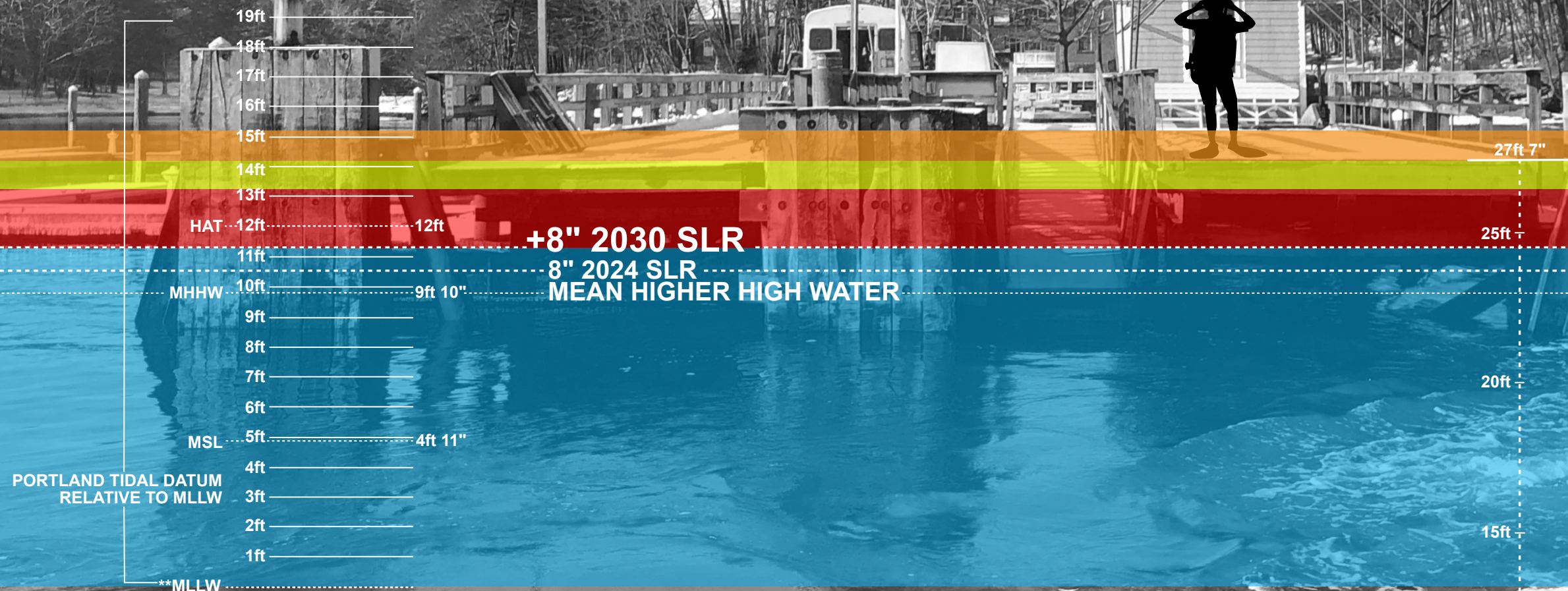


# 2030 SLR HIGH TIDE PROJECTIONS AT DIAMOND COVE PIER



## UNDERSTANDING SLR ON DAILY HIGH TIDES

This graphic illustrates how projected sea level rise (SLR) will influence the daily high tides in Diamond Cove. Although Portland's mean higher high water (MHHW) remains a fixed tidal datum of 9ft 10", sea levels are already about 8" higher. Adding the projected 2030 SLR of another 8" to Portland's MHHW shows how higher baseline water levels will cause future storm surges to reach higher elevations.

MHHW is the average height of the higher of the two daily high tides measured over a 19-year tidal cycle. Portland's current tidal datum is based on observations collected from 1983–2001 and serves as the reference elevation used here for measuring tides and water levels.

The SLR projections below are based on Portland and South Portland's One Climate Future recommendations and guidance from the MGS and Maine Climate Council.

| YEAR | SLR   |
|------|-------|
| 2030 | +8"   |
| 2050 | +1.5' |
| 2070 | +2.4' |
| 2100 | +4'   |

| STORM AND SURGE TIDAL STATS<br>FROM 1912-2023 (MGS) |                  |                 |
|-----------------------------------------------------|------------------|-----------------|
| frequency                                           | storm surge (ft) | storm tide (ft) |
| every year                                          | 2                | 11.7            |
| every 5 years                                       | 2.9              | 12.6            |
| every 10 years                                      | 3.3              | 12.9            |
| every 25-100 yrs                                    | +4               | 13.4-14.1       |

TIDAL STATS DO NOT INCLUDE WAVE HEIGHT OR SWELLS. TYPICAL WAVE HEIGHTS IN CASCO BAY RANGE FROM 1-3 FEET.

## SOURCE LINKS:

[2019 ONE CLIMATE FUTURE: PORTLAND MGS SEA RISE TICKER](#)  
[PORTLAND TIDAL STATION 8418150](#)  
[NOAA 2022 SLR TECHNICAL REPORT](#)

\*\*MLLW (mean lower low water) is the reference vertical tidal datum used for predictions, surveying, benchmark publications and nautical charting. The National Weather Service uses MLLW as a reference for its water level forecasts and for SLR projections.



SEVERE STORM SURGE +4-4.7ft  
5-10 YEAR STORM SURGE +3ft  
ANNUAL STORM SURGE +2ft  
MEAN HIGHER HIGH WATER



This image shows conditions during a storm tide of 13ft 8" and a predicted tide of 10ft. It is a good example of how rising base sea levels will amplify future flooding at the pier. With 8" of sea level rise, annual storms occurring during typical high tides will produce water levels and flooding impacts similar to this storm.

[Link to the January, 10, 2024 winter storm graphic to review this storm's profile.](#)

TIDAL DATUM, TIDE HEIGHT AND DOCK TO SCALE