



## **FAQ: King Tides**

### **Impacts in the Duwamish Valley**

#### **What is a King Tide?**

A King Tide is an extreme high tide. It is the highest predicted high tide of the year at a coastal location, this includes the Duwamish River Valley.

King Tides bring unusually high water levels, and they can cause local tidal flooding. It is above the highest water level reached at high tide on an average day.

King tides occur 1-2 times a year and can be predicted.

A King Tide may cause the river to overflow its banks, get very high and in extreme cases cause a surge of water from the river (2-3ft) into homes and neighborhoods streets, especially when King Tides occur during times of heavy rainfall, snow melt, high wind gusts, and atmospheric conditions (or low barometric pressure\*).

*\*Atmospheric conditions: When King Tides are combined with other factors, like strong onshore winds or barometric pressure changes from a coastal storm – tides can be higher than predicted. This is because barometric pressure, or pressure of the air, can influence the level of water beyond what is initially predicted. A low barometer will allow the sea level to rise and a high barometer will tend to depress it. Therefore the combination of wind and low barometric pressure can influence a storm surge.*

#### **What are tides?**

Tides are like the breath of the water, inhales and exhales. Tides cause the rise and fall of water.

Tides are long-period waves that roll around the planet as the ocean is "pulled" back and forth by the gravitational pull of the moon and the sun as these bodies interact with the Earth in their monthly and yearly orbits.

## **What happened during the December 27 King Tide?**

On the morning of December 27, a King Tide tidally influenced the Duwamish River, causing the river to overtop its banks and flood numerous homes and businesses in Seattle's South Park neighborhood.

While the King Tide was predicted, the region was also faced with recent ice melt, a winter storm bringing heavy precipitation, and low barometric pressure, causing the storm surge which led to great damages to households in South Park.

More than 30 families have been impacted on S. Kenyon St. and S. Chicago St. in South Park.

More than 13 families have been relocated to local hotels. The majority of these families speak English as a second language (Khmer and Spanish). These efforts have been coordinated with Seattle Public Utilities.

## **What about Climate Change and Sea Level Rise?**

Sea level rise will make today's King Tides become the future's everyday tides.

King Tides provide a glimpse of future everyday water levels, and they are a way to communicate local sea level rise impacts over long time periods.

While efforts such as a Resilience District/hub are in early brainstorm stages –the flooding event on 12/27/2022 happened 25 years earlier than expected.

Low-lying shoreline development is at increased risk of flooding because of rising seas, and public investments in infrastructure, housing, and habitat restoration projects are often expected to last for decades.

In the face of climate change, last month's events are becoming the norm, and should be expected again.

Over time, sea level rise is raising the height of tidal systems. Average daily water levels are rising along with the oceans. As a result, high tides are reaching higher and extending further inland than in the past.

Working towards Climate justice means taking actions that ensure that no one is disproportionately impacted by events such as extreme rain, flooding, and sea level rise, and therefore emergency preparedness, recovery, and relief plans must be put in place to shield neighbors from damage and loss in these circumstances.

Sources:

EPA King Tide factsheet:

[https://www.epa.gov/sites/default/files/2014-04/documents/king\\_tides\\_factsheet.pdf](https://www.epa.gov/sites/default/files/2014-04/documents/king_tides_factsheet.pdf)