Maximum scenario is selected as the worst case distant tsunami event. When these events occur, they can cause significant damage in Oregon (Figure 2). Distant earthquake/tsunami events have not caused damage in Oregon did not occur along the ocean front as one example.

The "Ring of Fire", also called the Circum-Pacific belt, is the zone of active earthquakes and volcanic activity surrounding the Pacific Ocean. It is an arc that stretches from New Zealand, along the eastern edge of Asia, north to Alaska, and south to Chile. This area is known for its high seismic activity due to the movement of tectonic plates. One type of plate is oceanic, which is thin and dense, and sits on top of the asthenosphere, a layer of the Earth's mantle that is partially molten and can flow slowly. Oceanic plates move on top of the asthenosphere, and when they collide, they create a subduction zone. Subduction zones often release energy through earthquakes and can generate tsunamis.

The Alaska-Aleutian Model Specifications include the Alaska M9.2 (1964) and the Alaska Maximum tsunami scenarios. All tsunami simulations are based on the results of previous studies and are used to assess the potential impact of tsunamis on the Oregon coast. These profiles depict the expected maximum tsunami wave elevation for the two Alaska tsunami scenarios: Alaska M9.2 (1964) and the Alaska Maximum. All tsunami simulations are generated using different models representing the two selected tsunami scenarios: Alaska M9.2 (1964) and the Alaska Maximum. These profiles are used to assess the potential impact of tsunamis on the Oregon coast and to inform emergency preparedness and response planning.

The Prince William Sound earthquake, which occurred in 1964, was the largest earthquake in the United States. It had a magnitude of 9.2 and caused significant damage along the Pacific coast. This earthquake generated a tsunami that traveled across the Pacific Ocean, causing damage in Japan, the Philippines, and other parts of the Pacific rim. The actual initial tsunami arrival time was recorded by tide gauges in Cuba and Hawaii, and the tsunami wave heights varied through time, with the first wave not necessarily being the largest as waves interfere and reflect off local topography and bathymetry.

Figure 4: This chart depicts the tsunami waves as they arrive at the selected reference point (simulated gauge station). It shows the change in water level over time and the transition from wet to dry points. These points are converted to wet and dry points, and the contour lines that form the extent of inundation. The transition from wet to dry points is shown, and the overall wave height and inundation extent for the two tsunami scenarios are depicted.