

An aerial photograph showing a coastal town with houses and streets, a large body of water, and a wide, flat wetland area with a winding stream. A semi-transparent teal box is overlaid on the middle of the image, containing white text.

Shoreline Adaptation Engagement Effort

Marina Village Workshop

February 28, 2024

5:30 pm - 7:00 pm

THE TOWN OF

Corte Madera

California

Team



Adam Wolff, Town Manager
Town of Cortes Madera



RJ Suokko, Director of Public Works
Town of Cortes Madera



Amy Lyle, Community Development
Director
Town of Cortes Madera



Phoebe Goulden, Climate Coordinator
Town of Cortes Madera



Dave Javid, Founder & Principal
Plan to Place



Rachael Sharkland, Sr. Engagement Specialist
Plan to Place



Quentin Freeman, Engagement Specialist
Plan to Place

Agenda

1. Welcome and Overview
2. Marina Village Vulnerabilities
3. Q&A and Discussion
4. Next Steps

Meeting Facilitation

If you have comments or questions, please drop them in the chat window. Once we move into breakout rooms, you will have the opportunity to ask questions using the “Raise Hand” function.



Chat

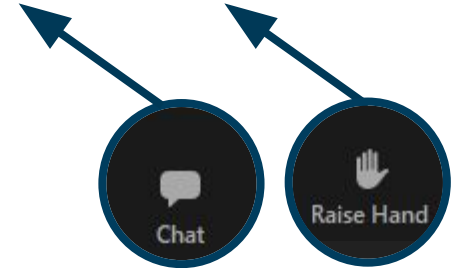
Share your thoughts in the chat window.

Raise Hand

virtually and you will be unmuted.

Phone

Dial *9 to raise your hand if you called in to this meeting.



Menti Poll

×

Join at menti.com | use code **3405 8018**

Corte Madera Shoreline Adaptation Workshop #1

Marina Village



Shoreline Adaptation Engagement Effort

Engagement Goals

- **Engage** with shoreline residents and stakeholders.
- **Share** up-to-date information about current and future flood vulnerabilities and the range of possible adaptation measures.
- **Listen** to the ideas, hopes, needs and concerns of shoreline neighborhoods and adjacent areas in the floodplain.
- **Develop** a community vision for next steps of shoreline adaptation effort in partnership with the community and Town Council.



Engagement Area

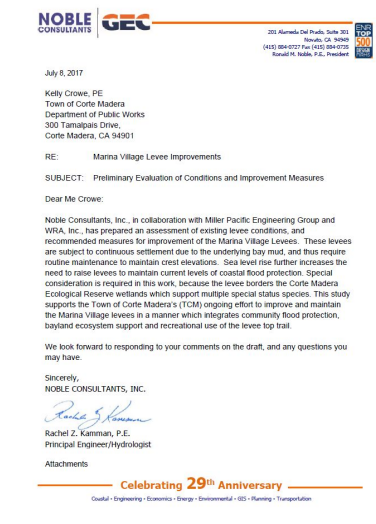
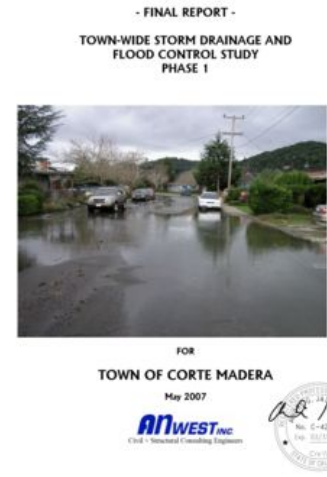
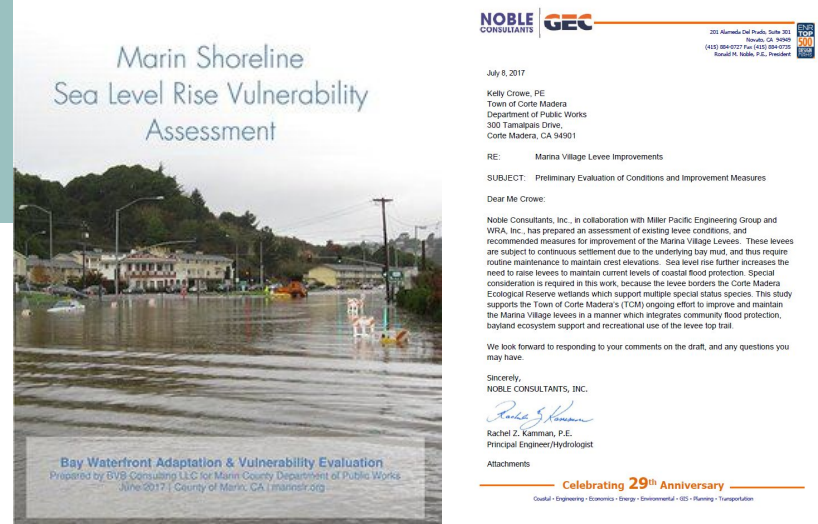


Floodplain including:

- Marina Village
- Mariner Cove
- Portion of Marin Estates
- Paradise Shopping Center
- Other Commercial Properties

Previous Work Includes:

- Town-Wide Storm Drainage and Flood Control Study (2007 - being updated currently)
- Marin Shoreline Sea Level Rise Vulnerability Assessment (BayWAVE, 2017)
- Marina Village Levee Study (2017)
- Corte Madera Climate Adaptation Assessment (2021)
 - Completed in 2021 through a 2.5 year process of research and engagement



Corte Madera Shoreline Adaptation Community Engagement Timeline

We are here



Climate Adaptation Assessment Published



Flood Board & Town Council Meetings



Community Survey



Stakeholder Meetings



Pop-Ups



Virtual Community Workshops

Engagement So Far



10.26.23 - 11.20.23 | Stakeholder Meetings



12.11.23 | Flood Board Meeting



1.10.24 | King Tide Pop Ups: Marina Village and Mariner Cove



2.28.24 | Marina Village Virtual Workshop



Feedback Heard at January 10th King Tide Pop Up



Concerns

- Existing flood experiences along San Clemente Creek, Channel Dr & Harbor
- Impact of built infrastructure on views & property values

Opportunities

- Support for the Town evaluating incremental flood protection measures, including maintenance of the existing berm & potential creation of new infrastructure
- Appreciation expressed for the Town's transparency and clear communication regarding options

Marina Village Vulnerabilities

Marina Village was built on filled marshland in the 1950s

Bay Mud Thickness (ft.)	Settlement to Date (1958-2006) (ft.)	Estimated Future Settlement (100 years) (ft.)	Total Calculated Settlement from 1958 (ft)
50	4.6	0.7	5.3
70	4.1	1.8	6.1
90	3.5	2.2	6.7

Figure 3.1. Calculated and estimated settlement of residential development in Marina Village and Mariner Cove based on bay mud thickness below the infrastructure. Table adapted from Town-Wide Storm Drainage and Flood Control Study – Phase I, 2007.



Elevation Map



Corte Madera -
Paradise Drive
North
Commercial

Calif Highway
Patrol

101

American Best
Value Inn

Marina Village Levee
(8.3 ft at lowest point)

San Clemente Creek

Channel Dr

Golden Hind Passage

Golden Hind Passage

Ebbtide Passage

The Sanitary
Pump Station

Yolo St

Echo Ave

Harbor Dr

Ebbemar Way

Seamast Passage

Triangle
Marsh

The Cove
School

Largo Course

Seawolf Passage

Pacific Queen Passage

Prince Royal Passage

Diamond Head Passage

Stagbound Passage

Town of Corte
Madera Fire
Station #13

Paradise
Shopping
Center

Spindrift Passage

Paradise Dr

Baird Ct

Windward Dr

Elevation*

- 12+ ft
- 11-12 ft
- 10-11 ft
- 9-10 ft
- 8-9 ft
- 7-8 ft
- 6-7 ft
- <6 ft



Elevation Map



Elevation*

- 12+ ft
- 11-12 ft
- 10-11 ft
- 9-10 ft
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Elevation Map



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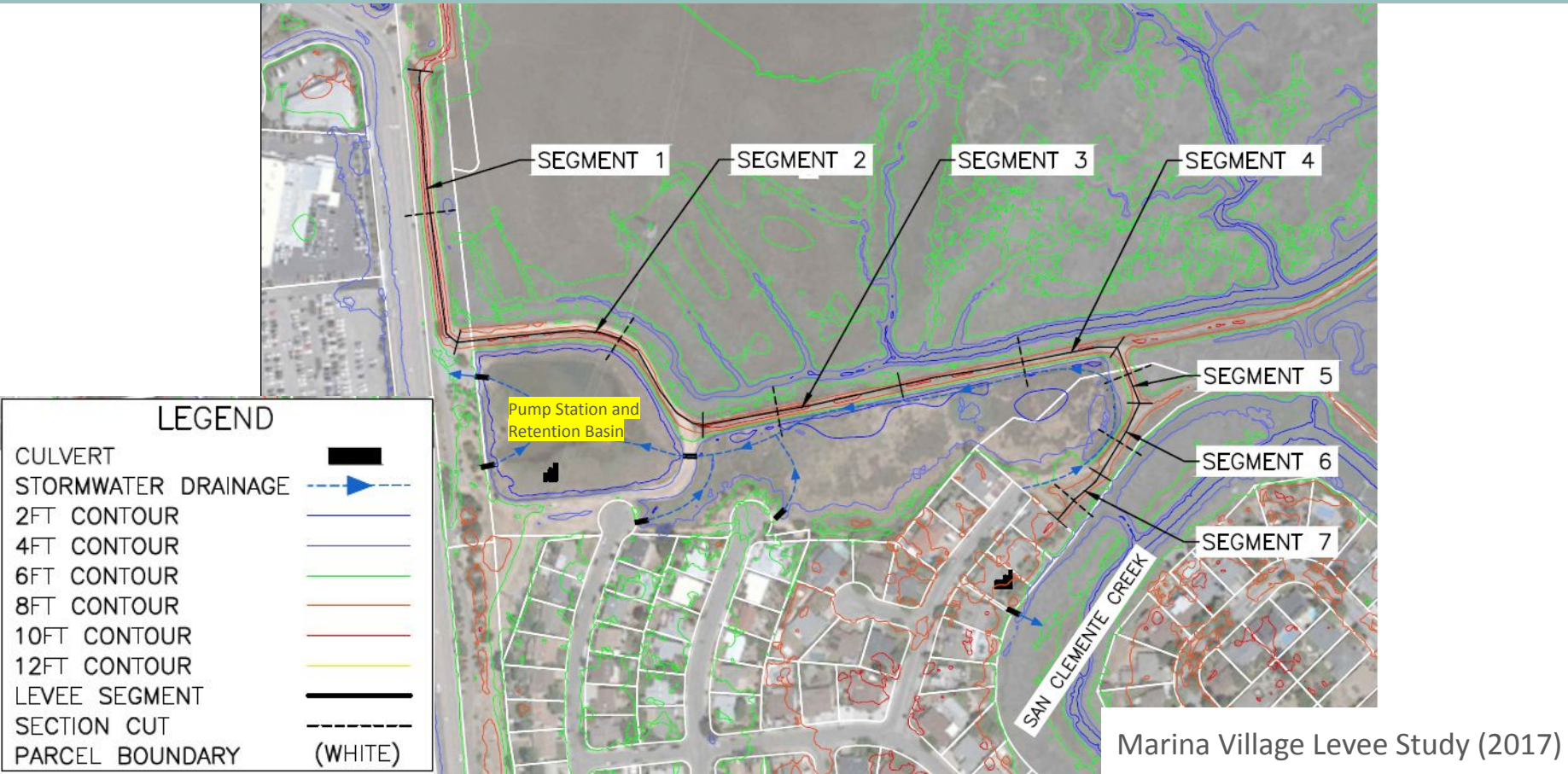
Barclutha Dr

Elevation*

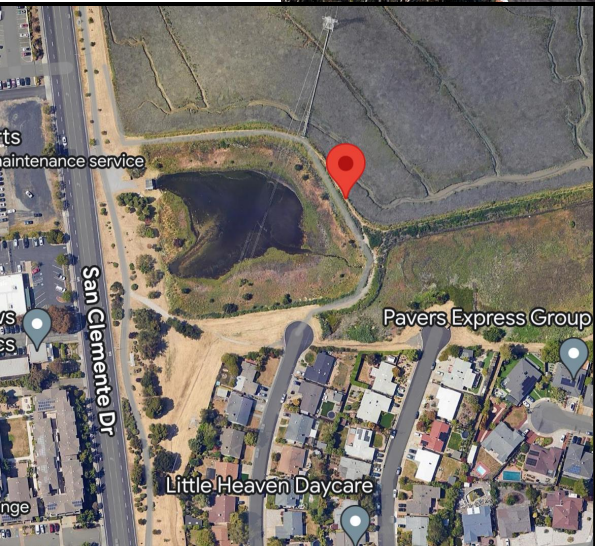
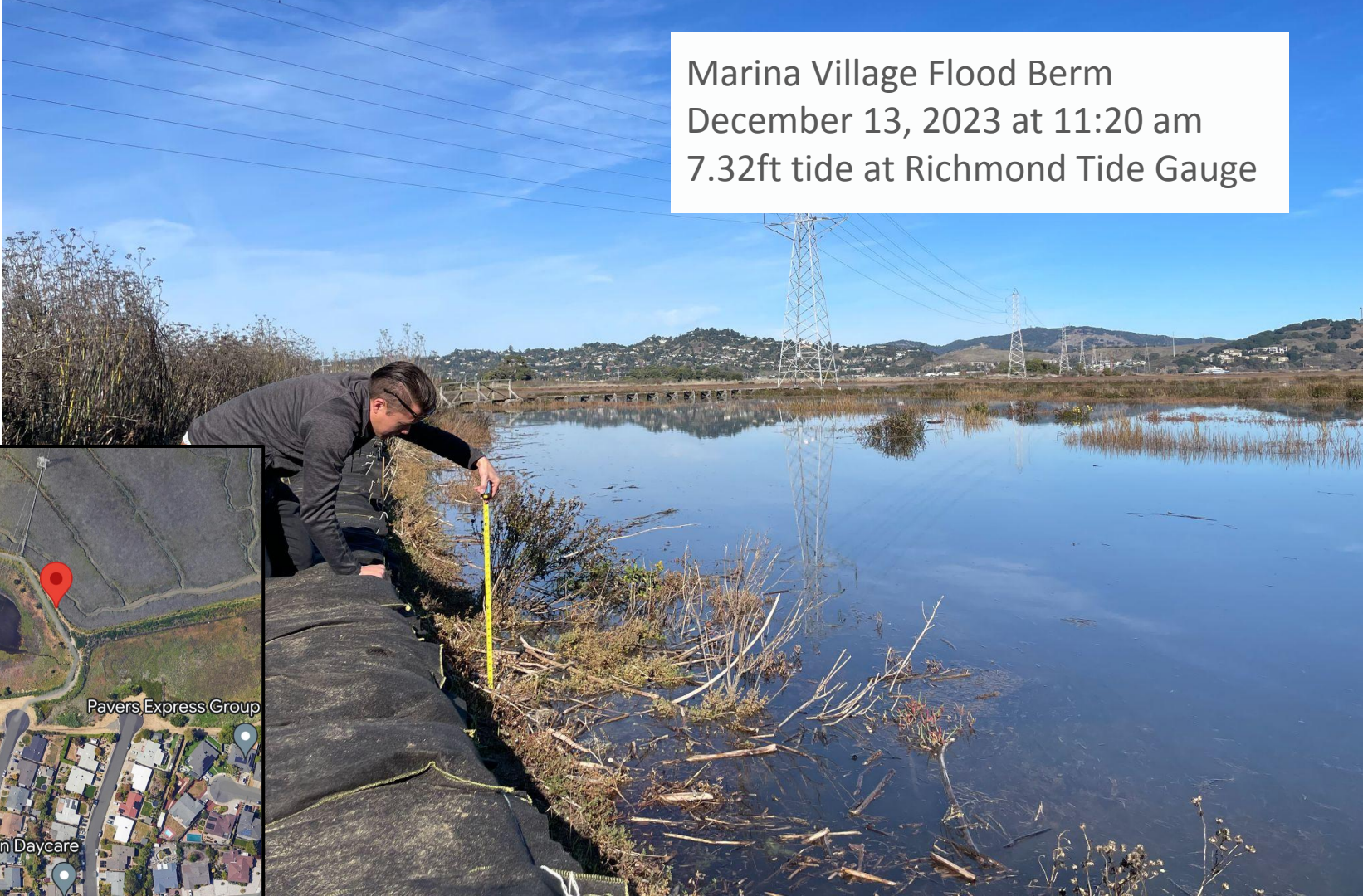
- 12+ ft
- 11-12 ft
- 10-11 ft
- 9-10 ft
- 8-9 ft
- 7-8 ft
- 6-7 ft
- <6 ft



Marina Village Flood Berm



Marina Village Flood Berm
December 13, 2023 at 11:20 am
7.32ft tide at Richmond Tide Gauge



Flood Berm Vulnerabilities

- Settlement of structure is ongoing
- Risk of overtopping due to:
 - Storm events
 - Sea level rise
 - High tides



9 Harbor Drive

February 9, 2024 10:21 am

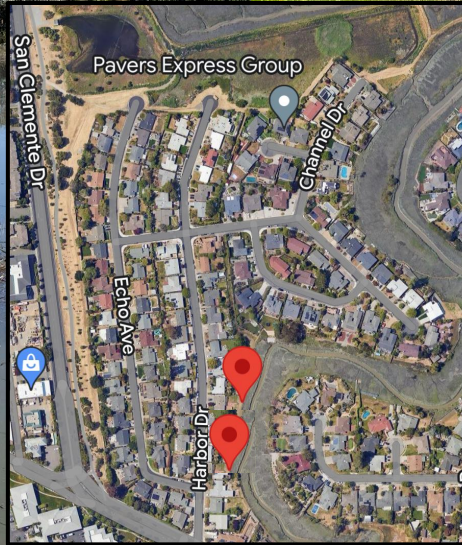
7.5ft tide at Richmond Gauge



19 Harbor Drive

February 9, 2024 10:48 am

7.59ft tide at Richmond Gauge



Introduction of Flood Visualization Tool

In Fall of 2023, the Town hired Virtual Planet Technologies, LLC to develop renderings of flooding impacts for Corte Madera.



Partners



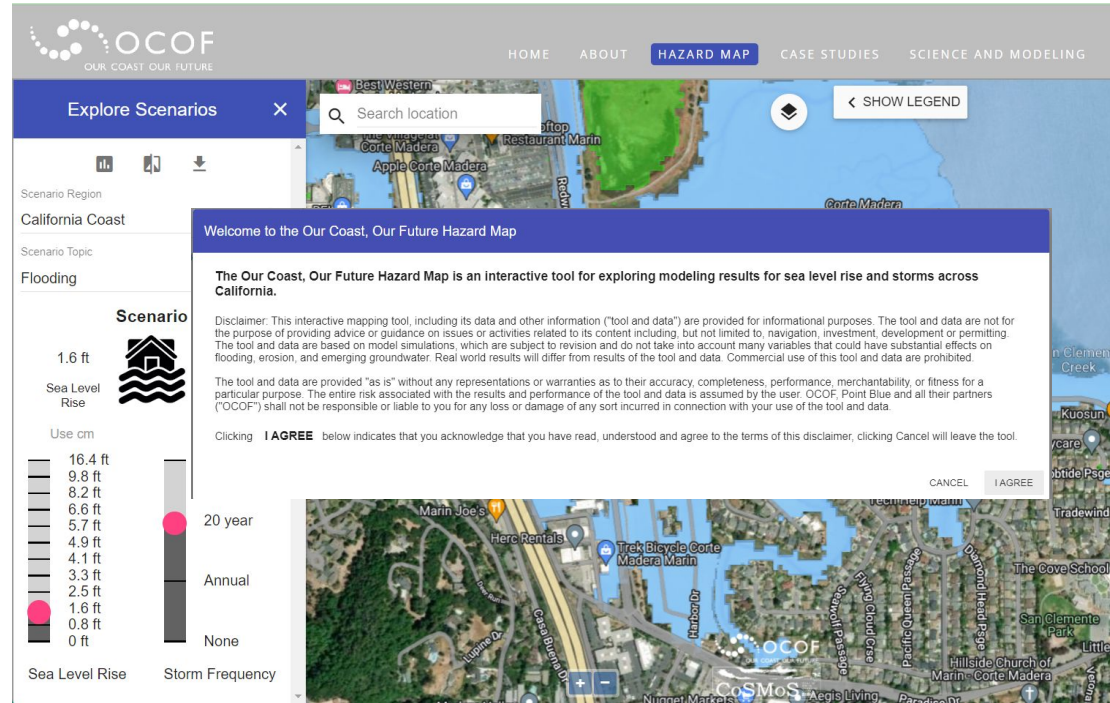
THE TOWN OF
CORTE MADERA
MARIN COUNTY CALIFORNIA



<https://virtualplanet.tech/>

Background of Visualization Tool

- Based on the Coastal Storm Modeling System (CoSMoS) created by the United States Geological Survey (USGS) & Pacific Coastal and Marine Science Center
- CoSMoS uses "mean high water" (MHW) as their vertical datum
- In efforts to make the CoSMoS model more useful to our residents, we have converted this datum to North American Vertical Datum of 1988 (NAVD88), which is the official survey datum for the Conterminous United States and Alaska



The screenshot shows the 'Our Coast, Our Future Hazard Map' web application. The interface includes a search bar, a map showing a coastal area with buildings and roads, and a control panel on the left. The control panel has sections for 'Scenario Region' (California Coast), 'Scenario Topic' (Flooding), 'Scenario' (1.6 ft Sea Level Rise), and 'Storm Frequency' (20 year). A disclaimer and 'I AGREE' button are also visible.

Scenario Region
California Coast

Scenario Topic
Flooding

Scenario

1.6 ft
Sea Level Rise

Use cm

16.4 ft
9.8 ft
8.2 ft
6.6 ft
5.7 ft
4.9 ft
4.1 ft
3.3 ft
2.5 ft
1.6 ft
0.8 ft
0 ft

Storm Frequency

20 year
Annual
None

Welcome to the Our Coast, Our Future Hazard Map

The Our Coast, Our Future Hazard Map is an interactive tool for exploring modeling results for sea level rise and storms across California.

Disclaimer: This interactive mapping tool, including its data and other information ("tool and data") are provided for informational purposes. The tool and data are not for the purpose of providing advice or guidance on issues or activities related to its content including, but not limited to, navigation, investment, development or permitting. The tool and data are based on model simulations, which are subject to revision and do not take into account many variables that could have substantial effects on flooding, erosion, and emerging groundwater. Real world results will differ from results of the tool and data. Commercial use of this tool and data are prohibited.

The tool and data are provided "as is" without any representations or warranties as to their accuracy, completeness, performance, merchantability, or fitness for a particular purpose. The entire risk associated with the results and performance of the tool and data is assumed by the user. OCOF, Point Blue and all their partners ("OCOF") shall not be responsible or liable to you for any loss or damage of any sort incurred in connection with your use of the tool and data.

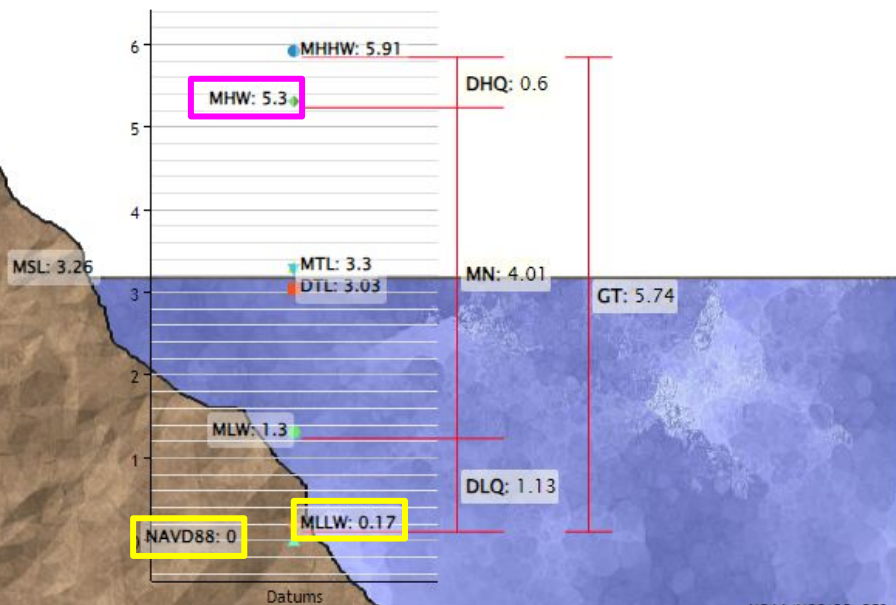
Clicking **I AGREE** below indicates that you acknowledge that you have read, understood and agree to the terms of this disclaimer, clicking Cancel will leave the tool.

CANCEL I AGREE

1.6 feet of sea level rise in the CoSMoS model is within the range of a King Tide today

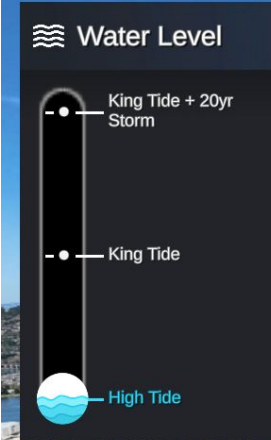


Datums for 9414819, SAUSALITO, COE DOCK, S.F. BAY, CA
All figures in feet relative to NAVD88



- Per the NOAA website and based on the Sausalito secondary tidal station, the difference in elevation between MHW and NAVD88 is 5.3 feet
- +1.6 feet Sea Level Rise in CoSMoS is equivalent to 6.9 feet NAVD88 for the Sausalito station.
- The same conversion for Point San Quentin (MHW = 5.17 + 1.6 feet SLR), yields a value of 6.77 feet NAVD88
- The difference between NAVD88 and "mean lower low water" (MLLW) used in most tide charts is 0.17 feet or 2.04 inches

Shoreline Explorer Corte Madera



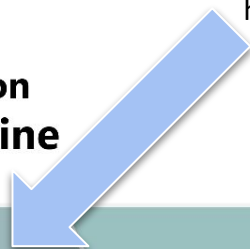
Q&A/Comment Guidelines

The Town is committed to creating a safe and inclusive environment. We will not tolerate speech or actions that disrupt a public meeting or may be perceived as aggressive, demeaning, or harmful towards staff, consultants, or other meeting participants. Staff will be monitoring this meeting and ensuring that everyone is participating respectfully. If staff determines that a meeting participant is acting in a disruptive or disrespectful manner, they will be muted and given a warning. If the behavior continues, they will then be removed.



Corte Madera Shoreline Adaptation Community Engagement Timeline

We are
here



Climate Adaptation
Assessment
Published



Flood Board &
Town Council
Meetings



Community
Survey



Stakeholder
Meetings



Pop-Ups



Virtual
Community
Workshops

Collaborative Flood Mapping

The screenshot shows a web-based collaborative flood mapping interface. At the top left is the logo for the Town of Corte Madera. A prominent green button with a plus sign and the text "Add Comment" is located at the top center. To the right of this button are icons for sharing, search, and a dropdown menu. The main area is a map of Corte Madera, California, showing a blue-shaded "Shoreline Engagement Effort Area" outlined with a dashed black line. The map includes labels for streets such as Highway 101, Casa Buena Dr., Paradise Dr, and Meadowsweet. Landmarks like "The Village at Corte Madera" and "Corte Madera Town Park" are also visible. On the left side, there is a sidebar with "About" and "Activity" sections. A legend in the bottom right corner identifies the dashed line as the "Shoreline Engagement Effort Area". The bottom of the map features the text "© Mapbox © OpenStreetMap Improve this map".



Next Steps



Mariner Cove Workshop: Wednesday, March 27th 5:30-7pm,
via Zoom



Website: <https://cortemaderaadapts.org/shoreline>



Contact: cmadapts@tcmmail.org

