

Troutdale Hazard Mitigation Plan

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Why is Hazard Mitigation Planning Important For Troutdale?

- 1. Help the community deal with natural and hazards rationally, effectively, and in a cost-effective manner
- 2. It's required by FEMA to maintain eligibility for future mitigation grants – which typically provide 75% FEMA funding

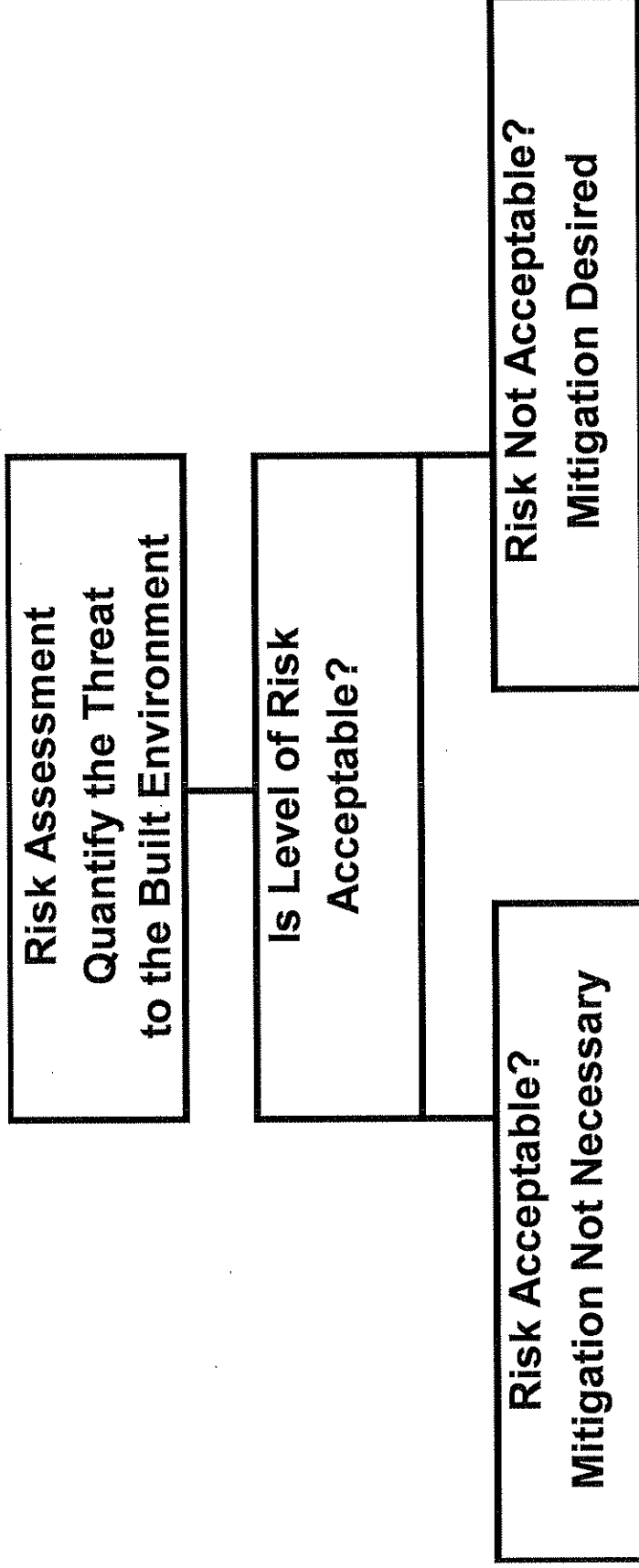
Mitigation Planning: It's Always About **RISK**

- RISK means the threat to the built environment:
 - Buildings and contents
 - Infrastructure
 - People
- RISK assessment must be quantitative
 - Frequency and severity of hazard events
 - Quantitative measures of impacts: damages, economic losses, and casualties

What is "Mitigation"?

- Mitigation simply means positive actions taken to reduce the level of risk from natural or manmade hazards.
- Mitigation actions:
 - Physical measures to reduce risk
 - Improve planning and response to minimize disaster impacts on the community

Mitigation Planning



Mitigation Planning

Risk Not Acceptable? Mitigation Desired			
Identify Mitigation Alternatives Find Solutions to Risk			
Prioritize Mitigation Alternatives Benefit-Cost Analysis and related tools			
Obtain Funding Implement Mitigation Measures Reduce Risk			

Dealing with Natural Hazards

- There are two common extremes:
 - **Ignore the risk** as negligible or very long term and take no actions to mitigate risk.
This is the most common outcome.
 - **Overreaction** – the sky is falling – let's retrofit every building in Oregon to make them “earthquake proof.”
- Either extreme is bad public/private policy

Troutdale Mitigation Plan – Considers 6 Hazards

- 1. Volcanic Events
- 2. Floods
- 3. Earthquakes
- 4. Winter Storms
- 5. Wildland/Urban Interface Fires
- 5. Landslides

Goals

- Reduce the threat to life safety
- Reduce the threats to Troutdale buildings, facilities and infrastructure
- Enhance emergency response capability, emergency planning, and post-disaster recovery

Goals (continued)

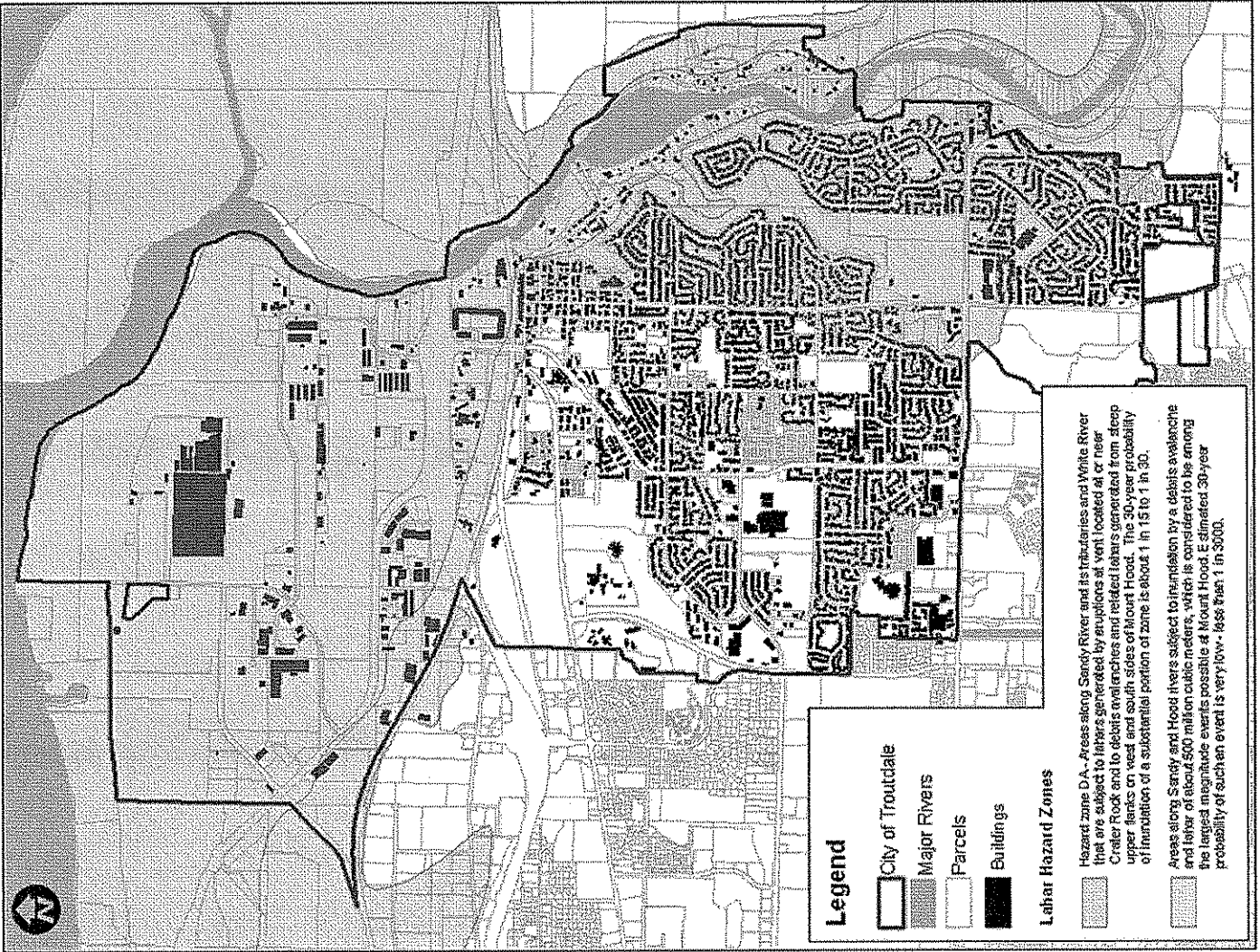
- Vigorously seek funding sources for mitigation actions
- Increase public awareness of natural hazards and enhance education and outreach efforts
- Incorporate mitigation planning into natural resource management and land use planning

Mitigation Action Items

- See Chapter 4 in the Mitigation Plan for multi-hazard and hazard-specific mitigation action items

Volcanic Hazards

- Volcanic hazards pose a substantial risk for Troutdale
- Major lahars from Mt. Hood eruptions travel down the Sandy River and may inundate substantial portions of the city
- Mitigation: GIS mapping, public awareness and emergency warning-evacuation



Earthquakes

- Earthquakes pose a substantial risk for Troutdale
- Major earthquakes may result in substantial damage to vulnerable buildings and infrastructure
- Mitigation: Identify critical buildings and infrastructure at risk, including schools, and retrofit where necessary

Floods and Dam Failures

- Levee systems provide a high level of protection from most floods
- Residual risk from extreme floods or dam failures on the Columbia River
- Risk from Sandy River, Beaver Creek, their tributaries and storm water drainage
- Mitigation: GIS mapping to quantify risk, mitigation measures for high risk properties

Winter Storms

- Wind, snow, ice storms affect above ground utility lines and transportation
- Effects on buildings generally minor
- Mitigation: Back-up power for all critical facilities, encourage utilities to enhance tree trimming and line upgrades

Landslides

- High risk areas along portions of the Sandy River and Beaver Creek
- Mitigation: more detailed landslide hazard mapping, identify at risk buildings and infrastructure, mitigate or relocate if risk is high

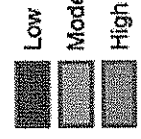
Wildland-Urban Interface Fires

- High risk areas along portions of the Sandy River and Beaver Creek
- Mitigation: fuel reduction and defensible space around buildings in high risk areas



Hazard Mitigation Plan

Community At Risk overall rating: Based upon a calculated value from the 4 CAR ratings: Risk Hazard, Protection Capability, and Value.



- Freeways
- Major Arterials
- County Boundaries
- Streets
- City Line



DISCLAIMER: This map is for reference use only. Data provided are derived from multiple sources with varying degrees of accuracy. It is the responsibility of the user to verify the accuracy or completeness of the data shown herein.



Next Steps

- Identify high priority mitigation action items for implementation and seek funding
 - Seismic risk assessments for: important city-owned buildings and utility infrastructure
 - Encourage or facilitate seismic risk assessments for private buildings and schools
 - Enhance emergency planning for extreme floods and dam failure and volcanic events

FEMA Grant Programs

- Pre-Disaster Mitigation Grant Program – annual program for all hazards – nationally competitive
- Flood Mitigation Programs (3)
- Post-Disaster Hazard Mitigation Grant Program – after Presidential disaster declarations in Oregon - competitive only within Oregon
- FEMA grants typically cover 75% of project costs with 25% local match

QUESTIONS?

Appendix – Troutdale Action Items

Hazard	Action Item	Coordinating Departments
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Volcanic Hazards Mitigation Action Items

Short-Term #1	Update public education, emergency notification procedures and emergency planning for ash fall and lahar events	Administration
Short-Term #2	Develop emergency evacuation protocols for lahar events and conduct exercises to test the protocols	Administration
Short-Term #3	Develop GIS overlay maps of parcel and building data with lahar zones	Public Works

Hazard	Action Item	Coordinating Organizations
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Earthquake Mitigation Action Items

Short-Term #1	Evaluate the seismic vulnerability of critical city-owned buildings, utilities and infrastructure and establish priorities to retrofit or replace vulnerable facilities to ensure adequate seismic performance of critical facilities.	Community Development
Short-Term #2	Encourage owners of other critical facilities, including fire stations and schools, to conduct similar seismic vulnerability assessments and to establish priorities for retrofit or replacement where necessary.	Administration
Short-Term #3	Conduct a sidewalk survey of residential, commercial and industrial buildings in Troutdale using FEMA's Rapid Visual Screening to identify especially vulnerable buildings, raise awareness and encourage mitigation actions.	Public Works
Short-Term #4	Disseminate FEMA pamphlets to educate homeowners and business owners about structural and non-structural retrofitting of vulnerable buildings and encourage retrofit.	Community Development
Long-Term #1	Obtain funding and retrofit important public facilities with significant seismic vulnerabilities	Finance

Hazard	Action Item	Coordinating Organizations
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Flood Mitigation Action Items: Within FEMA-Mapped Floodplains

Short-Term #1	Complete an inventory and GIS mapping of structures, critical facilities and important transportation or utility system components within mapped floodplains and/or within areas subject to flood in the event of levee or dam failures, including elevation data and structure/facility information.	Public Works
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Flood Mitigation Action Items: Outside of FEMA-Mapped Floodplains

Short-Term #1	Complete an inventory of structures, critical facilities and important transportation or utility system components in locations with a history of severe or repetitive flooding.	Public Works
Short-Term #2	Evaluate and improve notification, evacuation and response planning for areas within the potential inundation area for levee or dam failures.	Police
Long-Term #1	For locations with repetitive flooding and significant damages or road closures, determine and implement mitigation measures such as upsizing culverts or storm water drainage capacity.	Public Works

Hazard	Action Item	Coordinating Organizations
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Winter Storms Mitigation Action Items

Short-Term #1	Enhance tree trimming efforts especially for transmission lines and trunk distribution lines.	Parks
Short-Term #2	Encourage property owners to trim trees near service drops to individual customers	Code enforcement
Short-Term #3	Ensure that all critical facilities in Troutdale have backup power and emergency operations plans to deal with power outages	Public Works
Long-Term #1	Consider upgrading lines and poles to improve wind/ice loading, undergrounding critical lines, and adding interconnect switches to allow alternative feed paths and disconnect switches to minimize outage areas	PGE
Long-Term #2	Encourage new developments to include underground power lines	Community Development

Hazard	Action Item	Coordinating Organizations
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Landslide Mitigation Action Items

Short-Term #1	Complete the inventory of locations where buildings or infrastructure are subject to landslides	Community Development
Long-Term #1	Consider landslide mitigation actions for slides seriously threatening buildings or infrastructure	Community Development
Long-Term #2	Limit future development in high landslide potential areas	Community Development

Hazard	Action Item	Coordinating Organizations
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Wildland/Urban Interface Fire Mitigation Action Items

Short-Term #1	Identify specific parts of Troutdale at high risk for urban/wildland urban interface fires because of fuel loading, topography and prevailing construction practices	Community Development
Short-Term #2	Identify evacuation routes and procedures for high risk areas and educate the public	Police
Long-Term #1	Encourage fire-safe construction practices for existing and new construction in high risk areas	Community Development

Mitigation Actions Reduce Risk

RISK
BEFORE
MITIGATION

RISK
AFTER
MITIGATION

BENEFITS
OF
MITIGATION

REDUCTION
IN RISK

What is a Mitigation Plan?

- A Mitigation Plan reviews each hazard that poses risk to the community
- Identifies goals, objectives, and actions for reducing risks to the community
- Mitigation plans are planning guides, not regulatory documents

Hazard and Risk

**FLOOD
HAZARD
(FREQUENCY &
SEVERITY)**

X

**PROPERTY
EXPOSED
TO FLOODS**

=

**FLOOD
RISK
(DOLLARS)**

**Probability
of Damaging
Floods**

**Value and
Vulnerability of
Property Exposed
to Flood Hazard**

**Severity
of Threat
to the Built
Environment**

Mission Statement

Proactively facilitate and support
community-wide policies, practices
and programs that make Troutdale
more disaster resistant and disaster
resilient