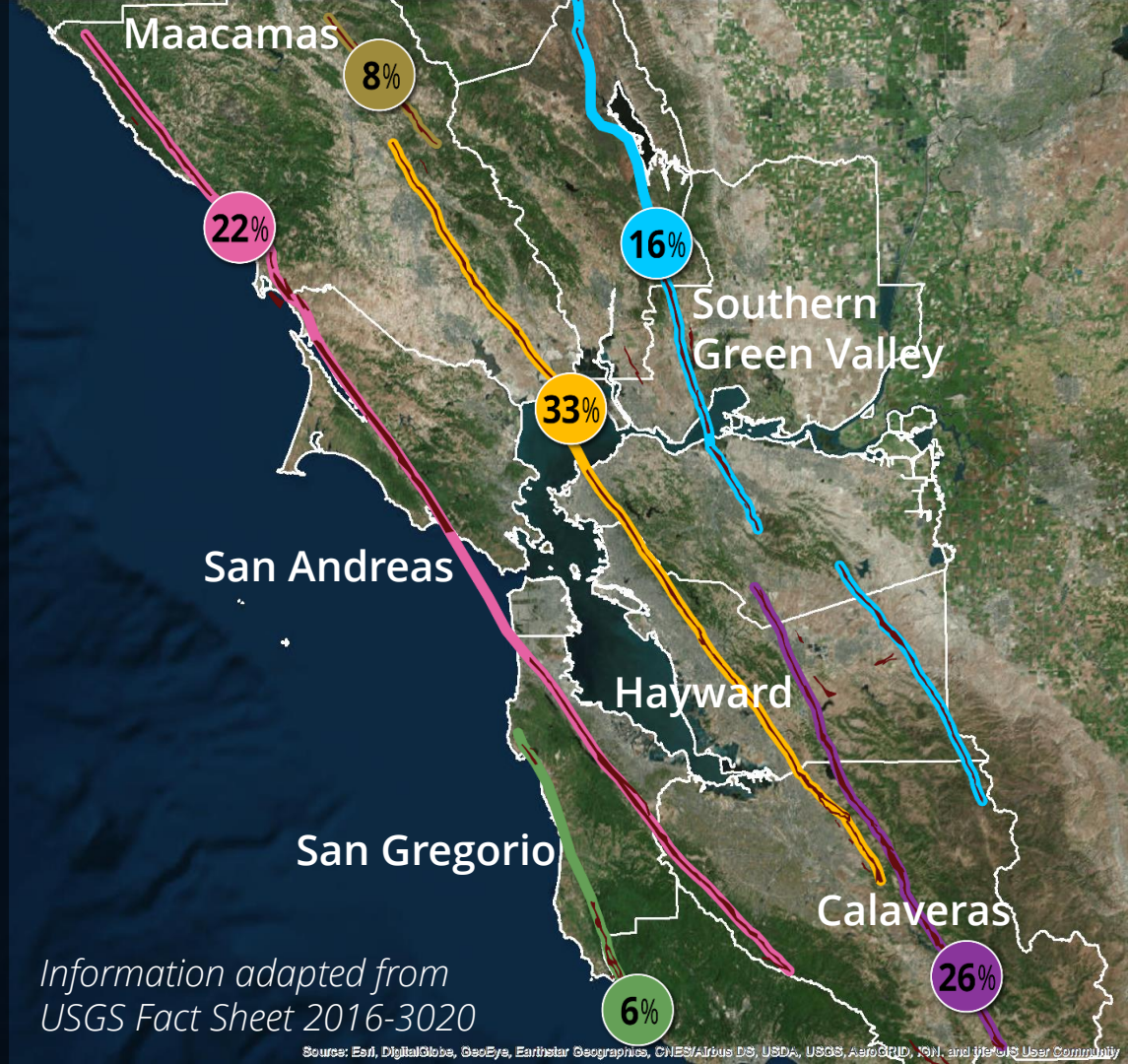
INFORMATION BRIEFING

Earthquake Scenarios & Seismic Policies

Michael Germeraad
ABAG | MTC

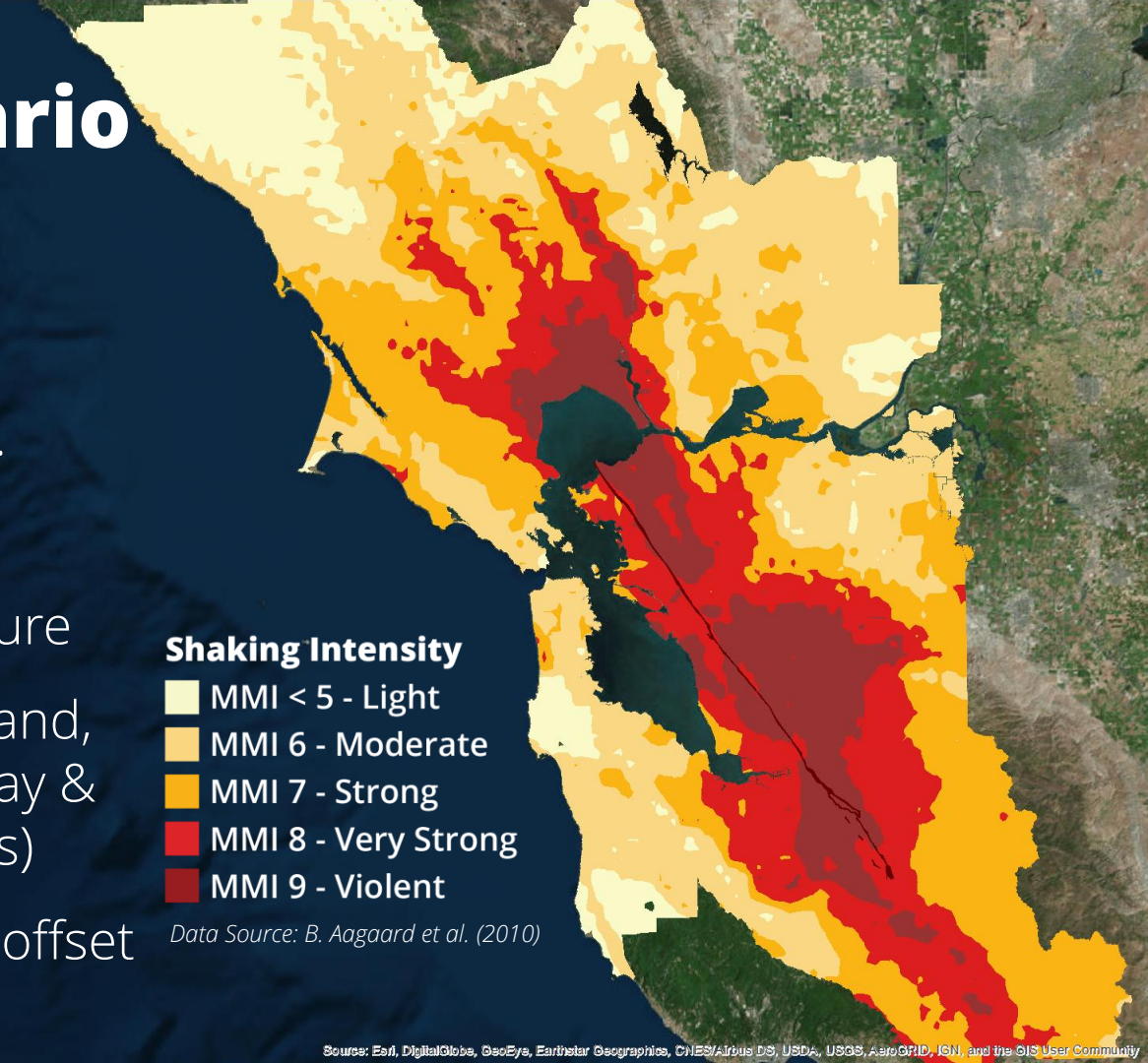


Information adapted from USGS Fact Sheet 2016-3020

HayWired Scenario

Mainshock

- 7.0 earthquake
- April 18, 2018, at 4:18 p.m.
- Wind is mild
- No rain, average temperature
- Rupture starts under Oakland, runs North to San Pablo Bay & South to Fremont (53 miles)
- 2 meters (6.5 feet) of fault offset

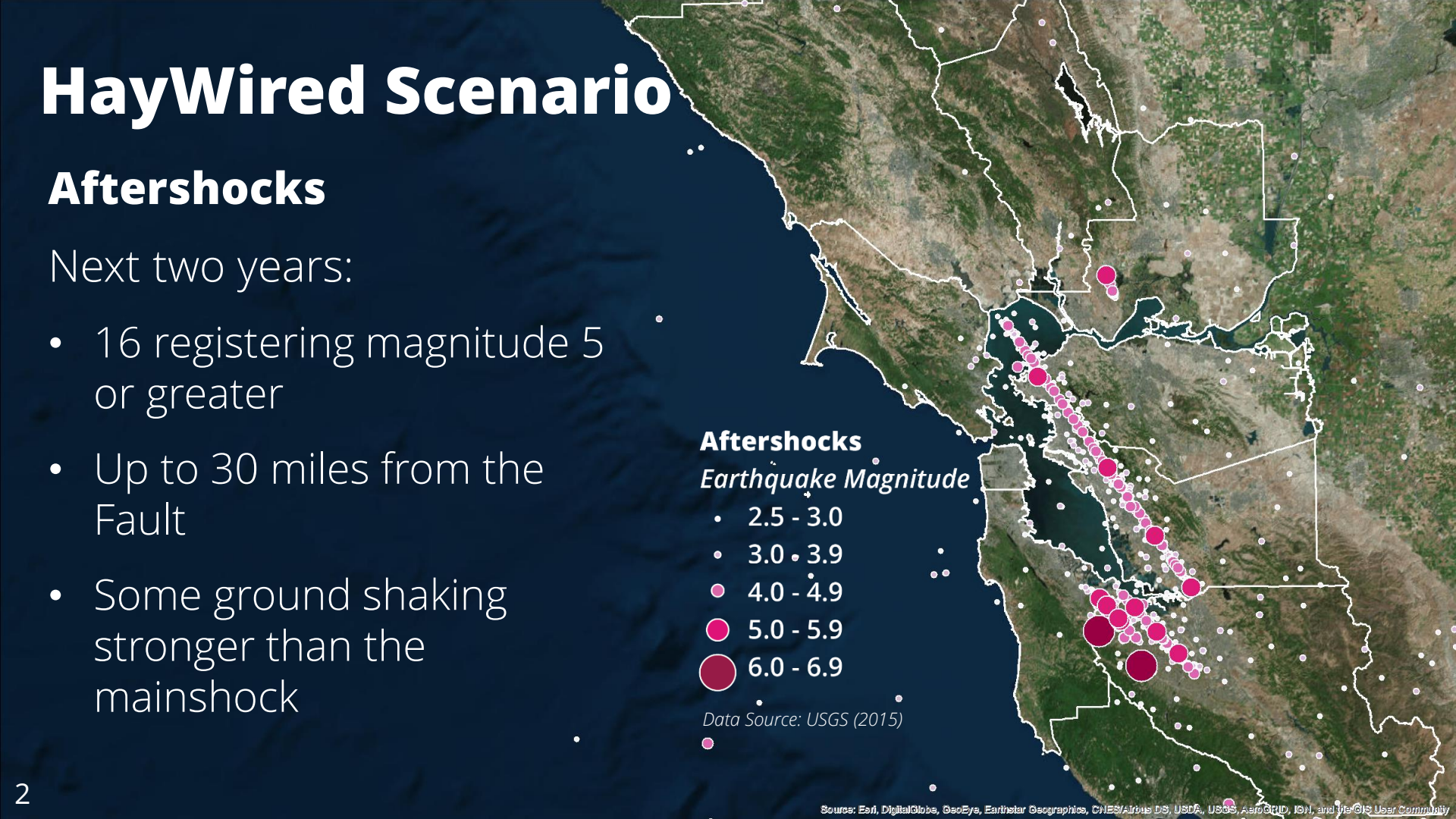


HayWired Scenario

Aftershocks

Next two years:

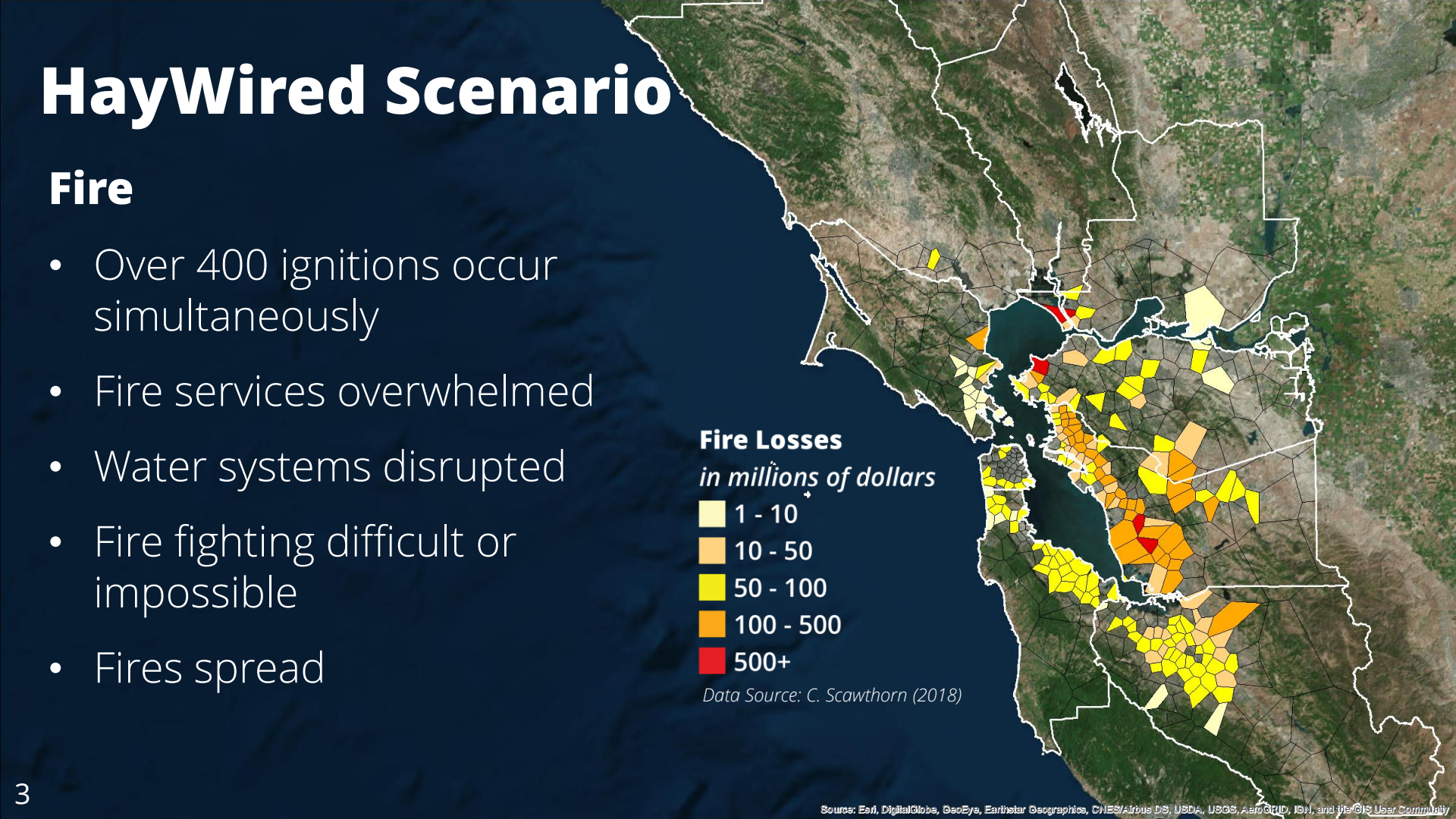
- 16 registering magnitude 5 or greater
- Up to 30 miles from the Fault
- Some ground shaking stronger than the mainshock



HayWired Scenario

Fire

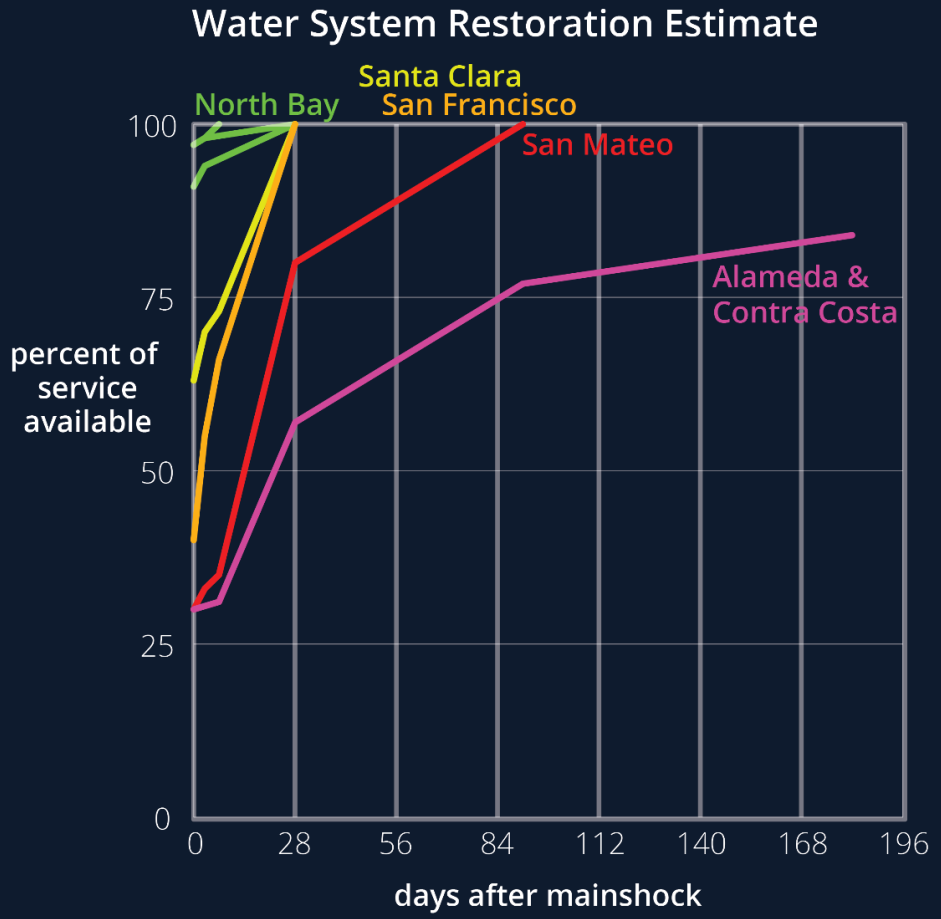
- Over 400 ignitions occur simultaneously
- Fire services overwhelmed
- Water systems disrupted
- Fire fighting difficult or impossible
- Fires spread



HayWired Scenario

Water System Impacts

- Shaking, liquefaction, and fault rupture results in extensive water main breaks
- Water system failures make fire fighting difficult or impossible
- Chart shows multi-month restoration timelines for some Counties

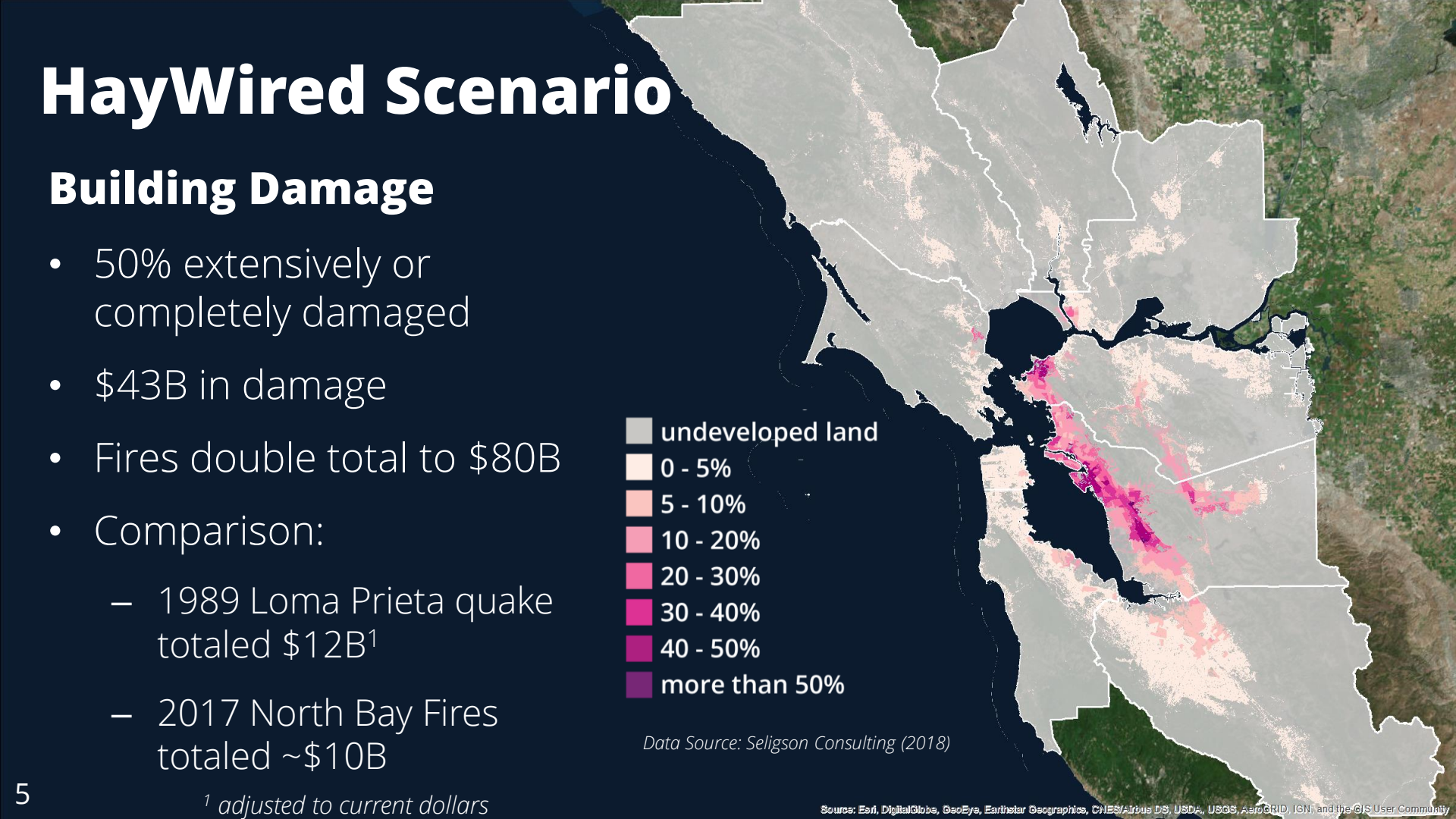


Data Source: K. Porter (2018)

HayWired Scenario

Building Damage

- 50% extensively or completely damaged
- $43B in damage
- Fires double total to $80B
- Comparison:
  - 1989 Loma Prieta quake totaled $12B[1]
  - 2017 North Bay Fires totaled ~$10B



[1] *adjusted to current dollars*

HayWired Scenario

Objectives

- Advance knowledge of, and inform action to reduce earthquake risks.
- Help build community capacity to respond and recover.
- Improve understanding of earthquake early warning.
- Educate about building code performance and public perception.
- Facilitate conversations about utility lifeline restoration interdependencies.

Resilience Policies

1. Survey existing buildings and enact retrofit standards to save lives and preserve housing.
2. Expand financing measures to support resilience initiatives.
3. Retrofit the California Building Code to provide immediate occupancy standards for all new construction.
4. Convene a Regional Lifelines Council to address interdependencies among cities, special districts, and private utilities.