



# **POLICY SCENARIO NARRATIVES**



## Scenario 1: Baseline

**Continuation of present day policies. Adaptive** 

## Scenario 2: Realign

**Policies or decisions are implemented that involve** changing human activities to suit the changing people).

### Scenario 3: Restore

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

Scenario 4: Protect **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).

Backshore Protection Structure (BPS) - A structure, such as a rock revetment, built to control erosion by armoring the dune face. These structures dissipate wave energy and prevent further recession of the backshore. Dune Restoration Project (DRP) - A constructed dune that is built to be a natural barrier to the destructive forces of waves and high water levels, and to help control erosion and damage to inland structures. DRPs are examples of natural or nature-based (green) infrastructure. Erosion - A general term applied to the wearing away and movement of earth materials, in this case sand and sediment, by gravity, wind, water, and ice.

Flooding - An overflow of water onto lands that are normally above sea level. Flooding can be produced by storm surge, sea level rise, and the effects of climatological phenomena such as the El Niño Southern Oscillation (ENSO). Scenario Narratives - 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.

## **GRAYS HARBOR COUNTY COASTAL FUTURES PROJECT: SCENARIO REVIEW MEETING**

## **DRAFT** SCENARIO NARRATIVES



Sea Level Rise (SLR) - Increases in the height of mean sea surface elevation. In this application, SLR will take regional factors (e.g., vertical land motions, ocean dynamics, and cryosphere and fingerprinting effects) affecting sea level in Washington into account. **Significant Wave Height (SWH)** - A statistical measure of wave height, related to the average of the 1/3 highest waves. This measurement was intended to express the wave height estimated by a "trained observer." **Total Water Level (TWL)** - The combination of the water level (tides and non-tidal residuals) with waves. In Washington, the waveinduced component can account for as much as 60% of the elevation of the total water level (Serafin and Ruggiero 2014).

#### REFERENCES

Hemer, M. A., Fan, Y., Mori, N., Semedo, A., and X.L. Wang (2013), Projected changes in wave climate from a multi-model ensemble. Nature Climate Change, 3(5), 471-476. National Research Council (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: Past, Present, and Future. Committee on Sea Level Rise in California, Oregon, and Washington: Past, Present, and Future. Committee on Sea Level Rise in California, Oregon, and Washington: Past, Present, and Future. Resources; Ocean Studies Board; Division on Earth and Life Studies.

Serafin, K.A. and Ruggiero, P. 2014. Simulating extreme total water levels using a time-dependent, extreme value approach. Journal of Geophysical Research: Oceans, Volume 119 (9), pp. 6305-6329. Wang, X. L., Feng, Y., and V. Swail (2014), Changes in global ocean wave heights as projected using multi-model CMIP5 simulations. Geophysical Research Letters.



# **CLIMATE IMPACT SCENARIO NARRATIVES**

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## Scenario 1: Low Impact

A low impact climate scenario uses low-end projections of SLR.

### Scenario 2: *Medium Impact*

A medium impact climate scenario uses mid-range projections of SLR.

## Scenario 3: *High Impact*

A high impact climate scenario uses high-end projections of SLR.

### Climate Variability:

All climate impact scenarios have the ability to randomize future climate variability by allowing changes in storminess (e.g., increasing or decreasing average and extreme wave heights) and/or allowing the frequency of major El Niño events to increase or decrease.