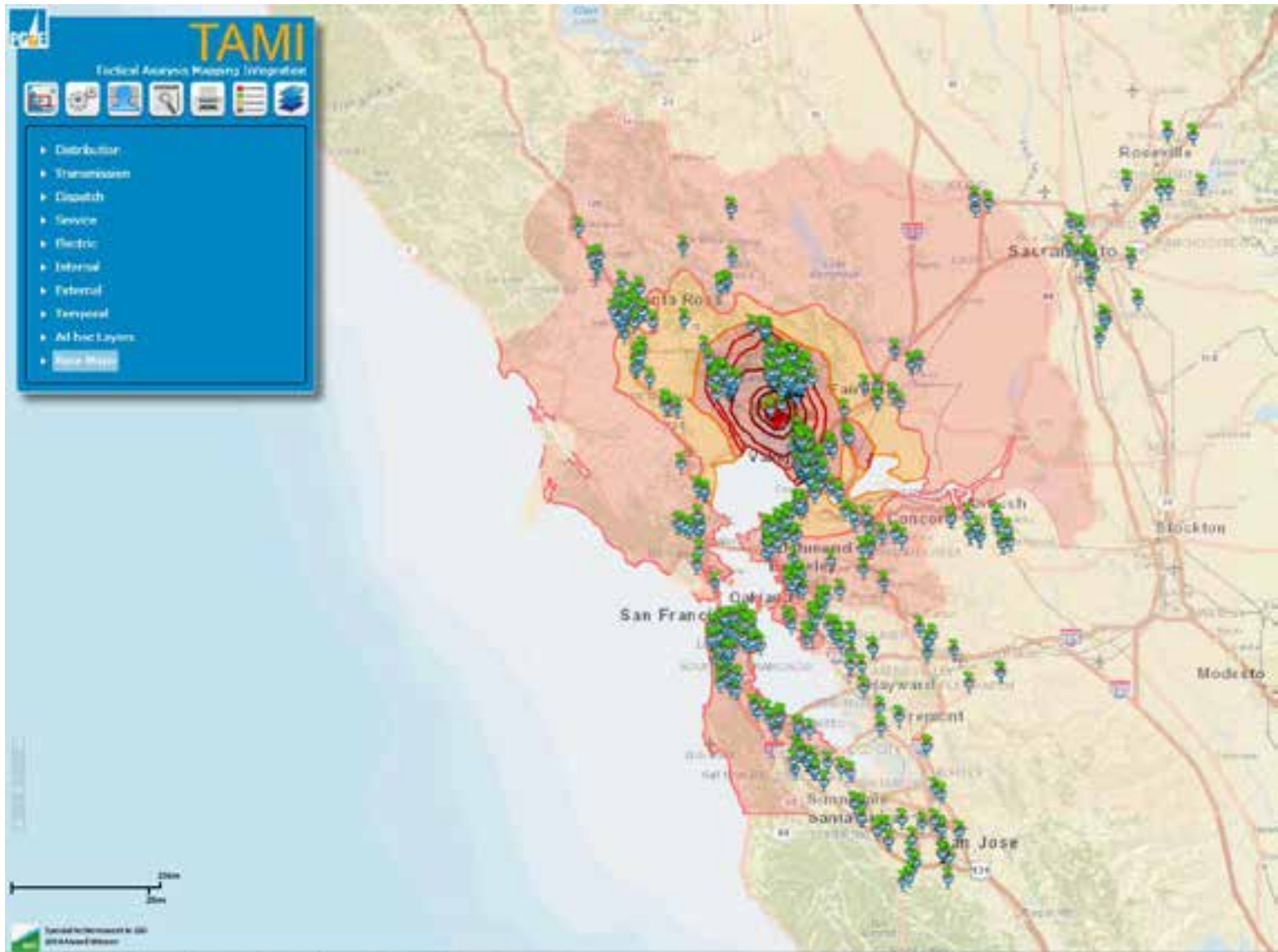


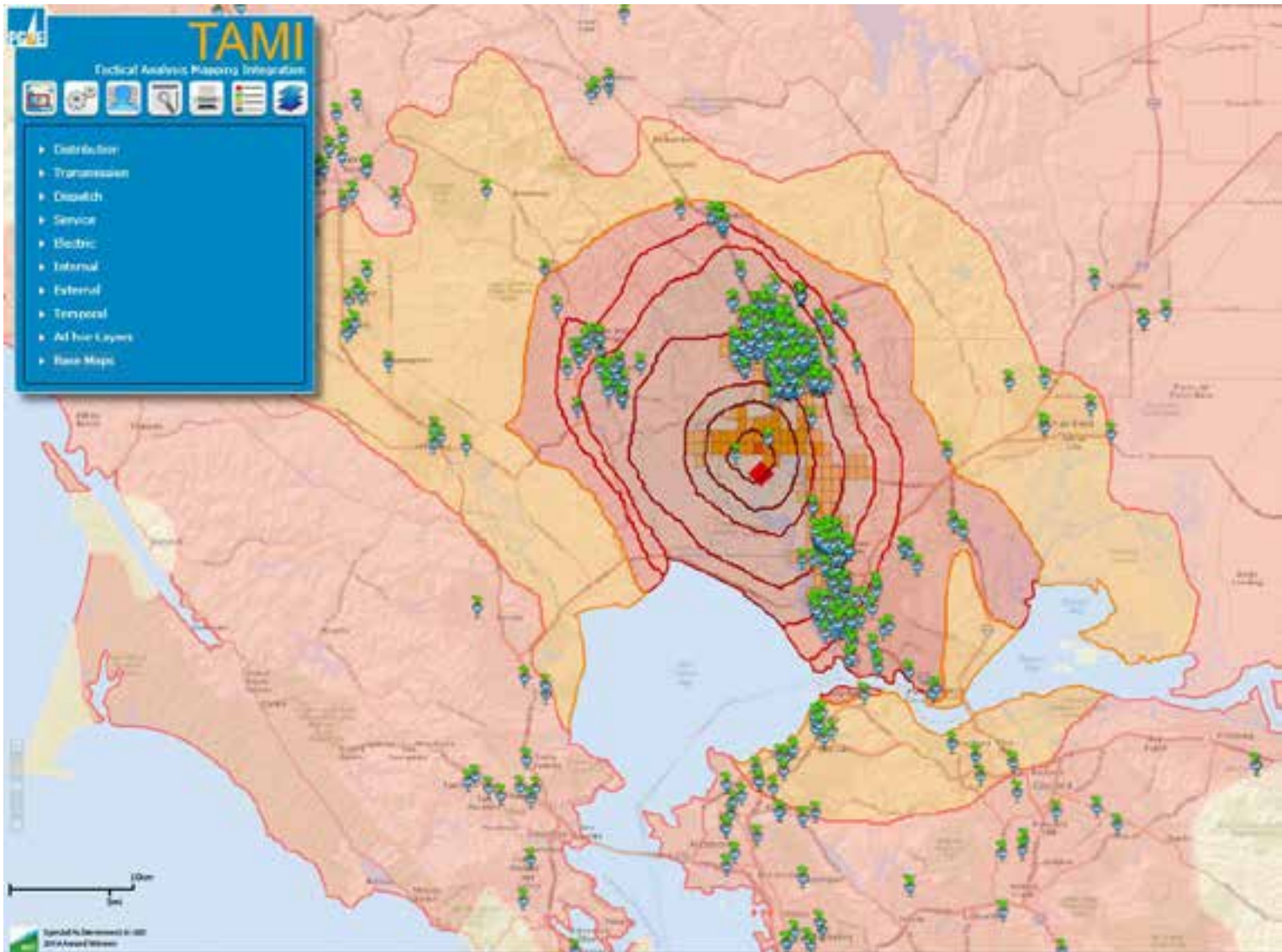


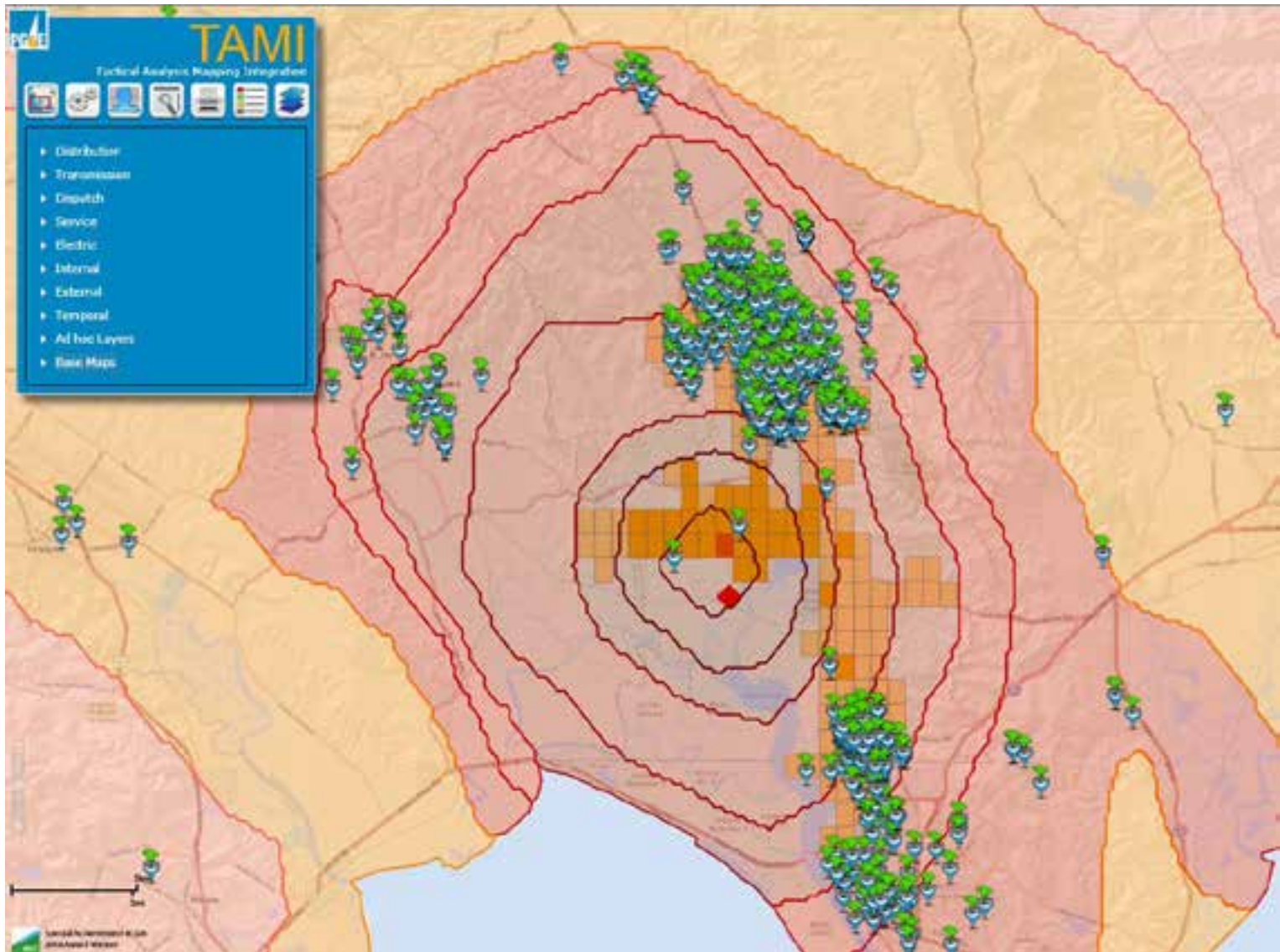












Other Ways We Use **TAMI**



Damage Prevention



TAMI

Tactical Analysis Mapping Integration



Routes

- GasRoutes
- Transmission - Routes

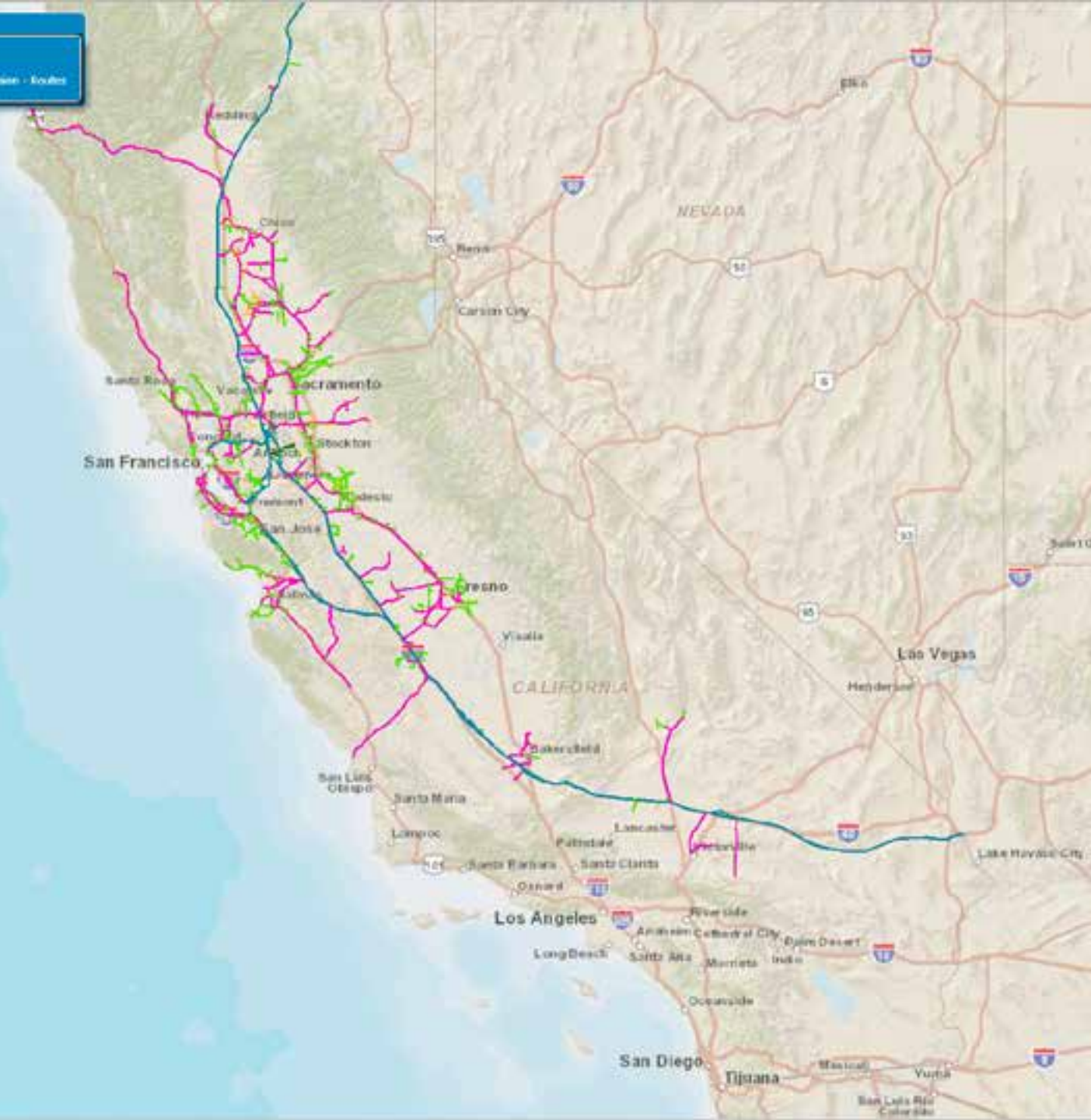
Distribution

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

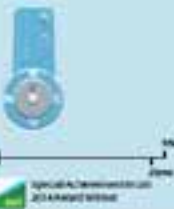
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TAMI

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



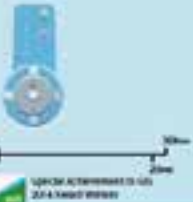
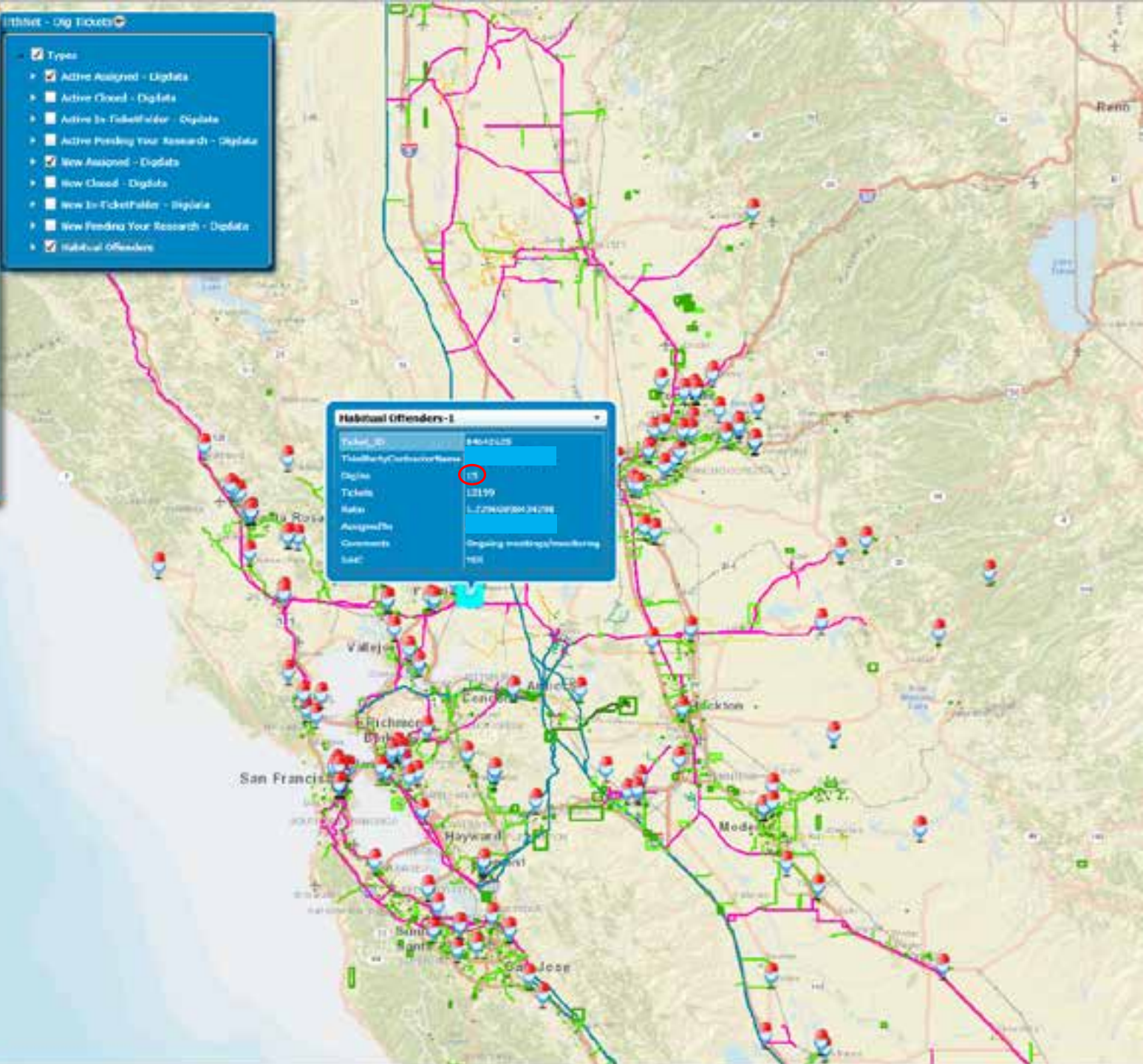


- Distribution
- Transportation
- Dispatch
- Service
- Internal
 - Boundaries
 - Clearance
 - MapUp
 - Operations
 - Inhibit - Dig Tickets
- External
 - Structure
 - Transportation
 - Weather
- Temporal
- Ad hoc Layers
- Base Map

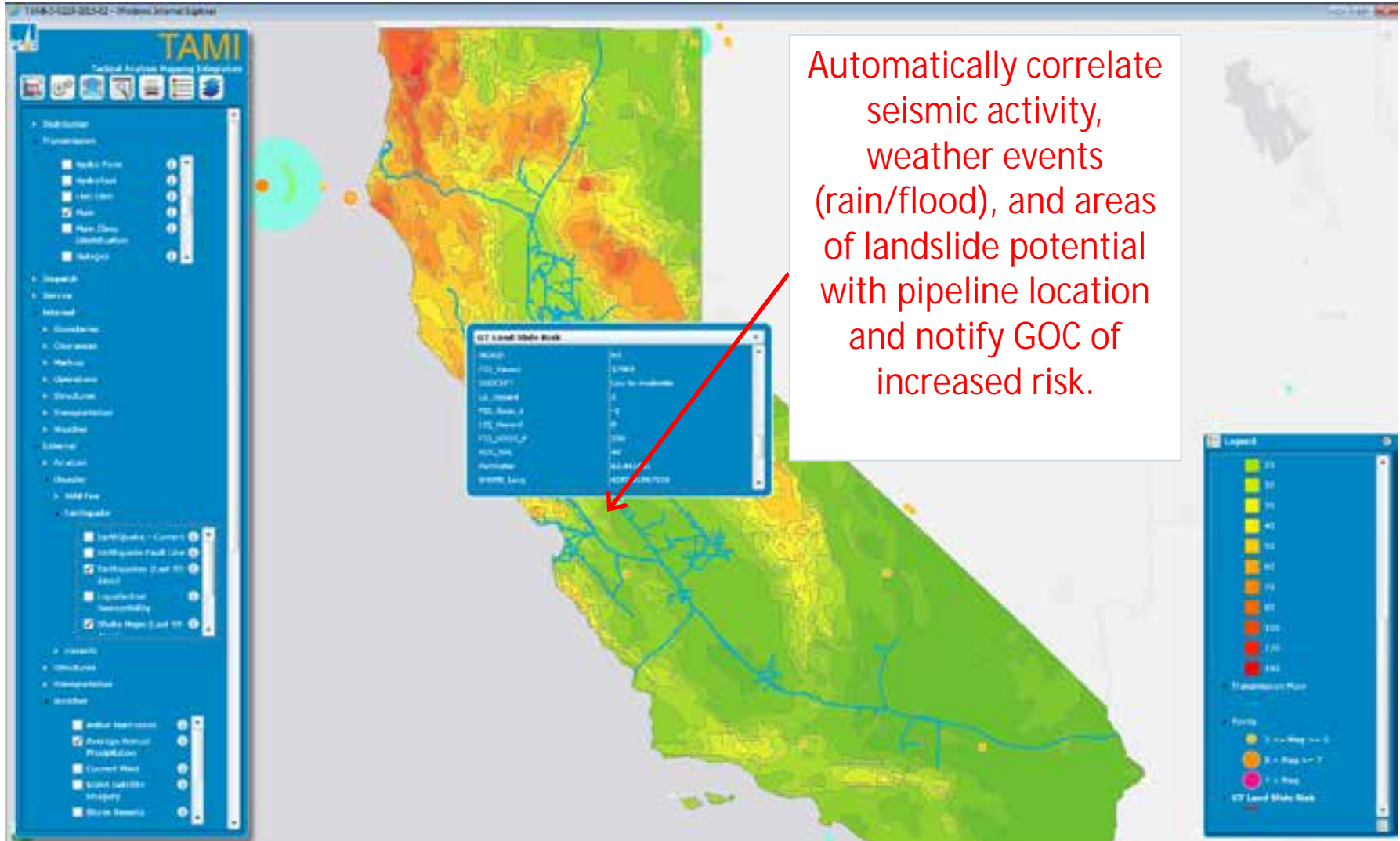
- ### Inhibit - Dig Tickets
- Types
 - Active Assigned - DigData
 - Active Closed - DigData
 - Active In Ticketable - DigData
 - Active Pending Your Research - DigData
 - New Assigned - DigData
 - New Closed - DigData
 - New In Ticketable - DigData
 - New Pending Your Research - DigData
 - Habitual Offenders

Habitual Offenders-1

Ticket ID	8462105
Ticket/Case/Case Name	[REDACTED]
Digits	13
Tickets	13199
Date	1/27/2019 04:24:28
Assignment	
Comments	Original mapping/monitoring
SAC	NER

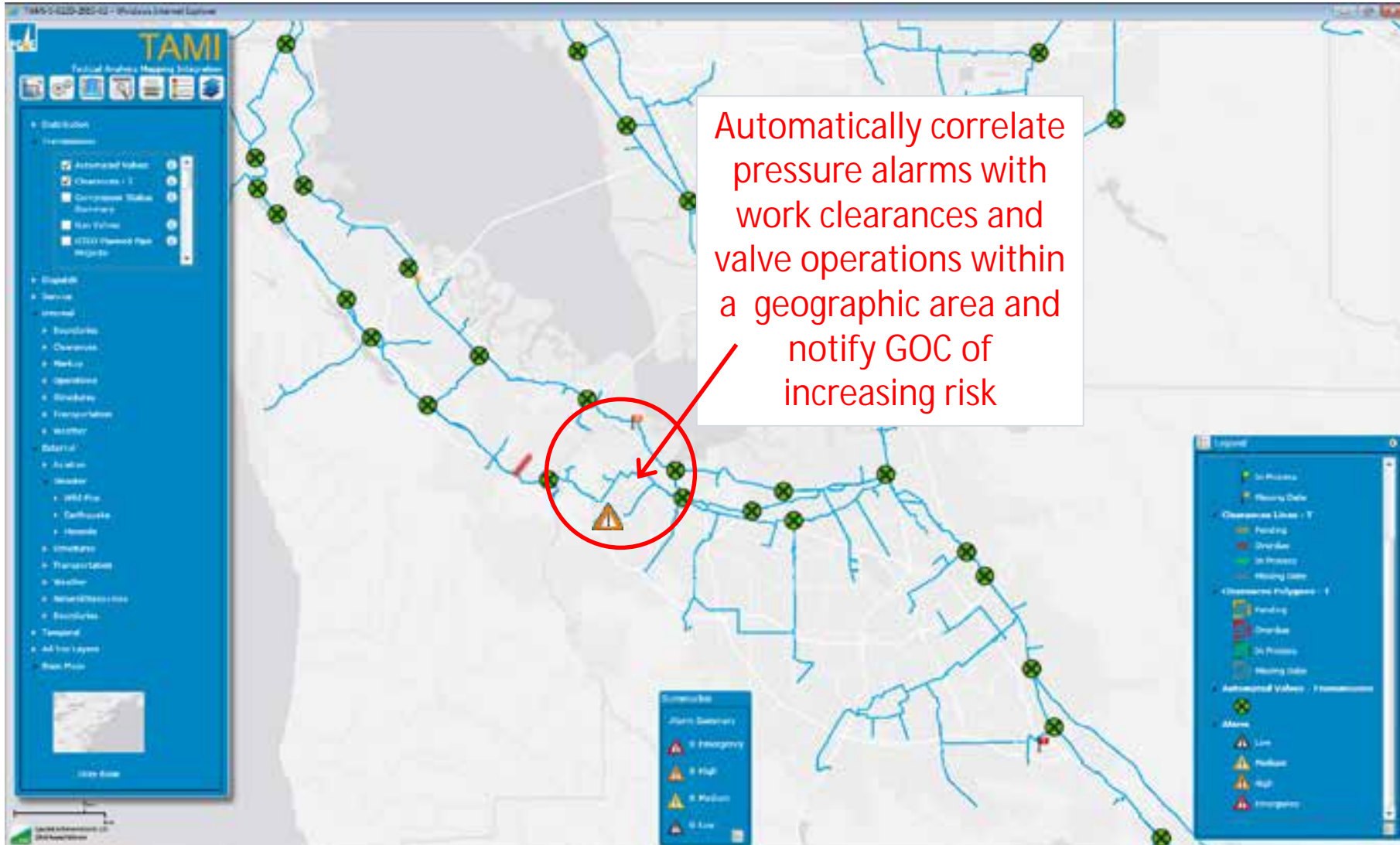


Risk: Weather & Outside Forces, Land Movement



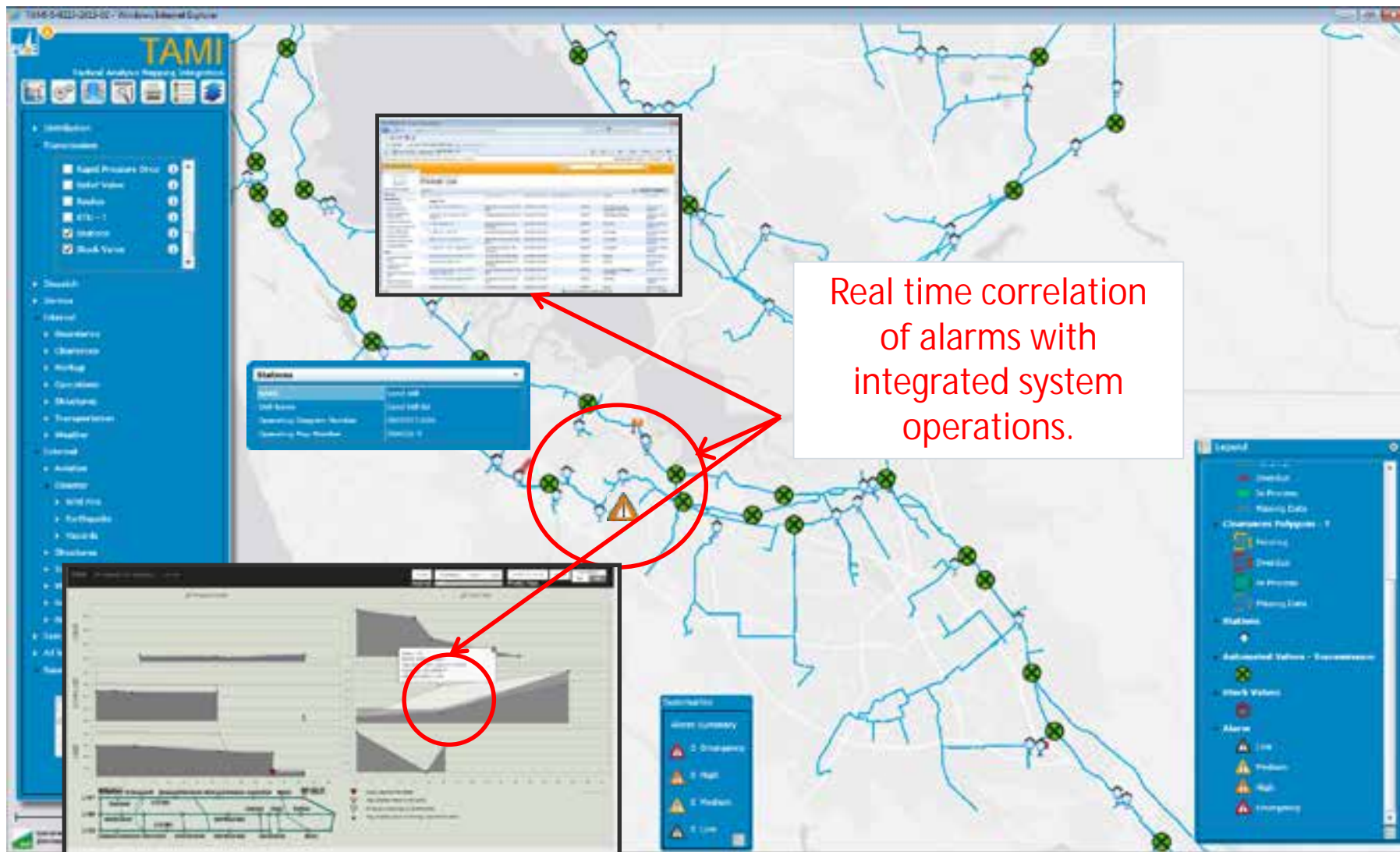
Automatically correlate seismic activity, weather events (rain/flood), and areas of landslide potential with pipeline location and notify GOC of increased risk.

Risk: Incorrect Operations

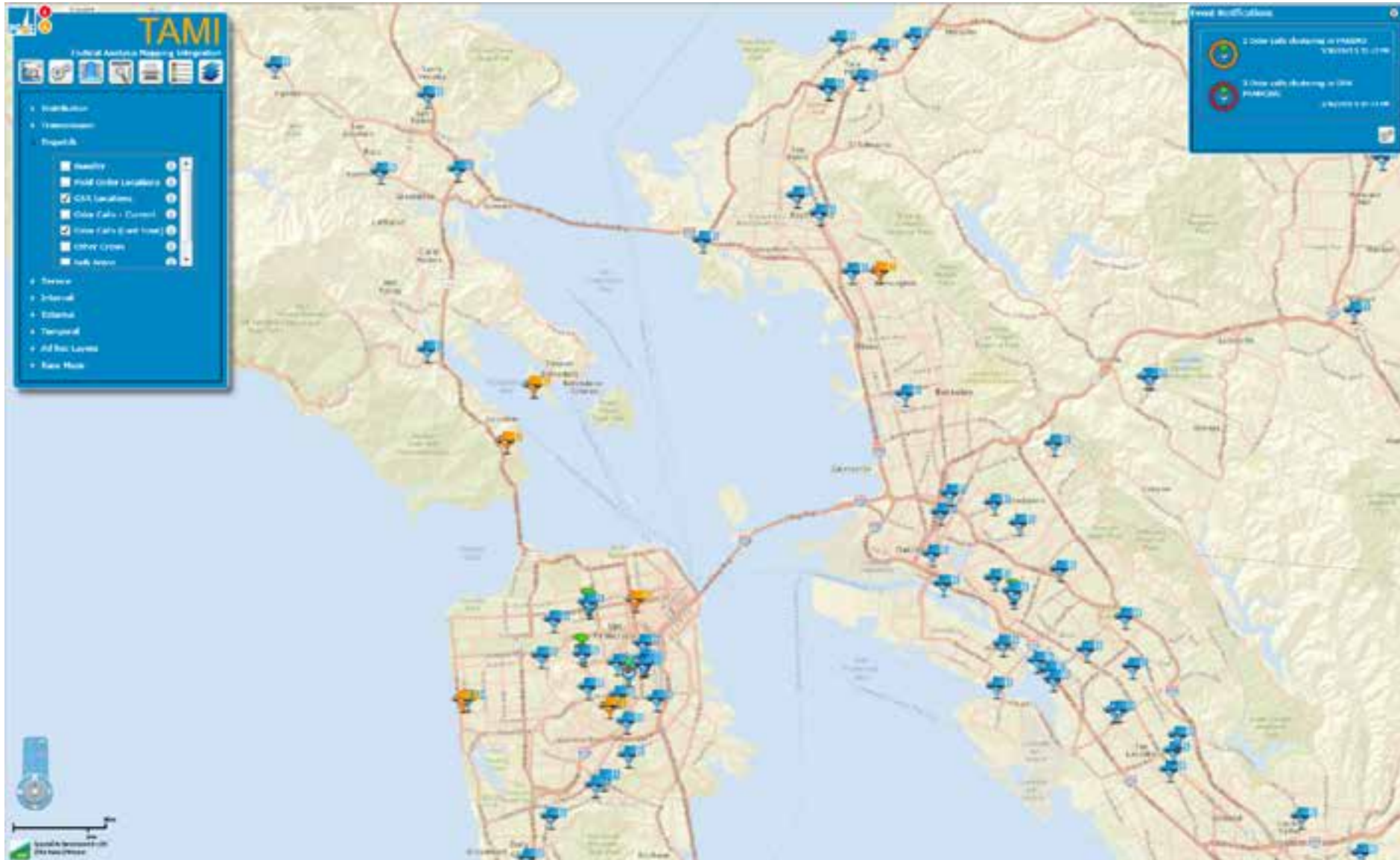


Automatically correlate pressure alarms with work clearances and valve operations within a geographic area and notify GOC of increasing risk

Risk: Equipment Related



Real time correlation of alarms with integrated system operations.



Questions?

