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Envisioning Oregon's Coastal Futures

Advisory Council Meeting

January 15th, 2021

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5th Advisory Council Meeting

January 15th, 2021 (10:00 am – 11:30 am)

Virtual Meeting

Meeting Objectives:

- Update the Advisory Council on project progress.
- Discuss and work toward developing the project's final list of **policies, scenarios, metrics** and **implementation strategies** to be explored and quantified in Envision.
- Harness the expertise of the Advisory Council to develop actionable knowledge to inform statewide policies and localized decision-making.

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5th Advisory Council Meeting

January 15th, 2021 (10:00 am – 11:30 am)

Virtual Meeting

Meeting Agenda:

- 10:00 - Welcome, Introductions (lightning round all), Meeting Overview (Peter)
- 10:10 - Brief alternative futuring exercise (Pat Corcoran!)
- 10:20 - Centering the conversation on policies, scenarios, and metrics (John B. and Peter R.)
--Discussion
- 10:45 - Interactive breakout discussions on scenarios and styles of implementation (Jenna)
-- Discussion/Report Out
- 11:30 - Wrap up/next steps/project timeline/informal discussion of statewide and regional resilience efforts (Peter)

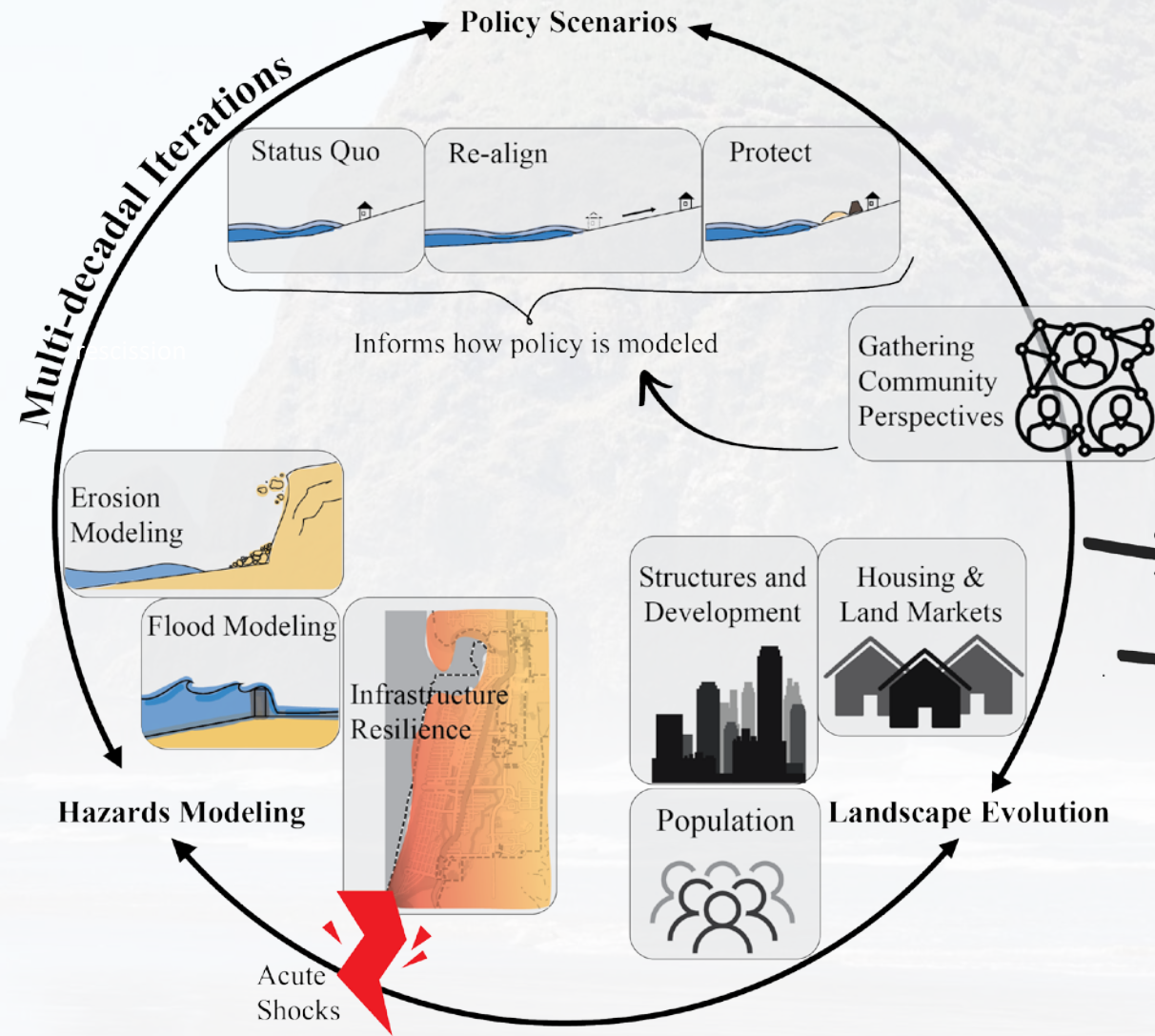
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Project Framework:



Project Themes:
Chronic Coastal Hazards
Acute Coastal Hazards
Economics of Risk
Equitable Resilience

Multiple Possible Futures

Informed Communities

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Framework for Assessing Resilience Strategies

1. Hazard Modeling

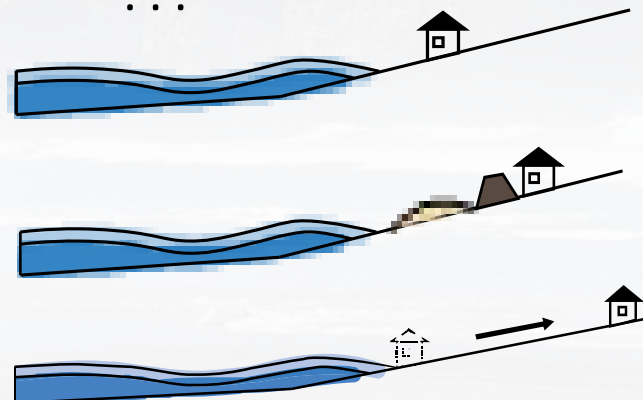
- CSZ: Earthquake + Tsunami
- What scenario? (M9)
- Timeframe? (2040, 2060)
- Coastal erosion and sea-level rise



Probability damage of ~1,000-year event

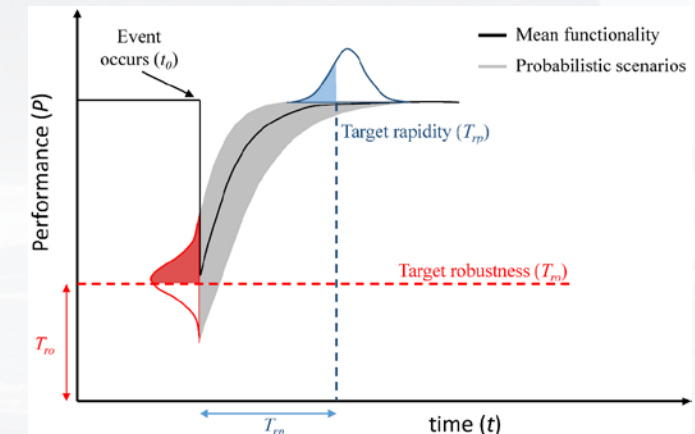
2. Policy options/strategies and Scenarios

- Status Quo
- Protect (retrofit)
- Realign (moving, zoning)
- Restore (accommodate)
- ...



3. Resilience Metrics

- Direct losses (life safety, capital)
- Indirect losses (recovery)
- Social equity (unequal loss)
- ...





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Scenarios, Policies, Metrics, Oh My...

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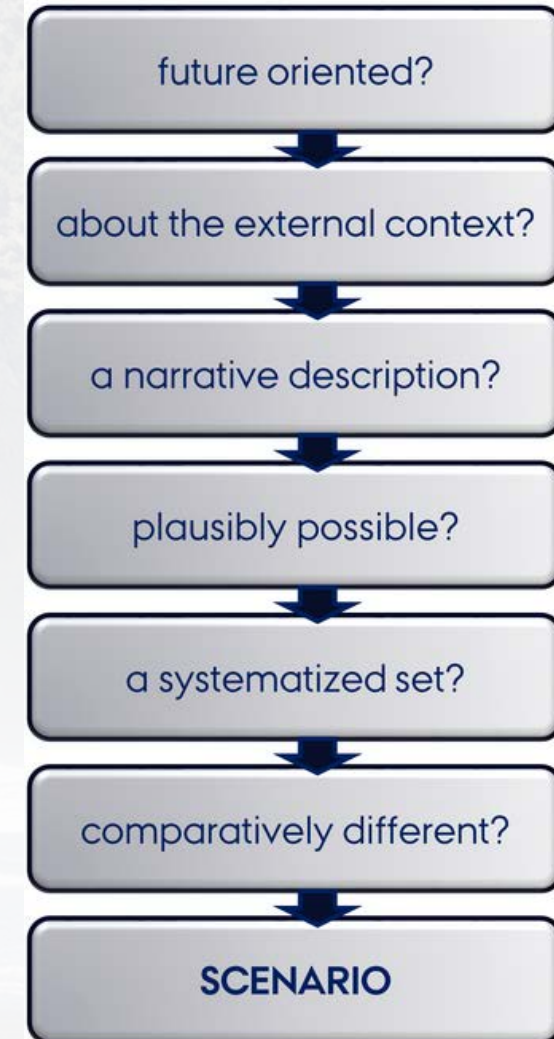
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Scenarios

Scenarios are:

- 1) Internally consistent and coherent collections of landscape change drivers and policy options that represent a general management trajectory
- 2) Are operationalized in Envision as a primary way to organize analyses of high-dimensional possibility spaces.



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Policies and Strategies

Envision policies/strategies define the **rules** and **management options** that are available to landowners and decision-makers, can be targeted to particular qualities of place, and can respond to landscape feedbacks.

Examples:

- 1) Add BPS when erosion rates are high and structures are impacted
- 2) Restrict new development in areas that have experienced flooding more than twice in the last 10 years
- 3) Move structures to the safest site on lot when subject to frequent flooding



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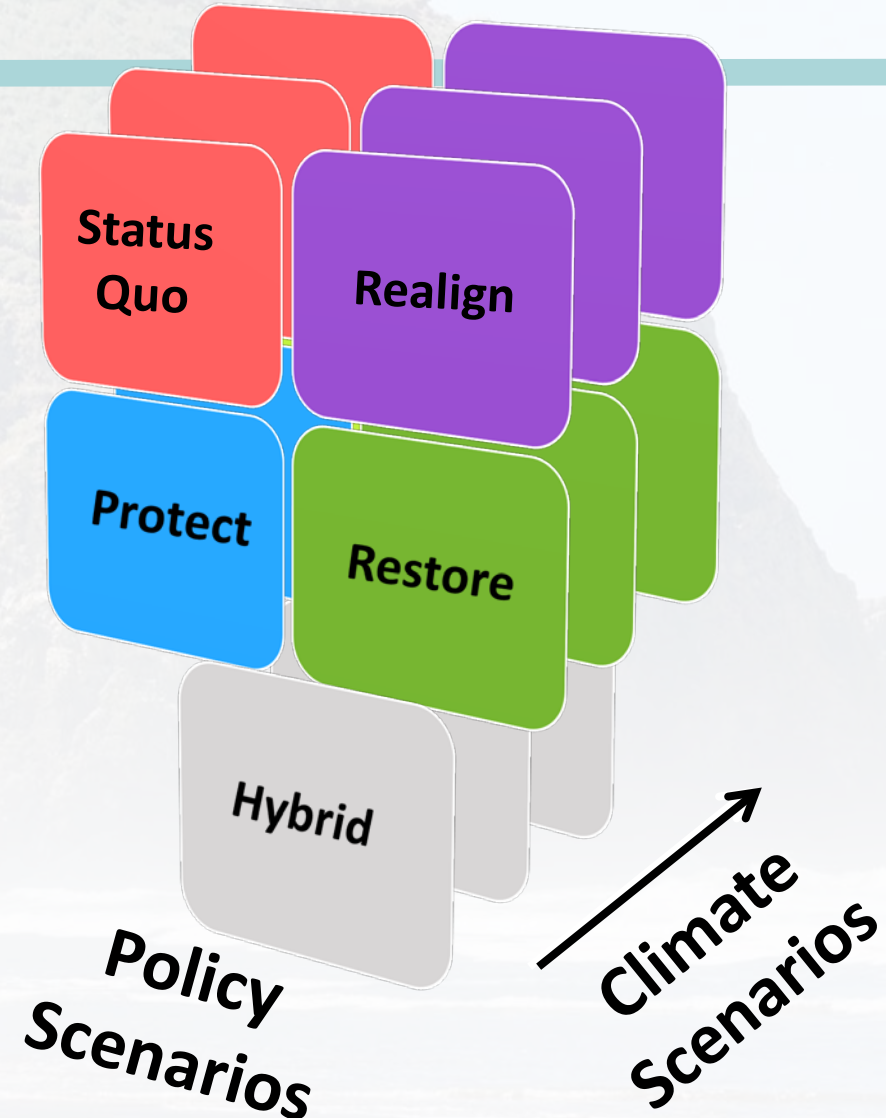
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Climate Scenarios
(Physical Drivers)

X

Policy Scenarios
(Human Drivers)



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Candidate Policy Scenario Narratives



Baseline (Status Quo)

Continuation of present-day policies. Provides a baseline to compare with other scenarios.



Example Policy: Maintain current backshore protection structures (BPS) and allow more BPS to be built on eligible lots.

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Candidate Policy Scenario Narratives



Protect (PR)

Policies or decisions are implemented that involve resisting environmental change in order to protect existing infrastructure and human activities (e.g. building or strengthening shoreline armour).



Example Policy: Construction of riprap beach protection structures for coastal protection

Example Policy: Building retrofits

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Candidate Policy Scenario Narratives



Realign (RA)

Seawall scenario



Managed retreat scenario



Policies or decisions are implemented that involve *changing* human activities to suit the changing environment (e.g. relocation of infrastructure and/or people).

Example Policy: Hazard zone development restrictions

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Candidate Policy Scenario Narratives



Restore (RS)

Policies or decisions are implemented that *accommodate* environmental change and prioritize habitat protection and conservation (e.g. restore dunes or nourish beaches).



Example Policy: Construction of dune restoration projects for coastal protection

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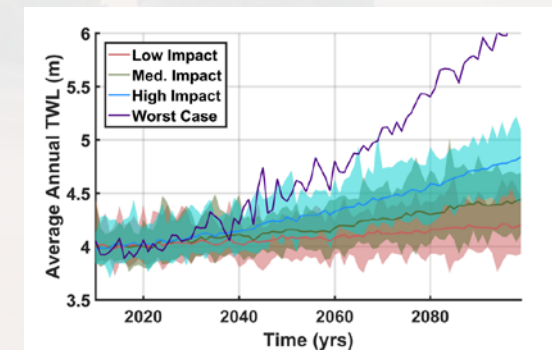
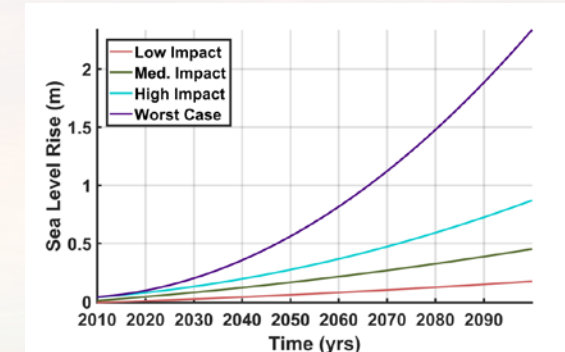


Individual Policies

Policy	BL	RA	RS	PR
BPS Constr.	Red			Blue
BPS Mainten.	Red		Green	Blue
BPS Nourish.	Red			Blue
DRP Constr.			Green	
DRP Mainten.			Green	
DRP Nourish.			Green	
Hazard zone development restrictions		Purple		
Remove Buildings From Hazard Zone		Purple		
Remove Critical Infrastructure from Hazard Zones		Purple		
Raise or Move structure to a new location in the same tax lot		Purple		Blue
Raise Critical Infrastructure				Blue

	Climate Scenario			
	Low Impact	Medium Impact	High Impact	Worst Case
Baseline	Light Red	Red	Dark Red	Dark Red
Realign	Light Purple	Purple	Dark Purple	Dark Purple
Restore	Light Green	Green	Dark Green	Dark Green
Protect	Light Blue	Blue	Dark Blue	Dark Blue
Policy Scenario				

Climate Impact Scenarios



Low Impact Scenario

Uses a low-end projection of SLR:
Extremely likely to exceed (95%)

Medium Impact Scenario

Uses a mid-range projection of SLR:
More likely than not to exceed (50%)

High Impact Scenario

Uses a high-end projection of SLR:
Extremely unlikely to exceed (5%)

Worst Case Scenario

Uses a "Worst Case" Scenario:
Project upper limit (0.1%)

???

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Discussion of 'read ahead' survey results

The purpose of this quick survey (10 minutes tops) is three-fold:

- 1) to ensure that we are not neglecting to include important policies;
- 2) to help us prioritize the suite of policies that will be simulated through Envision; and
- 3) to ensure that we have not neglected to measure specific 'resilience metrics' being impacted by these policies.

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Ranked list of policies to mitigate CHRONIC hazards

- Hazard zone development restrictions: Development within safest site or outside of hazard zones
- Remove critical infrastructure from hazard zones: Removes critical infrastructure from hazard zones
- Raise or move structure to a new location in the same tax lot: Raise or move a structure to a new location within the same tax lot
- Remove buildings from hazard zone: Removes buildings from hazard zones
- Community based development patterns
- Provide incentives/subsidies for property owners - conservation agreements, transferable development rights, buyback programs
- BPS Construction: Builds new Beach Protective Structures (BPS), (e.g. RipRap, to harden the shoreline against erosion and flooding)
- BPS Maintenance: Rebuilds BPS that are of insufficient height to perform their intended functions
- DRP Construction: Build new Dune Restoration Projects (DRPs), to protect the shoreline from erosion and flooding
- Prohibit new hard protection measures (e.g., BPS, dikes, levees, geotextile tubes)

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Ranked list of policies to mitigate Acute hazards

- Relocate critical infrastructure away from tsunami zones
- Reroute key transportation routes out of tsunami zones
- Provide incentives/subsidies for construction outside of hazard zones
- Hazard zone development restrictions: Development within safest site or outside of hazard zones
- Provide vertical evacuation facilities in coastal communities
- Relocate community assets (e.g., food banks, community centers, resource centers) away from tsunami zones
- Relocate housing out of tsunami zones
- Reinforce critical infrastructure
- Reinforce critical infrastructure
- Expand Urban Growth Boundaries to allow for new development away from tsunami zones
- Implement more stringent building codes
- Reinforce key road networks and bridges

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