Policy Choices and Consequences Workshop

4 December 2014 (1:00 pm – 4:30 pm)

Tillamook Bay Community College (Room 213)

Meeting Objectives:

1. **Review scenarios and updated results from Coastal Tillamook County Envision model**
2. **Set a framework for how to begin working towards a preferred scenario**
3. **Convene and engage Tillamook County Coastal Hazards Knowledge-to-Action Network**

Policy Choices and Consequences Workshop

4 June 2014 (1:00 pm – 4:30 pm)

Agenda

1:00 – 1:05 Welcome and Introductions

1:05 – 1:15 Meeting Objectives/Setting Expectations

1:15 – 1:30 Neskowin update

1:30 – 1:45 Redefine scenarios and explain where we are at in the process

Policy Choices and Consequences Workshop

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Agenda Cont'd

1:45 -3:00	**Overview of results and summary of key policies within each scenario (rating and ranking policy scenario narratives)**
3:00-4:00	**Breakout poster session to rate/rank individual policies and metrics**
4:00-4:30	**Meeting Synthesis/Discussion of timeline and next steps/Wrap up/KTAN data collection**
4:30- …	**Additional time to view posters**

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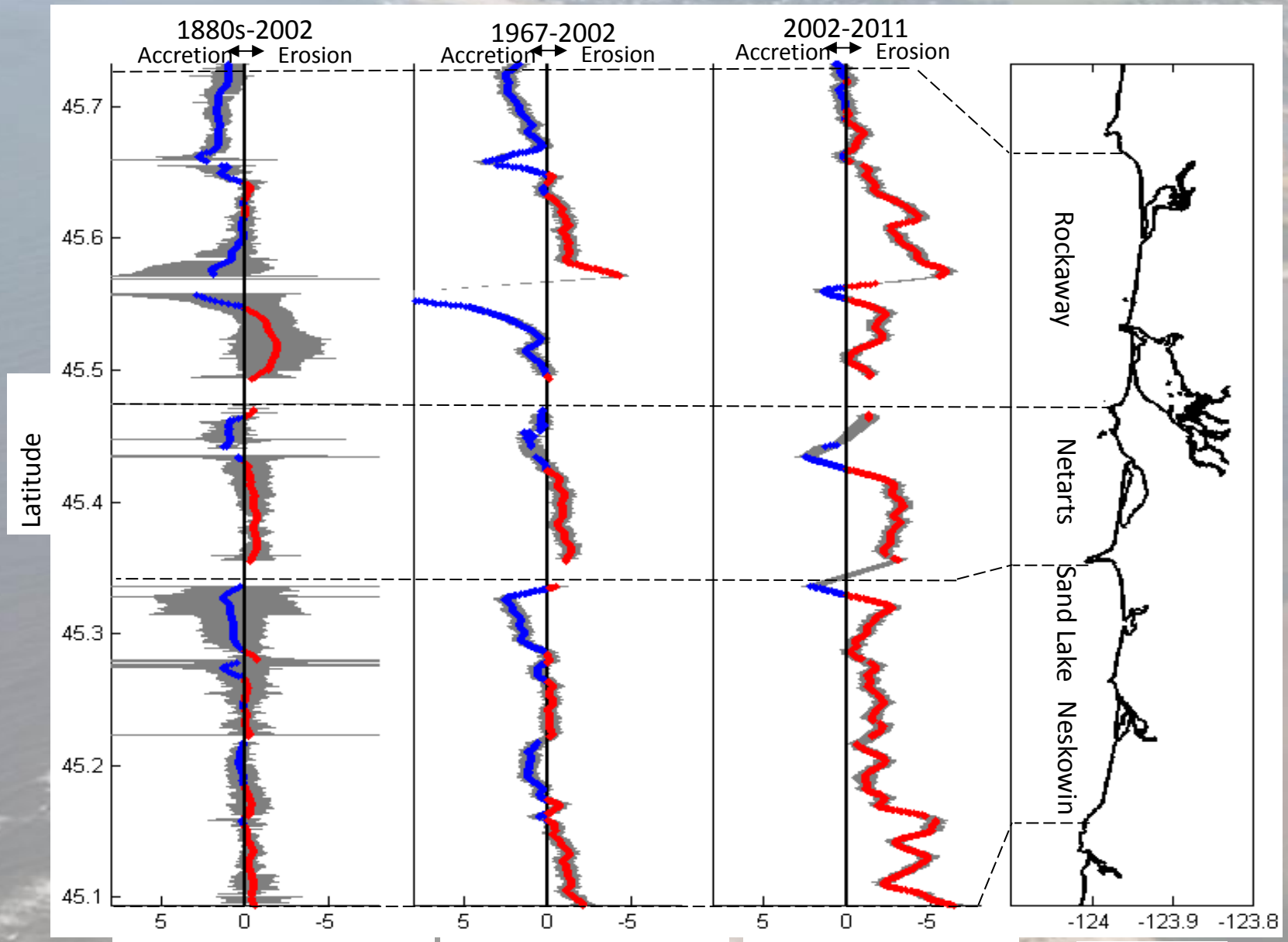
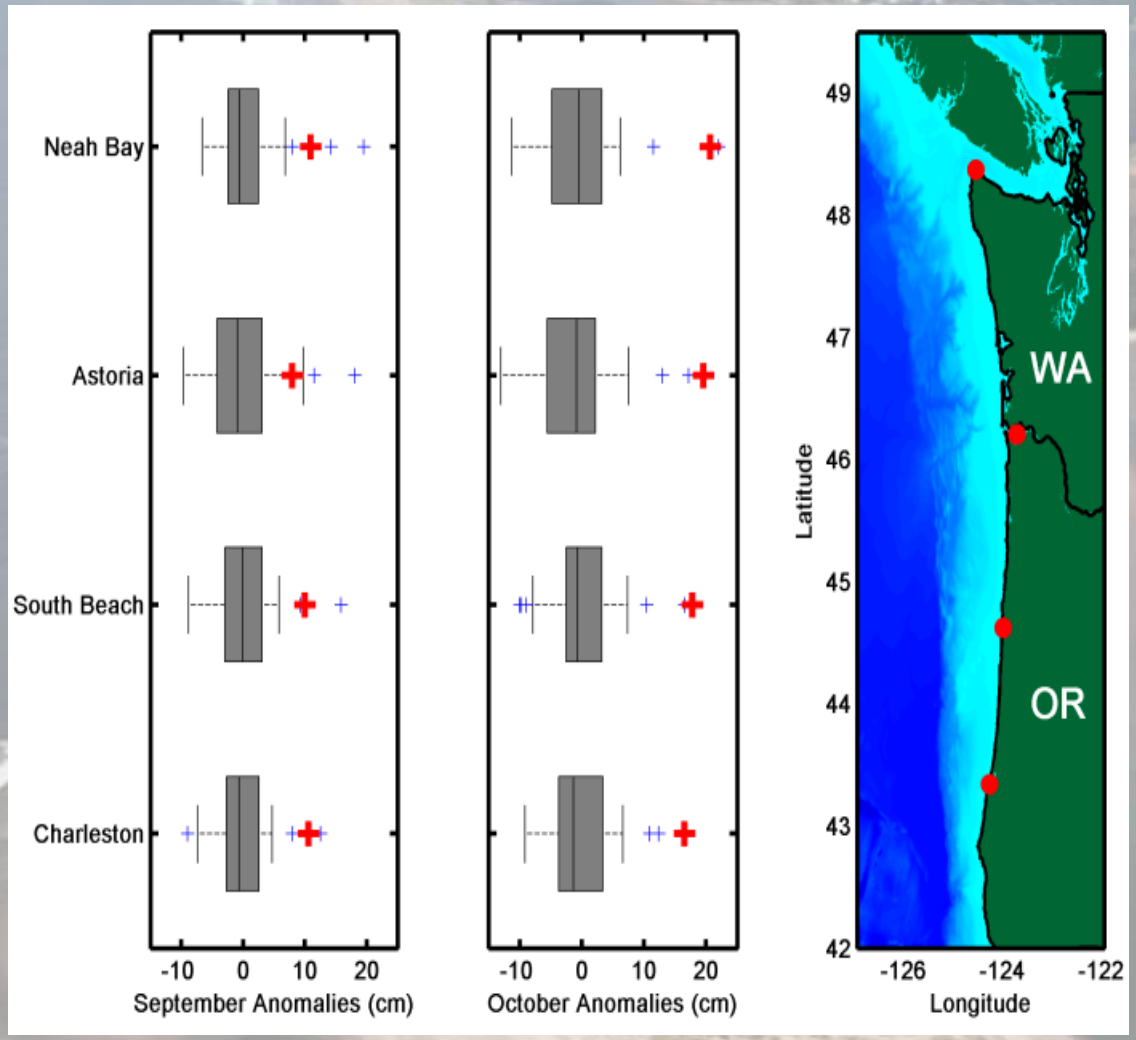
Tillamook County Coastal Problems

Tillamook County Shoreline Change Rates



Tillamook County Shoreline Change Rates



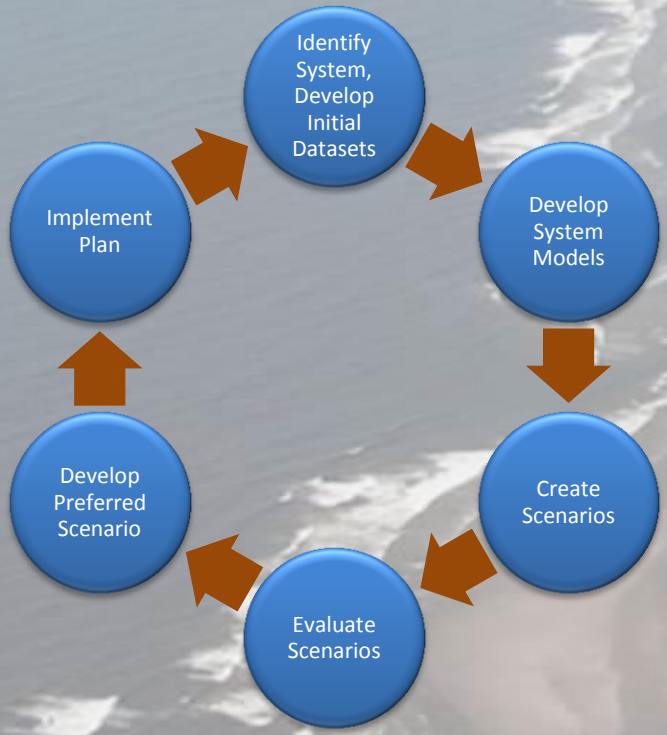
October 2014 had the highest sea level anomalies on record for Oregon. NOAA forecasts a ~60% chance of a moderate El Niño beginning this winter.

Neskowin Update – Guy Sievert

Tillamook County Coastal Futures Project

Project Objective:

Develop the information and tools necessary to envision future scenarios, assess impacts and vulnerability associated with erosion and flood hazards, and initiate adaptation strategies.



Data Sources

Landscape Data
- Land Use/Land Cover
- Zoning, Population, Structures
- Topography, Climate
- Many more…

Policy Options
Determined via Stakeholder Engagement

Landscape Change Models
- Population Growth
- Development
- Total Water Level
- Coastal Change Models

Envision

Evaluative Models/Metrics

Flooding
- Structures & Infrastructure Impacted
- Economic Value of Structures Impacted

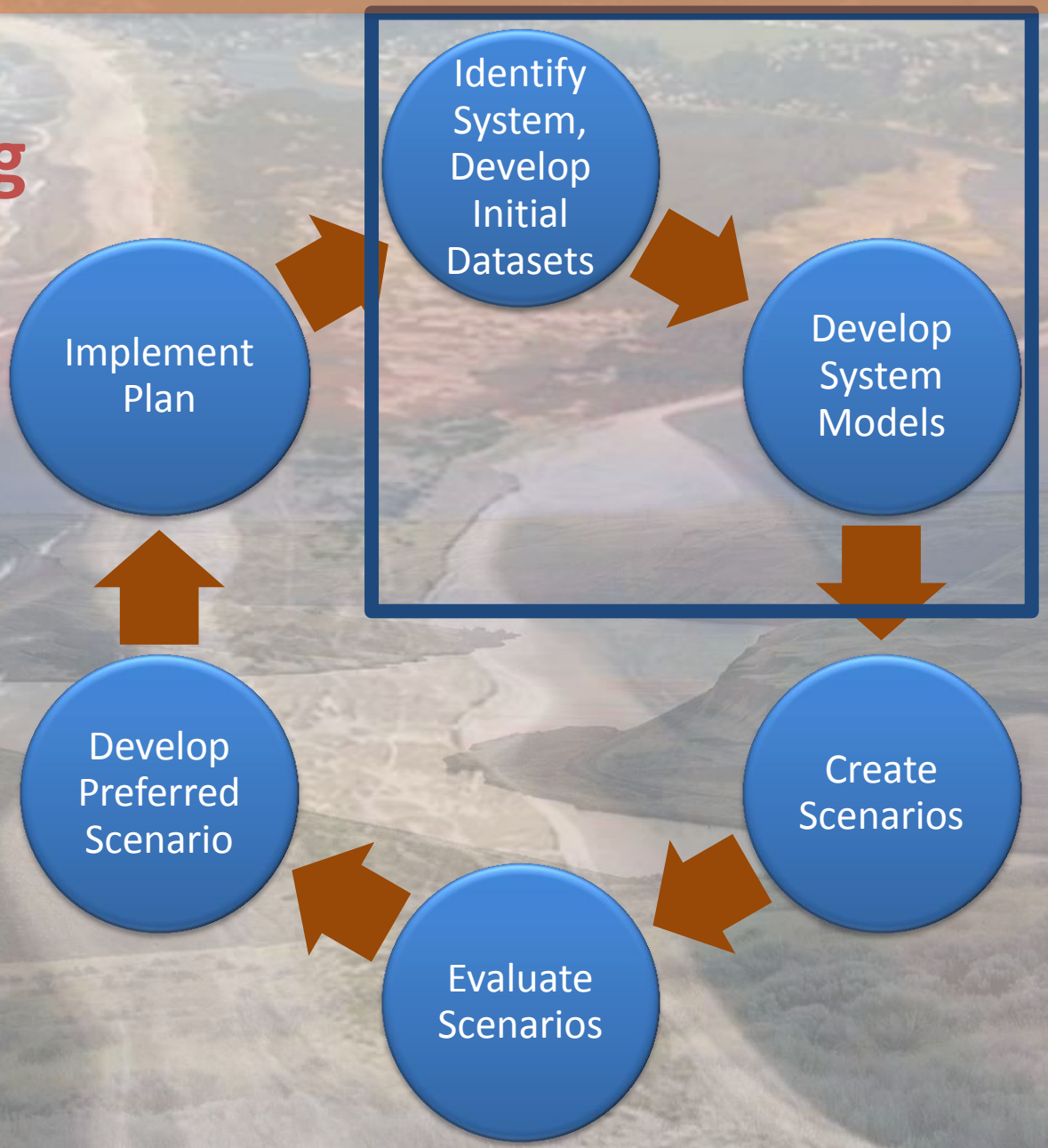
Erosion
- Structures & Infrastructure Impacted
- Economic Value of Structures Impacted

- Residential Land Supply
- Economic Costs/Returns
- Economic Development

Scenario Planning Process

June 2013 Workshop

Project kickoff meeting



Tillamook County Coastal Futures Project

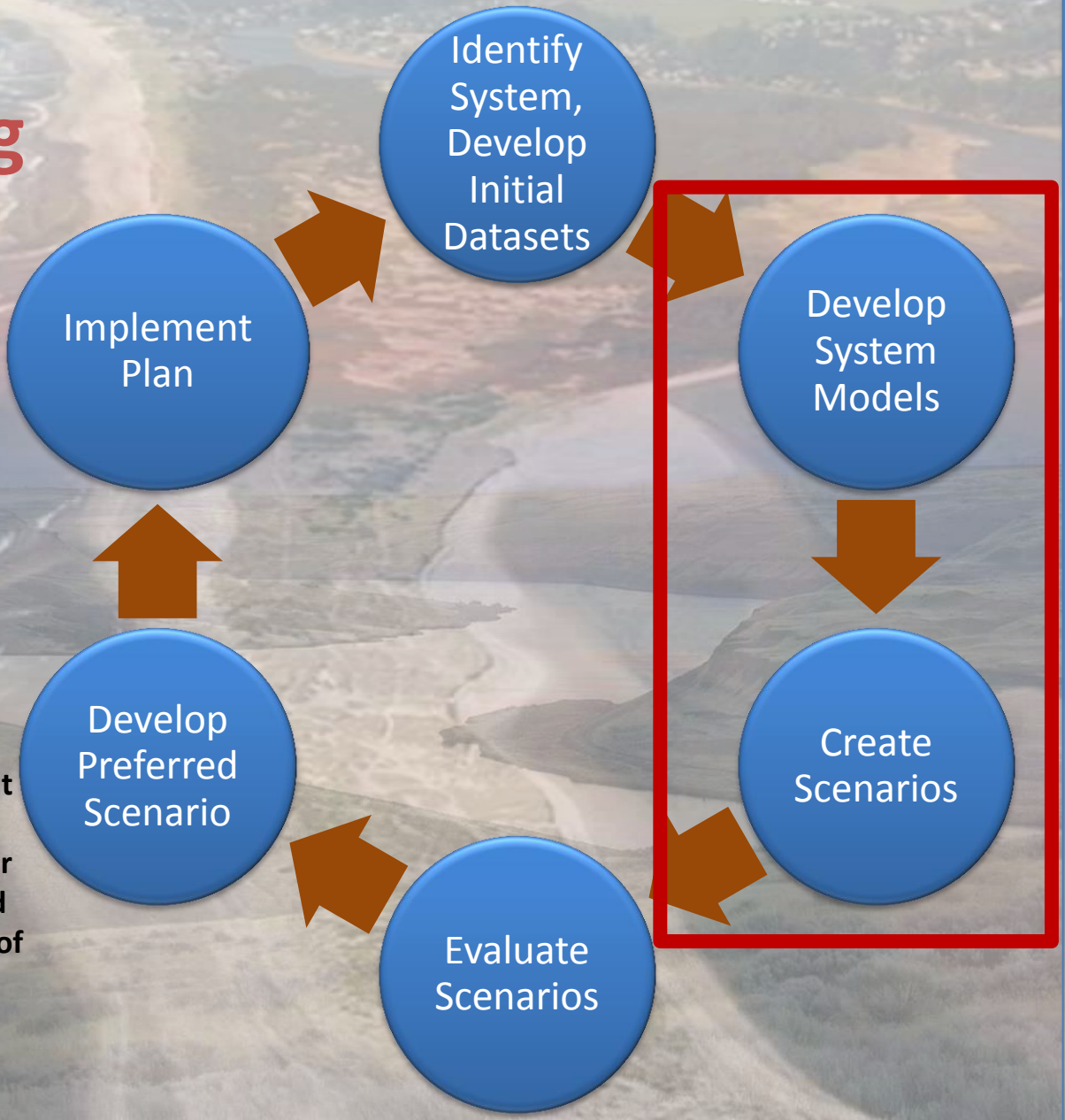
Scenario Planning Process

October 2013 Workshop

Scenario development meeting

"Scenarios do not predict future changes, but describe future potential conditions in a manner that supports decision-making under conditions of uncertainty. Scenarios are used to develop and test decisions under a range of plausible futures."

- from the National Climate Assessment SLR report (Parris et al., 2012)



Policy Scenario Narratives

Scenario 1: Status Quo

In a status quo scenario, current laws, goals, and trends are continued into the future for comparison with other scenarios.

Policies Applied
• Maintain current BPS and allow more BPS to be built on eligible lots. • Urban growth boundaries (UGB) will be determined in accordance with the present-day UGB policy.

Policy Scenario Narratives

Scenario 2: Hold the Line

Policies or decisions are implemented that involve *resisting* environmental change (e.g. building or raising flood defences, building or strengthening shoreline armour, nourishing beaches) in order to preserve existing infrastructure and human activities (e.g. beach access).

Policies Applied
• Maintain current BPS and allow more BPS to be built on eligible lots. • Add beach nourishment for locations where beach access in front of BPS has been lost (e.g., due to beach width reduction or frequent flooding). • New homes or developments would be built only on lots with Goal 18 BPS eligibility. • Homes must be constructed above a predetermined threshold elevation and in the safest site on each respective lot. • Property disclosure laws at the point of sale.

Policy Scenario Narratives

Scenario 3: ReAlign

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

Policies Applied
• No additional properties are allowed to construct BPS. • Coastal hazard zones are implemented and further development within hazard zones is restricted. • Currently empty lots located outside of coastal hazard areas are inventoried and re-zoned to permit future development. • UGB will be determined in accordance with the present-day UGB policy but with restrictions of development in hazard zones. • Repetitive repairs are prohibited and limits on the number of times a building may be impacted by coastal events before it has to be removed are put into place. • Establish conservation, open space, or recreation uses within the coastal hazard zones, via buyouts and rolling easements. • Homes must be constructed above a predetermined threshold and in the safest site on each respective lot. • Property disclosure laws at the point of sale.

Policy Scenario Narratives

Scenario 4: Laissez-faire

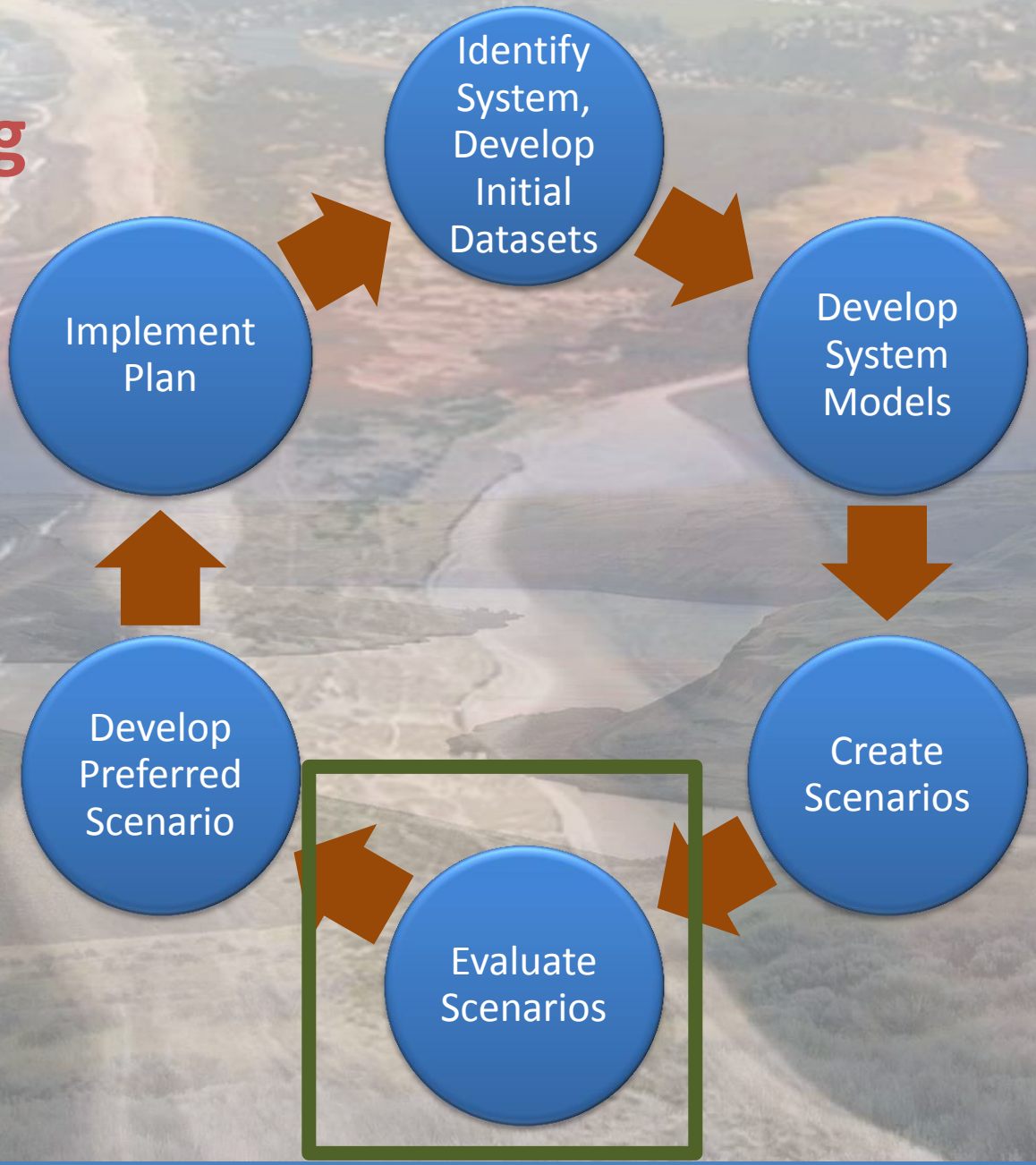
Current policies (state and county) are *relaxed* such that existing homes, infrastructure and new development all trump the protection of coastal resources, public rights, recreational use, beach access, scenic views.

Policies Applied
• Development is permitted outside the UGB, allowing towns to grow wherever residential land is available. • Provisions of Goal 18 that limit BPS eligibility and OPRD permit requirements to construct BPS are eliminated, and all citizens are allowed to construct and maintain BPS as they see fit.

Scenario Planning Process

June 2014 Workshop

Scenario review and initial results meeting



Tillamook County Coastal Futures Project

Tillamook County Coastal Futures Project:

Responses to Comments During the

Scenario Review and Initial Results Meeting

04 June 2014 (1:00 pm – 4:00 pm)
Tillamook County Library (Hatfield Room)

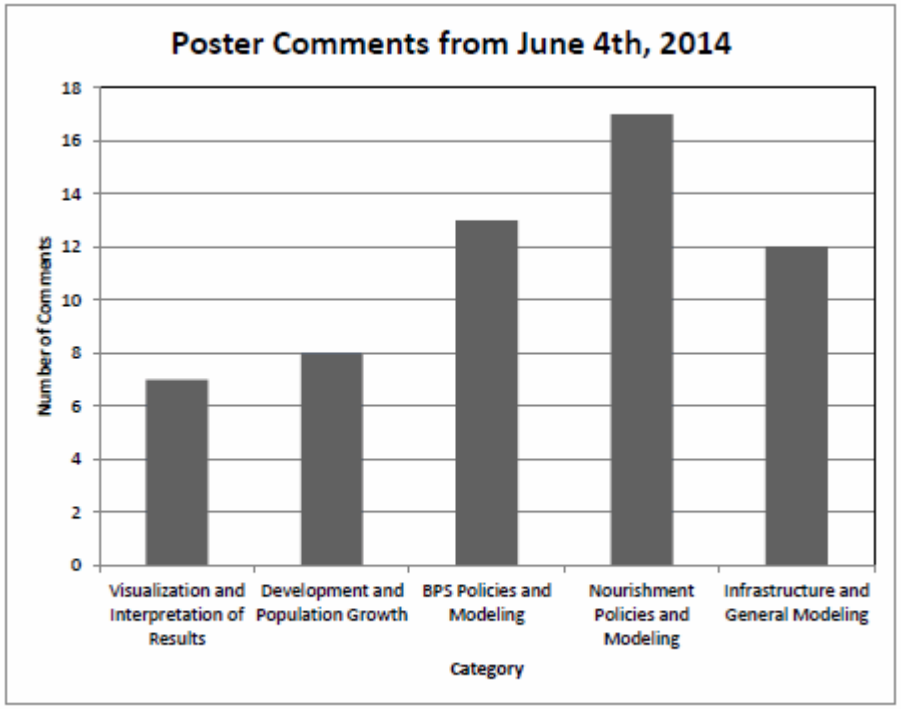


Figure 1. Summary of poster comments by category

Tillamook County Coastal Futures Project

Green (*) : The comment has already been addressed or is very simple to address.
Orange (**) : The comment will take some time to address, but will be done by the next meeting in the fall.
Red (***) : The comment is more difficult to address and will not be completed by the meeting in the fall.
Purple (****) : The group is unsure of the comment's meaning. Any clarification by the writer would be greatly appreciated.

Visualization and Interpretation of Results (VIR)	Development and Population Growth (DPG)	BPS Policies and Modeling (BPM)	Nourishment Policies and Modeling (NPM)	Infrastructure and General Modeling (IGM)
VIR1. Assumption that nobody is colorblind. **Response: We will use symbols as well as colors for future presentations. ***	**DPG1.** What are non-UGBs that are functionally similar eg. Pacific City? What about community growth boundaries (CGB)? **Response: These were grouped into UGB's for this meeting. Going forward they will be separated. ***	**BPM1.** What are the high maintenance costs areas along the coast? Hotspots? **Response: Maintenance costs for this meeting were assumed to be 10% of the initial cost of putting in a BPS every year. The majority of repairs happen in Neskowin. A more accurate maintenance cost for Tillamook County may be significantly lower according to Tony Stein of ORSPRD (approximately 1% annually of the initial cost). ****	**NPM1.** Recent studies of coastal ecological restoration show a huge return on investment. With ReAlign strategies coupled with local restoration jobs, one could predict that enhanced recreation through wildlife viewing, etc would provide and enhance local economic contributions. **Response: Quantification of economic contributions due to enhanced recreation is beyond the scope of this project. However, another recently funded project seeks to begin to answer some of these questions. Further information about this new project is available by contacting the project PIs. *****	**IGM1.** Take into account sewer/infrastructure to accommodate new growth **Response: The costs associated with constructing infrastructure to accommodate growth can be examined within the model, however, allocating infrastructure such as sewers and water lines in a spatially explicit manner is beyond the scope of this project. *****
VIR2. Language – Beachfront Protection Structures – LAW **Response: While Goal 18 refers to them as 'Beachfront Protection Structures', we feel that the term 'Backshore Protection Structures' is a more representative description. ***	**DPG2.** Using High hazard zone questions – not high enough. **Response: There are a range of hazard zones available for use in this effort. In the future we will examine the influence of various hazard zones, including probabilistic hazard zones. ***	**BPM2.** Using individual lots masks the "system" integrity of the BPS relation to the stretch of beach. Gaps in BPS are not realistic. BPS is not an individual decision (& costs), it is (should be) a community decision. BPS construction occurs in chunks (4-5 properties), not by individual property. Needs to be something around	**NPM2.** What is considered "acceptable" accessibility? Local vs. visitor? Assumption of 80% beach access is too low, we should be aiming for 100%, this is a public highway and Oregonians great birthright. Present information about beach accessibility seasonally instead of yearly. **Response: There were a number of comments during the June meeting in**	**IGM2.** Value the roads by infrastructure **Response: While it could be difficulty to put a monetary value on roads near public infrastructure, we may be able to assess the distance roads are from infrastructure such as sewers. *****

Policy Scenario Narratives

Scenario 5: *Neskowin*

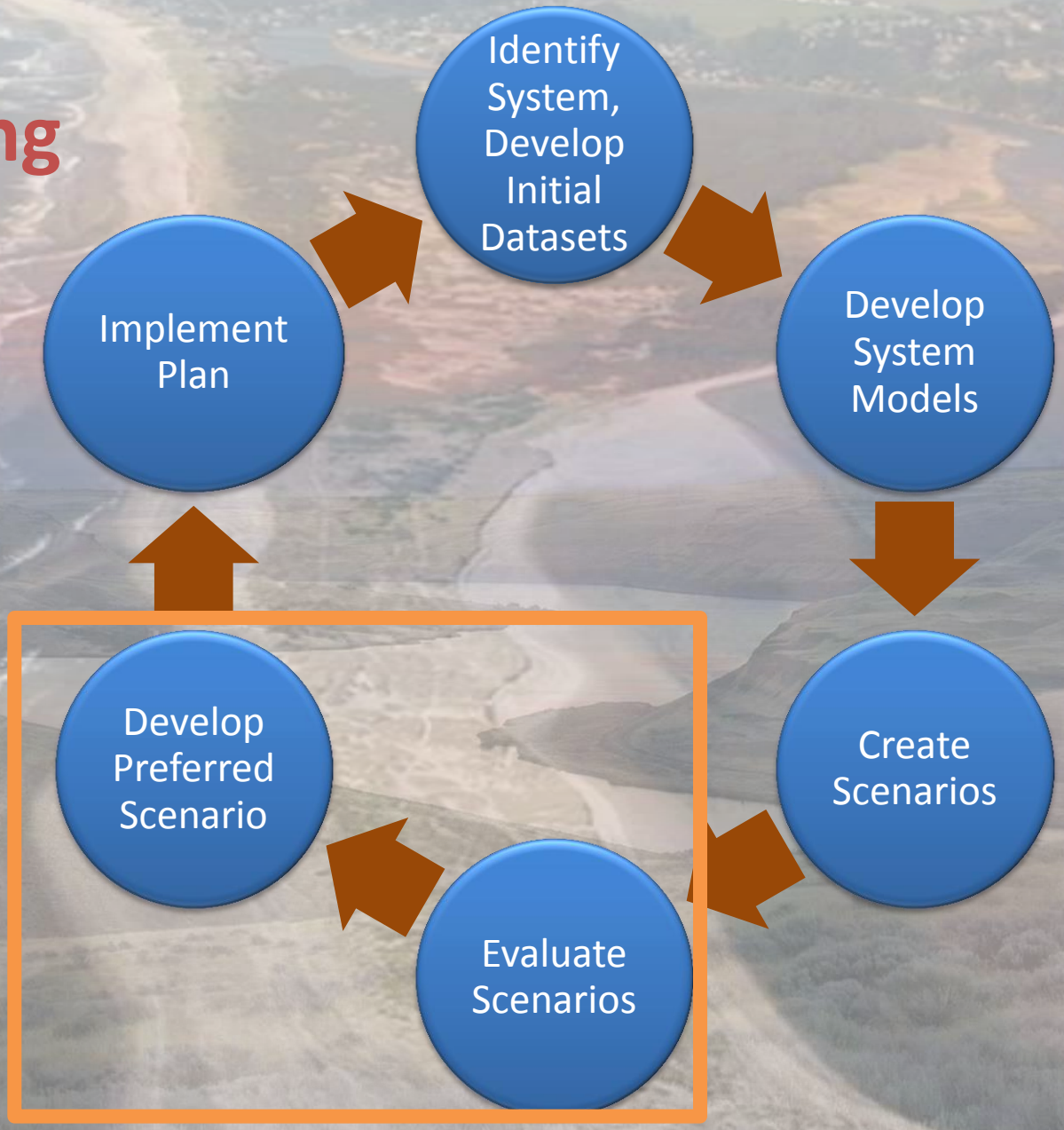
Policies or decisions are implemented in accordance with the Neskowin Adaptation Plan that involves both *resisting* environmental change (e.g. building or maintaining flood defenses) and *changing* human activities (e.g. adapting coastal hazard overlay zones).

Policies Applied
• Maintain current BPS and allow more BPS to be built on eligible lots. • Homes must be constructed above a predetermined threshold elevation and in the safest site on each respective lot. (Safest site) • General improvements with costs estimated to be greater than 50% of the real market value will be considered "new" construction and be subject to the requirements of the hazard zone permits including a geologic report, hazard zone permit, structural adaptations, setbacks, and runoff and drainage control. (Buildings Relocation) • Land Division Standards – adhere to several standards including creation of parcels with building "safe" sites outside of the hazard zone, and prohibiting accessory dwelling unit or multiple-family dwelling construction on developed parcels within the hazard zone. (Hazard zone density restriction)

Scenario Planning Process

December 2014 Workshop

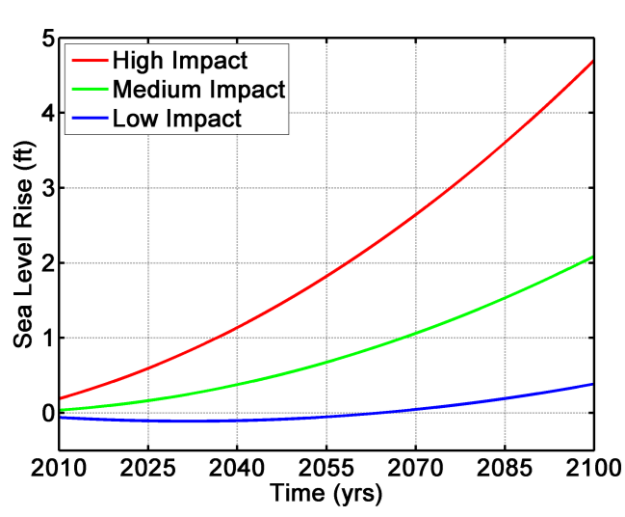
Policy choices and consequences workshop

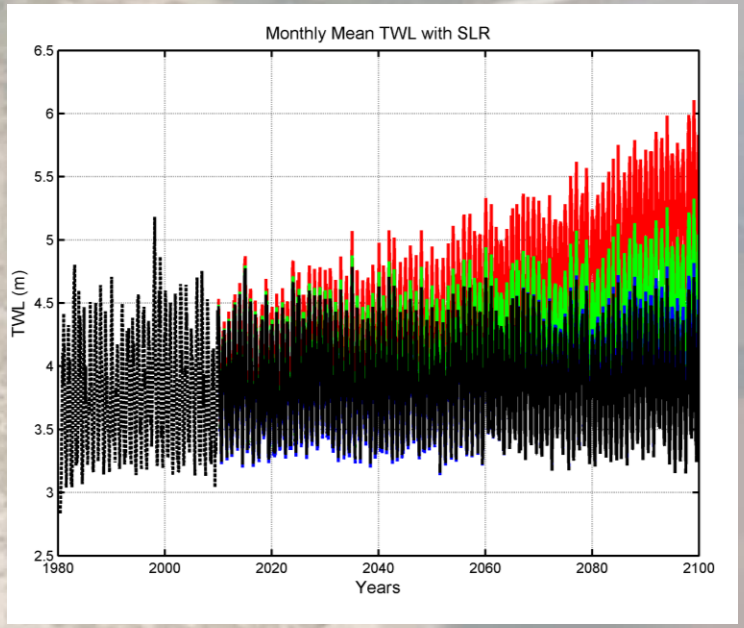


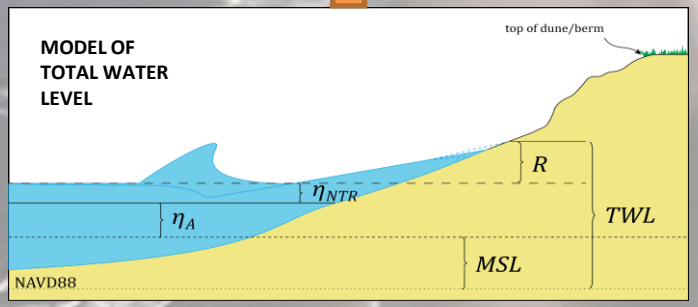
Tillamook County Coastal Futures Project

Project Objective:

Develop an integrated methodology for projecting the probability of coastal flooding and erosion over time, explicitly accounting for climate controls relevant to coastal hazards.







National Research Council (NRC) (2012), Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future. Committee on Sea Level Rise in California, Oregon, and Washington; Board on Earth Sciences and Resources; Ocean Studies Board; Division on Earth and Life Studies.

Serafin, K. and Ruggiero, P., submitted April 2014. Simulating extreme total water level events using a time-dependent, extreme value approach, Journal of Geophysical Research – Oceans.

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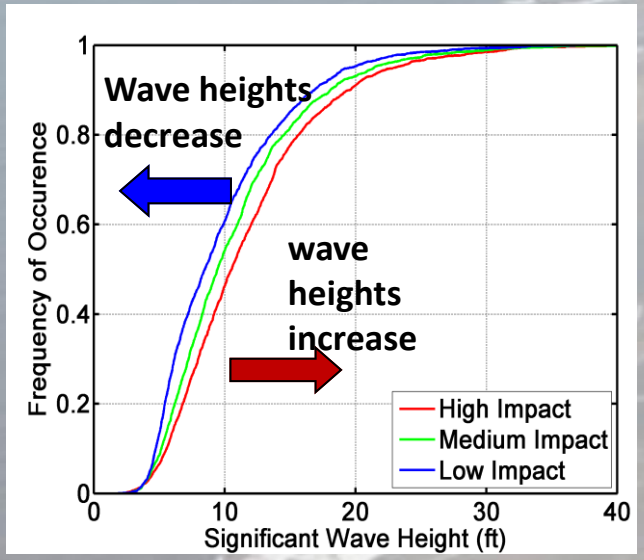

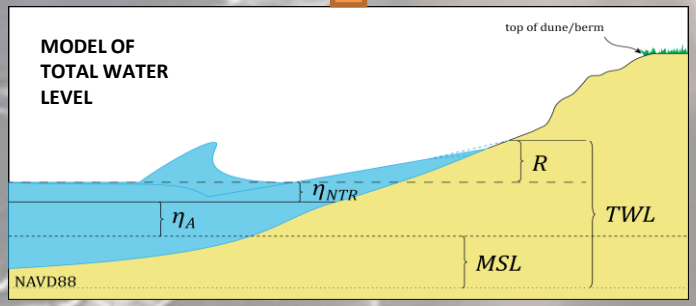

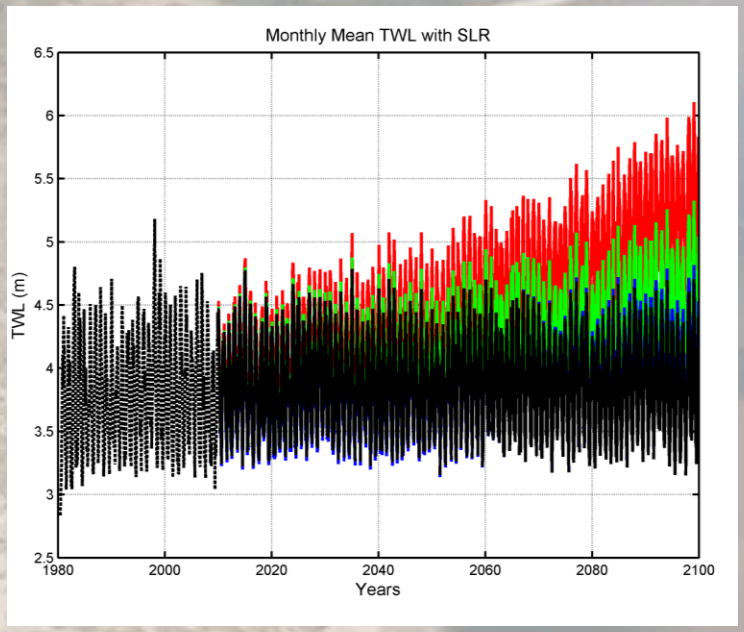

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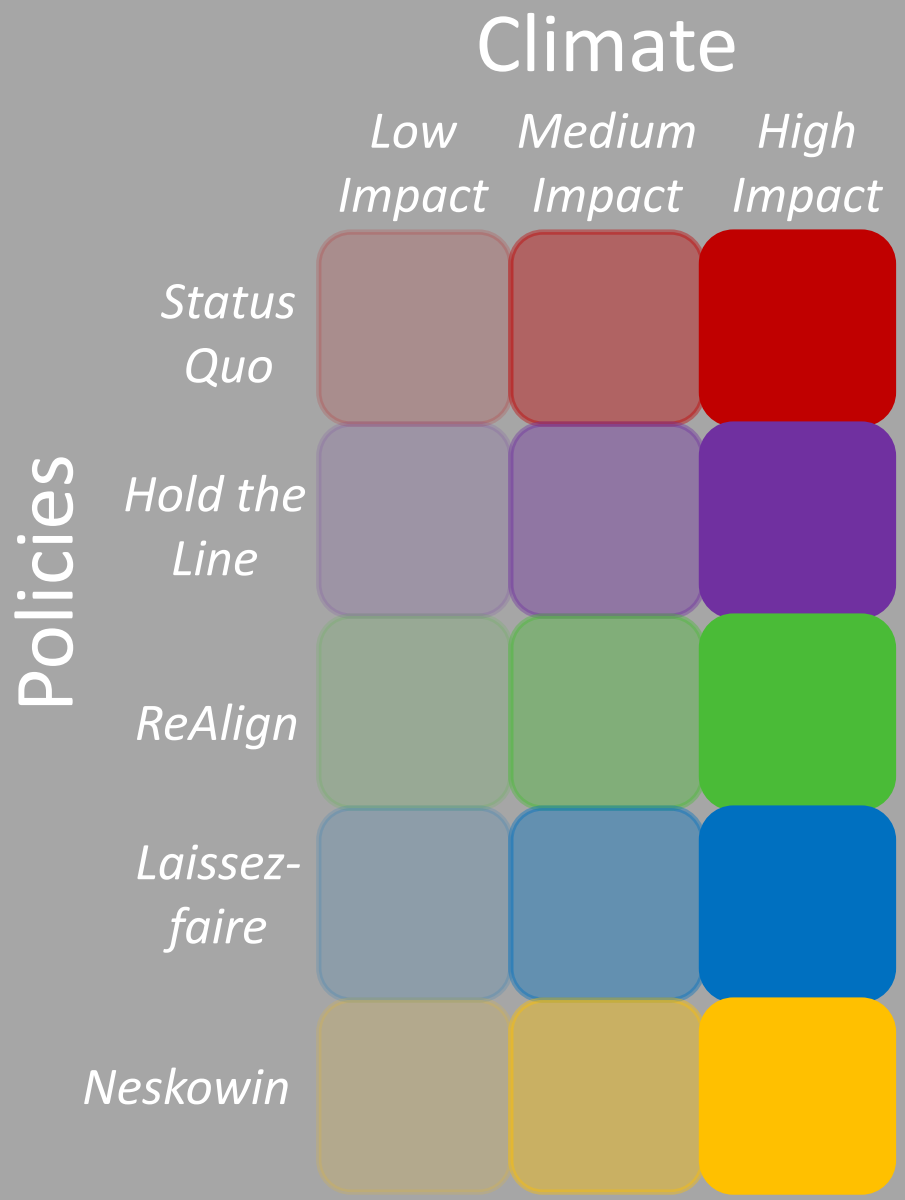
Climate Impact Scenario Narratives

Low: Uses National Research Council (NRC, 2012) derived low-end estimates of regional sea level rise (SLR) of ~5 inches by 2100. This scenario randomizes future climate variability by allowing the range of the frequency of major El Niño events to increase and decrease by 2 and 1/2, respectively. The average significant wave height (SWH) can decrease and increase by 1 foot by 2100.

Medium: Uses National Research Council (NRC, 2012) derived mean estimates of SLR of ~2 feet by 2100. This scenario randomizes future climate variability by allowing the range of the frequency of major El Niño events to increase and decrease by 2 and 1/2, respectively. The average SWH can decrease and increase by 1 foot by 2100.

High: Uses National Research Council (NRC, 2012) derived high-end estimates of regional SLR of ~4.5 feet by 2100. This scenario randomizes future climate variability by allowing the range of the frequency of major El Niño events to increase and decrease by 2 and 1/2, respectively. The average SWH can decrease and increase by 1 foot by 2100.

Tillamook County Coastal Futures Project



Policy Scenario Narratives

Scenario 6, 7, … :

A *Preferred Scenario(s)* that combines a range of policies from the other scenarios.

Policies Applied
• ??
• ??

"Scenarios do not predict future changes, but describe future potential conditions in a manner that supports decision-making under conditions of uncertainty. Scenarios are used to develop and test decisions under a range of plausible futures."

- from the National Climate Assessment SLR report (Parris et al., 2012)