

City of Portland Mitigation Action Plan, 2016

Equitably reducing risks from natural hazards in Portland



Presentation Snapshot

- Mitigation planning in short
- Purposeful equity
- Portland's earthquake risks
- Action highlights
- Energy infrastructure study
- Next steps



2016 MITIGATION ACTION PLAN (THE MAP)



Mitigation Action Plan

- Our strategy to reduce risk from natural hazards
- Establishes eligibility for federal grants
- Risks, vulnerabilities, and actionable strategies

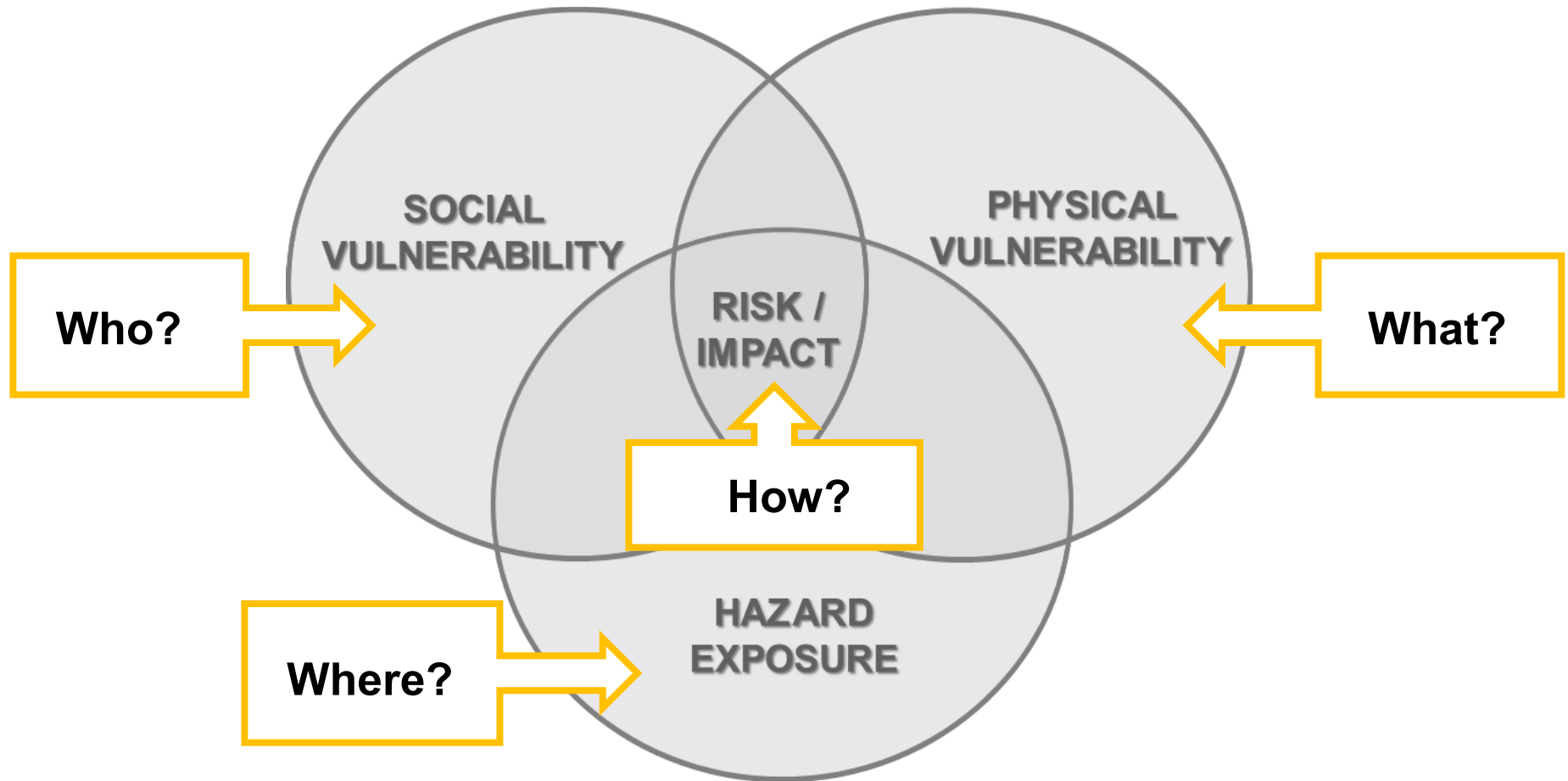


Our Mission

To *equitably* reduce risk and the adverse impacts of natural hazards by building community resilience through collaborative, cost-effective actions and strategies.



Purposeful Equity



Purposeful Equity



“**Equity** is realized when identity – such as race, ethnicity, gender, age, disability, or sexual orientation – has no detrimental effect on the distribution of resources, opportunities, and outcomes for groups or members in a society.”

Key Participants

- 1) Steering committee: process, goals and actions; engagement strategy
- 2) Bureaus: expertise on infrastructure, capabilities, and programs
- 3) Public: attend workshops; provide local knowledge and priorities
- 4) City Council: adopts the plan; resources for implementation



Mitigation Action Plan Contents

- 1) **Risk assessment:**
Exposure - Where
- 2) **Vulnerability analysis:**
Vulnerability –
Who/What
- 3) **Mitigation strategy:**
Risk/Impact – How



Legend

- ### Liquefaction Susceptibility

Type

- 0 -- None
1 -- Very Low
2 -- Low
3 -- Moderate
4 -- High
5 -- Very High



0 0.75 1.5 Miles

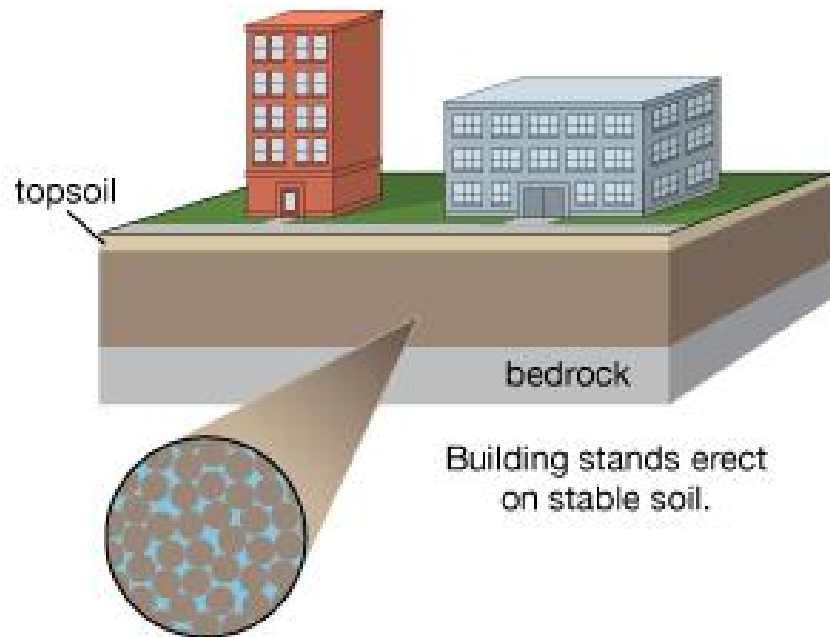
Sources: DOGAMI-2013;
City of Portland-2016

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Soil liquefaction

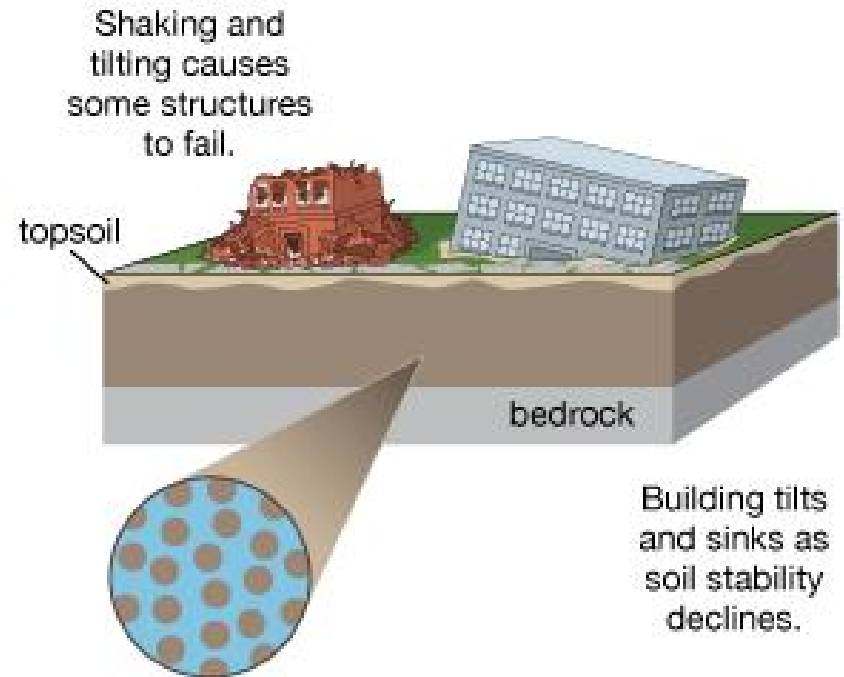
stable soil



Building stands erect
on stable soil.

Loosely packed grains
of soil are held together
by friction. Pore spaces
are filled with water.

liquefied soil



Shaking and
tilting causes
some structures
to fail.

Building tilts
and sinks as
soil stability
declines.

Shaking destabilizes
the soil by increasing the
space between grains.
With its structure lost,
the soil flows like a liquid.

Cascadia 9.0 Magnitude
Earthquake--Peak
Ground Acceleration

■■■■■ City Boundary

Cascadia M9.0
earthquake PGA

Potential Damage - Perceived Shaking



0 0.75 1.5 Miles

Sources: USGS-2011;
City of Portland-2016

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Mitigation Action Plan (MAP)

Earthquake Fault Lines

Legend

- City Boundary
- Earthquake Fault Lines
 - Unnamed Fault
 - Beaverton Fault
 - East Bank Fault
 - Lake Oswego Fault
 - Marylhurst Fault
 - Oatfield Fault
 - Portland Hills Fault
 - River Forest Fault
 - Sylvania Fault



0 0.75 1.5
Miles

Sources: DOGAMI-2011;
City of Portland-2016

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Mitigation Action Plan (MAP)

Portland Hills 6.5
Magnitude Earthquake-
Peak Ground
Acceleration

Legend

City Boundary

Portland Hills M6.5
earthquake PGA

Potential Damage -
Perceived Shaking

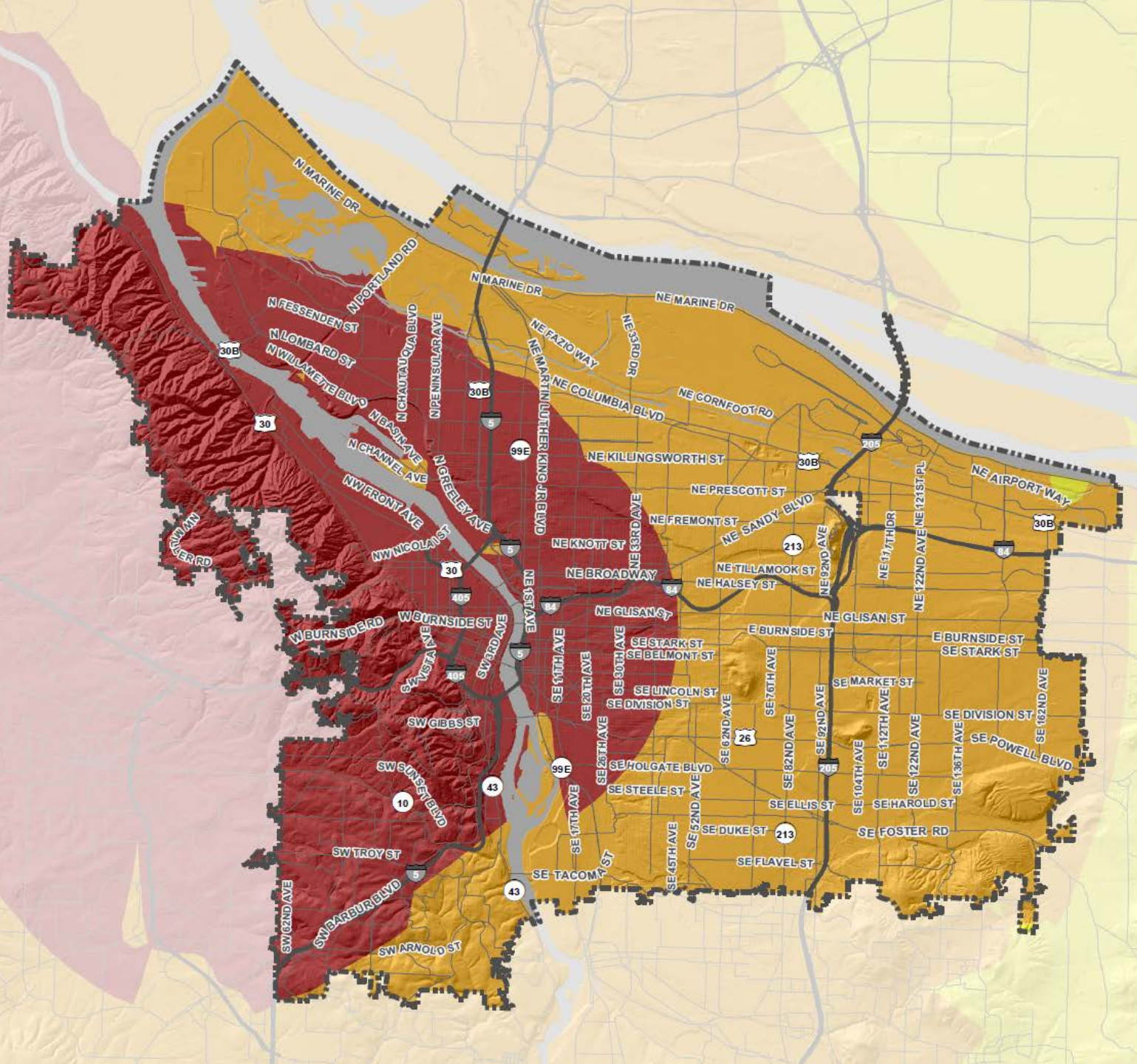
- V -- Very Light -
Moderate
- VI -- Light - Strong
- VII -- Moderate -
Very Strong
- VIII --
Moderate/Heavy -
Severe



0 0.75 1.5
Miles

Sources: USGS-2009;
City of Portland-2016

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Public Engagement Strategy

Preparedness survey with over 3,000 responses!



Public Engagement Strategy

Planning for Real Workshops (9) + 10 follow-up meetings with immigrant/refugee communities and Coalition of Communities of Color



Dot Number:

TELL US WHAT YOU THINK

PORTLAND NATURAL HAZARD MITIGATION PLAN 2016

Use this comment card to tell us what worries you most about natural hazards in Portland and what you think city offices should do to reduce natural hazard risks. If you're talking about a certain place, put a numbered dot sticker on the map to show us where.

HAVE YOU EXPERIENCED NATURAL HAZARDS IN PORTLAND? WHAT DO YOU WORRY ABOUT THE MOST?

Example: "My street is in a floodzone. I'm worried I won't be able to get home when it floods".


WHAT ARE SOME THINGS YOU THINK PORTLAND CITY OFFICES SHOULD DO TO REDUCE OUR RISK?

Example: "The city should increase open space in flood areas to absorb flood water and reduce flooding impacts to streets and neighborhoods."

DO YOU HAVE OTHER COMMENTS YOU'D LIKE TO SHARE?

YOUR CONTACT INFORMATION:

Name: _____
Organization/Affiliation: _____
Phone Number: _____
Email: _____
Can we contact you with additional information about the plan? Y / N



Public Engagement Strategy

“Summer Socials”: Wallace, Columbia, Lents, and Gabriel Parks



Action Plan



- solar + battery storage pilot projects

- continue to coordinate with levees on permitting



Action Plan

- Expand NETs into every neighborhood, and other communities



- Strategically replace water pipes with earthquake resistant materials

Action Plan



- provide culturally appropriate disaster preparedness, home safety, and emergency response training

- review actions for unintended consequences— find ways to reduce disparities



Critical Energy Infrastructure (CEI) Hub Risk Assessment

- Enhanced HAZUS risk assessment for CEI Hub
 - Fossil fuel infrastructure (tank farms)
 - Electrical substations and transmission lines
 - Natural gas and LNG



Mitigation Action Plan (MAP)

Critical Energy Infrastructure (CEI) Hub

Legend

- City Boundary
- Linnton
Neighborhood
- Critical Energy
Infrastructure (CEI)
Hub Boundary

- ★ City Hall
- Forest Park



0 1.25 2.5
Miles

Source: City of Portland-2016



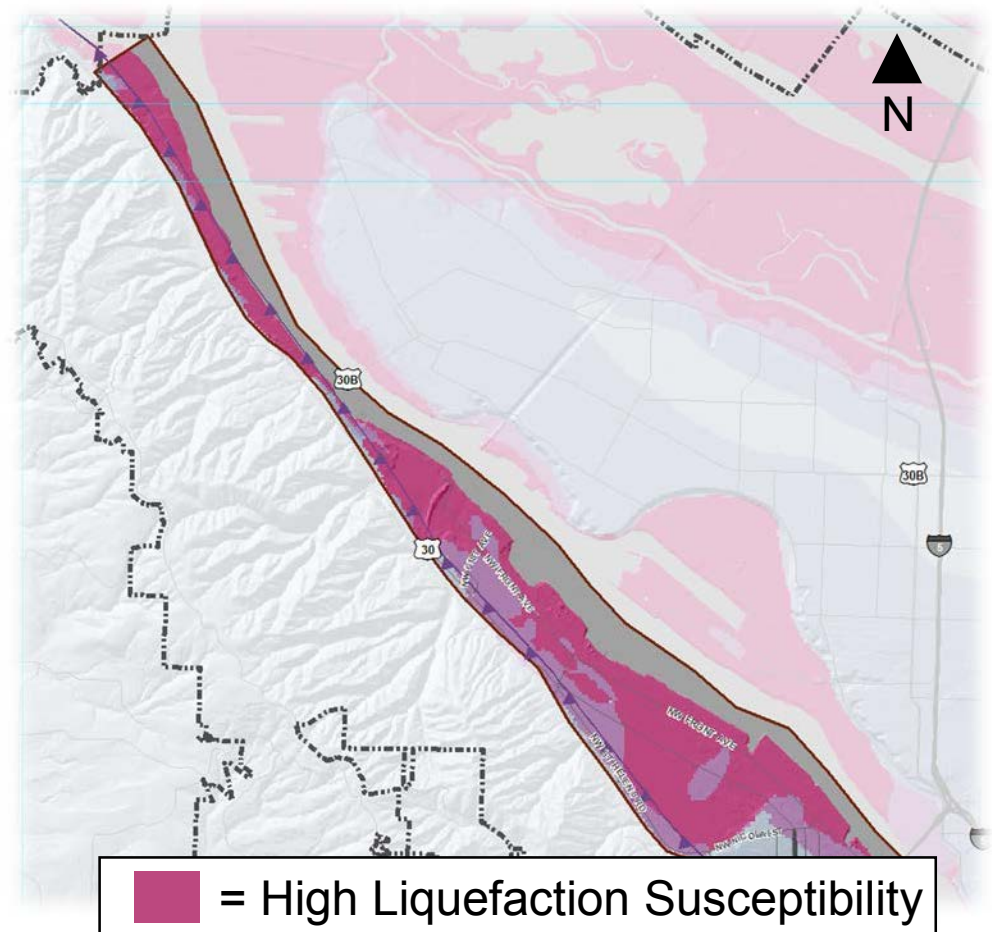
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Critical Energy Infrastructure (CEI) Hub Risk Assessment

Findings:

1. Lack of data leads to understatement of risk.
2. Most facilities are on liquefiable soils.
3. Assets >100 years old to new.
4. The CSZ event is not our only earthquake risk.



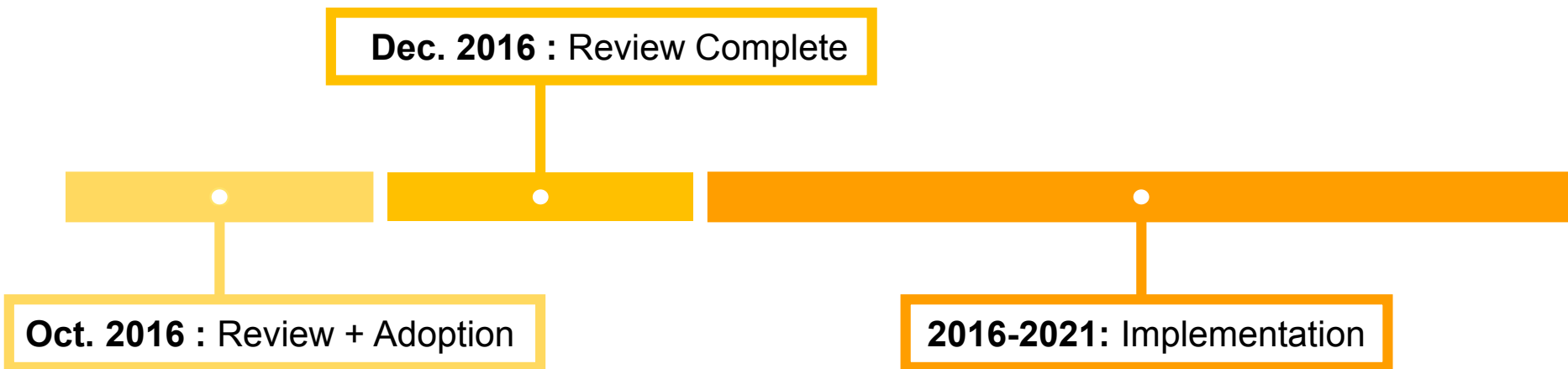
Critical Energy Infrastructure (CEI) Hub Risk Assessment

- Key Recommendations:
 - **CEI Hub Disaster Resilience Workgroup** – policy and strategies
 - **Policy Implementation and Facility Retrofits** – Fossil Fuel Infrastructure Resolution, facility inventory



Next Steps

- Review complete by **December**
- Implementation and Maintenance through **2021**
 - Bureaus: implement high-priority actions, apply for grants
 - Implementation committee: oversight and collaboration
 - Annual progress reports



Questions ?