

DIY Sea Level Stick

Teresa Crean, AICP
University of Rhode Island Coastal
Resources Center
Rhode Island Sea Grant
January 2019



MATERIALS:

- 6-foot wooden post, 1.5x1.5 inches (square or round)
- painters tape
- Heavy body acrylic paint
 - Titanium White
 - Ultramarine Blue
- 6 Dixie cups
- Paint brush
- Paint pens or sharpies
- Spray acrylic paint sealant

For the sea level estimates:

Army Corps Sea Level Change Curve Calculator

http://corpsmapu.usace.army.mil/rccinfo/slc/slcc_calc.html

Call up the site and scroll down the page; you'll select from 2 drop-down menus to identify your tide gauge of choice & sea level scenario source.

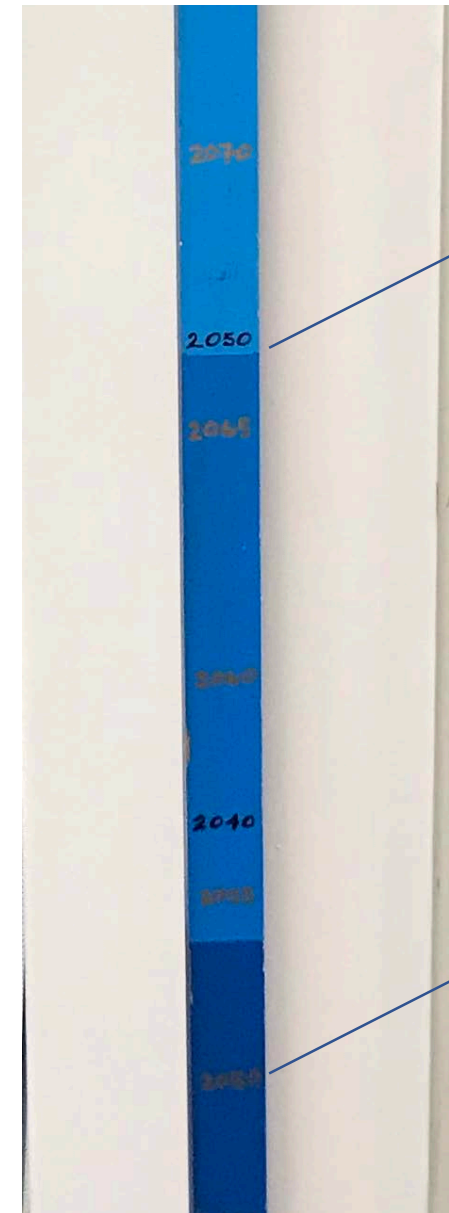
Example:

Select gauge: Newport, RI

Scenario source: NOAA et al, 2017

Scroll down on the site to view the graph and table generated for the tide gauge you chose with the scenario source illustrated on the graph & table outputs. You can choose to draw grid points and also a "66 percent confidence band" around the Scenario of interest.

NOTE: In Rhode Island, state law references the NOAA et al 2017 "High Curve" – written in Black Sharpie in the photo shown to the right. The gold paint numbers indicate the NOAA et al 2012 High Curve numbers – this is a good way to talk about uncertainty in estimating SLR, and how the "best available science" is changing the way we look at potential for SLR. The 2050 scenario alone increased from 1.9 feet as of 2012, to 3 feet as of 2017!



2050 estimate from
NOAA et al 2017
High Curve

2050 estimate from
NOAA et al 2012
High Curve

USACE Sea Level Change Curve Calculator (2017.55)

Project Name:

Select Gauge: PSMSL

Scenarios Source:

Output Units: Feet Meters

Output Datum: LMSL NAVD88

Critical Elevation #1 (ft) : NAVD88 - Description:

Critical Elevation #2 (ft) : NAVD88 - Description:

NOAA et al. 2017 options

Show Grid Points

Show USACE 2013 Curves

Show 2100 to 2200

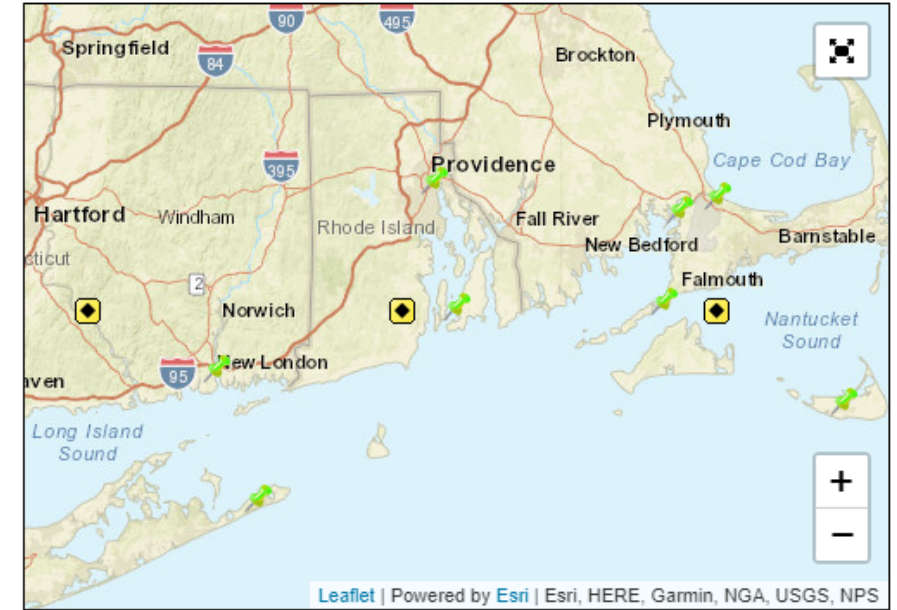
Adjust to MSL(83-01) Datum: ? adjustment to MSL Datum: 0.106 feet applied

Lines Type: None Interpolated Polynomial Trend

Point Shape: Circle Square Triangle

Vertical Land Movement (ft/yr) :

Plot 66 Percentile Confidence Band:



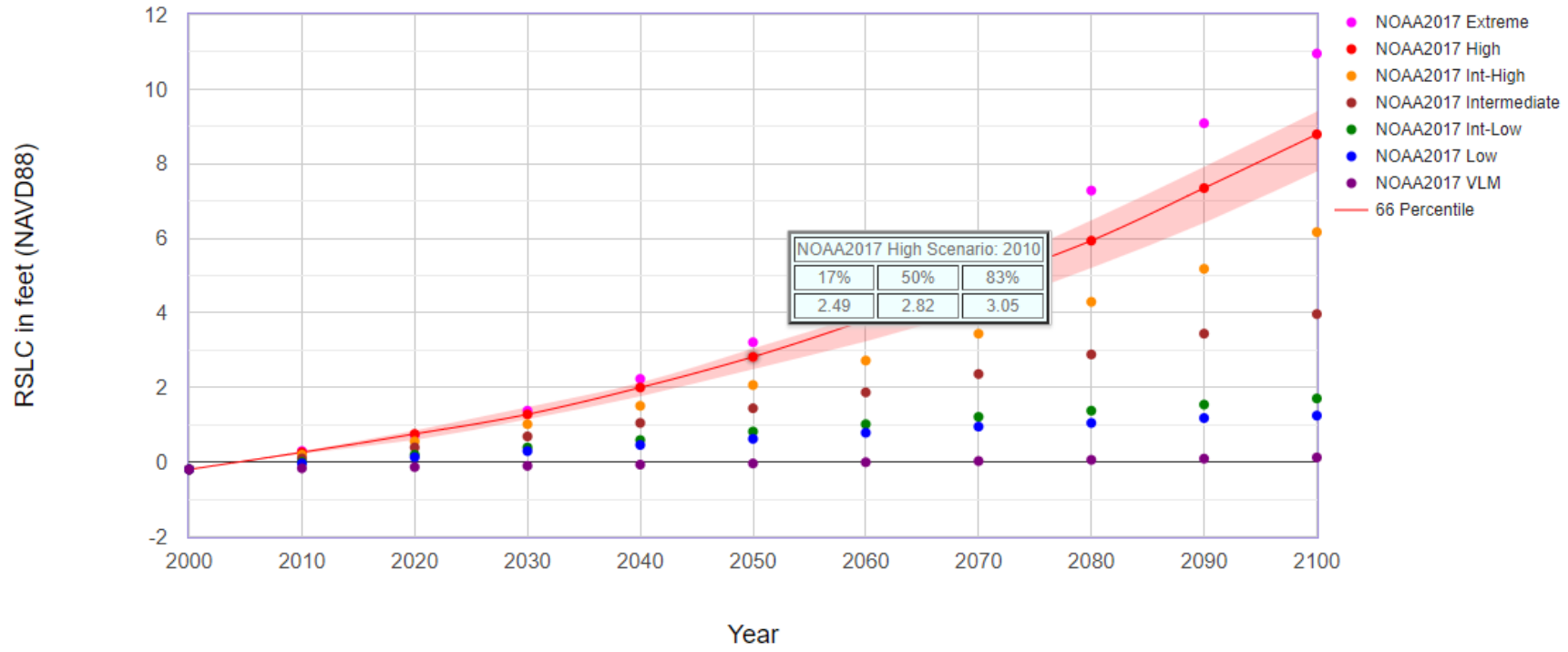
Click on project area. The nearest gauge/grid point will be used to develop RSLC curves based on the selected Scenario Source

Clicked 0 miles from closest gauge: NEWPORT
*** note - there may be factors other than proximity to consider when selecting a gauge ***

- Compliant
- Non-Compliant
- Inactive

Gauge/Grid Selected: NEWPORT
NOAA2017 VLM: 0.00322 feet/yr
Adjustment to MSL(83-01) Datum: 0.106 feet applied
Adjustment to NAVD88 Datum: -0.31 feet applied
66 Percentile Confidence Range for the High Scenario is shown
All values expressed in feet

NOAA et al. 2017 Relative Sea Level Change Scenarios for : NEWPORT



Scenarios for NEWPORT
 NOAA2017 VLM: 0.00322 feet/yr
 All values are expressed in feet

Year	NOAA2017 VLM	NOAA2017 Low	NOAA2017 Int-Low	NOAA2017 Intermediate	NOAA2017 Int-High	NOAA2017 High	NOAA2017 Extreme
2000	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20
2010	-0.17	-0.04	-0.00	0.10	0.19	0.26	0.29
2020	-0.14	0.13	0.19	0.39	0.55	0.75	0.72
2030	-0.10	0.29	0.39	0.69	1.01	1.28	1.38
2040	-0.07	0.46	0.59	1.05	1.51	2.00	2.23
2050	-0.04	0.62	0.82	1.44	2.06	2.82	3.21
2060	-0.01	0.78	1.01	1.87	2.72	3.80	4.43
2070	0.03	0.95	1.21	2.36	3.44	4.82	5.80
2080	0.06	1.05	1.38	2.88	4.30	5.94	7.28
2090	0.09	1.18	1.54	3.44	5.18	7.35	9.09
2100	0.12	1.24	1.70	3.97	6.17	8.79	10.96

1. Mark off 1-foot intervals with a pencil on each face of the stick, and connect the dots to draw a clean line at each one-foot marker
2. Use painters tape to create clean lines between each 1-ft increment of the 6-ft wooden stick. Place painters tape on the inside areas of Segment 2, Segment 4, and the Top segment, as you'll paint those segments last.
3. Mix the paint - Titanium White and Ultramarine Blue
To make the 6 shades of blue on the stick, mix the paint in your 6 dixie cups, mix the blue and white acrylic paint in the following proportions (a "blob" is whatever you need, just make sure each blob is about the same size):
Bottom segment: Cup 1- 6 blobs of blue, 0 white
Segment 2: Cup 2 - 5 blobs of blue, 1 blob of white
Segment 3: Cup 3 - 4 blue, 2 white
Segment 4: Cup 4 - 3 blue, 3 white
Segment 5: Cup 5 - 2 blue, 4 white
Top segment (lightest blue): Cup 6 - 1 blue, 5 white
4. Paint the stick in segments. Start with Bottom Segment, Segment 3 and Segment 5 - paint segments & let dry. Then remove painters tape and paint Segment 2, Segment 4, and Top Segment.
5. Once the paint is dry, use paint pens to write the projected sea level rise years on the stick. For example, selecting the Newport, RI Tide Gauge, NOAA et. al 2017 "high curve", the estimate is 3.05 feet (83% confidence interval – hover your mouse over the point on the graph to get the confidence interval if needed) of SLR is estimated for 2050, so write "2050" at the 3 foot mark on the stick. Write the years that will fit on the 6-foot stick. Its also helpful to put one-inch marks on the side of the stick for reference.
6. Once fully dry, spray stick with acrylic paint sealant.



Sea Level Stick in Rhode Island – engaging communities & students



FRIDAY, OCTOBER 12, 2018

EastBayRI

HOME OUR TOWNS NEWS SPORTS OBITS OPINION CALENDAR EAST BAY LIFE CLASSIFIEDS

Students study sea level rise in Barrington and Warren

Coastal impacts of climate change draws UPenn planning students to



Teresa Crean, a coastal community planner for Coastal Resources Center at the University of Rhode Island, shows how high sea level is expected to rise in the coming years. Ms. Crean worked closely with University of Pennsylvania students during their recent tour of Barrington and Warren.

PHOTOS BY RICHARD W. DIONNE JR.


Buy this photo

PBN ECONOMY INDUSTRIES PEOPLE COMMENTARY EVENTS LISTS PBN CONNECT SUBSCRIBE

\$24.99/MO with a 2 or 3-year agreement One Voice Line 30-DAY MONEY-BACK GUARANTEE SWITCH TODAY

Newport's The Point is ground zero in fight to keep historic Ocean State properties above water

By Mary MacDonald February 26, 2017 1:05 am



In one of the most historically intact neighborhoods in the United States, survival is measured in inches and feet. The front line of the neighborhood...

Free Newsletters, Free Download. Sign up for any of our daily, weekly or monthly newsletters in newsletters and get the download, PROVIDENCE BUSINESS JOURNAL: 36 OF THE BEST PLACES TO WORK IN RHODE ISLAND!

Upcoming PBN Events

- 2018 PBN Spring Health Care Summit April 4 @ 8:30 am - 11:00 am The role of Health Care in Business: a key issue for employers and employees.
- 2018 C-Suite Awards Program



Sea Level Stick on the road – Vinalhaven, Maine

