



Corte Madera | Shoreline Adaptation Community Engagement Marina Village Workshop Summary

Date and Time: February 28, 2024 from 5:30-7:00 pm via Zoom

Attendance: 20 members of the public

Town Staff: RJ Suokko (Director of Public Works), Amy Lyle (Director of Community Development), Phoebe Goulden (Climate Action and Adaptation Coordinator), Chris Good (Senior Engineer)

Consultant Team (Plan to Place): Dave Javid, Rachael Sharkland, Quentin Freeman

On February 28, 2024, the Town of Corte Madera and the consultant team held a virtual community workshop to share information and hear from residents and stakeholders. The workshop was meant to:

1. Present an overview of the Shoreline Adaptation Engagement Effort goals and timeline;
2. Share background information to set the context for this Effort;
3. Share flood vulnerabilities specific to Marina Village;
4. Introduce a flood visualization tool (see Exhibit 1 below);
5. Provide an opportunity for participant input through a Q+A; and
6. Release a community-sourced interactive online flood mapping tool (see Exhibit 2 below).

After brief team introductions, Phoebe and RJ presented a description of previous climate adaptation efforts and outreach to date with a summary of feedback received, and an overview of technical studies, highlighting why Marina Village is vulnerable to flooding. The team then introduced a flood visualization tool based on the United States Geological Survey Coastal Storm Modeling System (USGS CoSMoS) data that shows the water level in Marina Village with the occurrence of a 1) typical high tide; 2) king tide; and 3) king tide plus 20-year storm event. The team then opened the floor for participants during a question and answer session. Verbal and chat comments were recorded on a virtual whiteboard (see Exhibit 3 below).

Below is a summary of the comments received verbally and via chat. This feedback will be used to guide how the Town evaluates options for flood mitigation and prevention. The community-sourced interactive online map is live on the project website (<https://cortemaderaadapts.org/shoreline>) and the flood visualization tool is intended to be available to the public in the coming months.



SUMMARY OF FEEDBACK RECEIVED

Comments and questions received both verbally and via chat are organized by theme. Responses are summarized in *italics*:

COMMUNICATION

- Participants appreciated the thorough presentation and the introduction of the online interactive mapping tool.
- Participants heard about the workshop through various channels including mailers, email blasts and physical a-frame signage.
- Have any local businesses at risk of flooding given feedback to inform the process?
 - *The Town has reached out to various businesses with varying levels of response. With this analysis, the Town is trying to target those groups & will continue to do so, but no significant comments to date.*

STRATEGIC PLANNING

- How is the Town setting priorities for its population in the case of a natural disaster (wildfire, flooding etc)?
 - *The best resource is the Climate Adaptation Assessment that was adopted in 2021 and available on our website <https://cortemaderaadapts.org/plan-sections>. That document guides the Town's priorities when it comes to evaluating and implementing efforts to improve our disaster resilience. The Town has built off the goals the Assessment put forth, including meeting with shoreline communities, which we are doing here tonight. Our website highlights the three areas of Corte Madera (Shoreline, Central, and Hillside) which we have set up to track and monitor progress. Regarding the Hillside, we recently received approval from the Town Council to improve evacuation routing and look at some undergrounding opportunities in Christmas Tree Hill. Regarding Central Corte Madera, we are currently updating the Storm Drain Master Plan, which will go in front of the Flood Board in April. All of these were recommendations from the Climate Assessment Adaptation Plan. The Town's recently updated Multi-Jurisdictional Local Hazard Mitigation Plan also includes information about hazards.*
- How are next steps being fiscally analyzed, ie. can we compare the costs of planned retreat to other potential strategies?
 - *What we heard from the community during the Assessment process is that they are not interested in retreat, and we support that. The Town wants to hear from residents and will be administering a survey to gauge interest regarding potential adaptation strategies.*
- What long-term solutions are being considered?
 - *Prior to the Climate Adaptation Assessment, there was a Marina Village Levee Study (2017) conducted with a focus on fortifying, strengthening, and potentially raising the*



flood berm around Marina Village in its current alignment. Based on more recent observations and information, the Town has elevated concern about flood risks in this area and has identified a need for additional evaluation of this strategy. The Town has applied to the Federal Emergency Management Agency (FEMA) for a grant to fund the bulk of the design, public outreach, and environmental compliance to study how to strengthen and raise the Marina Village Flood Berm.

TECHNICAL INFORMATION

- Is dredging an effective solution?
 - *This is not an effective approach (see Exhibit 4 below) because the volume of material you would have to remove to reduce water levels by a noticeable amount is not viable.*
- What is the elevation of San Clemente and Echo Ave compared to the 7.5 tide?
 - *The Town is interested in evaluating low spots on private property further, with the consent of property owners, to understand high risk areas. Parts of San Clemente and Echo Ave are 6 feet or less. The Marina Village flood berm is currently providing protection and the sandbags placed on the berm add approximately 1 foot of height.*
- How many feet of storm surge are we assuming for the 20 year storm shown in the visualization tool?
 - *We had a meeting with USGS, and the CoSMoS model is complex, so it depends where you are located; by the flood berm toward the north they are estimating 1.5' of storm surge and on the interior side near San Clemente they are estimating .5'.*
 - *We will look into having the feet marked on the visualization.*
- Can we raise the existing Marina Village Levee to a certain level, and as funds/materials are available move to the levee further north (SMART levee)?
 - *The Climate Adaptation Assessment is a document looking at long-term solutions. Now, we are looking at short-term vulnerabilities and responsive strategies that we can design and implement in the ~25 year range. This type of work is expensive, so this implementation will be incremental, which is why we are looking at specific discrete projects such as the Marina Village flood berm.*
- How would the Town evaluate, implement, and fund the modification of the berm behind homes on Harbor that keeps San Clemente Creek from flooding?
 - *Temporary measures with sandbags might buy more time to plan for a long-term solution. The Town has not maintained that berm historically as that property is private. It would involve lots of coordination and discussion with impacted property owners.*
- Has the Town considered undergrounding utilities? Is this a possible solution with flooding?
 - *Undergrounding power lines is not a good solution in areas with high amounts of groundwater or tidal influence.*



- Would the Town use dredging to add material to the existing berm?
 - *Yes this is a possibility, but you can only stack earth material to a certain height. The Marina Village Levee study from 2017 also looked at other strategies and materials to strengthen the berm including adding concrete blocks. With any option, the Town could evaluate adding green infrastructure elements. For example, we worked with SF Estuary Institute and they thought an ecotone slope or coarse beach could be possible options in some areas. More details are in the Climate Adaptation Assessment.*

Go [HERE](#) for a link to the presentation slides and a recording of the workshop.



Exhibit 1: Snapshot of flood visualization tool that is currently being built out, and is expected to be publicly available in the coming months.

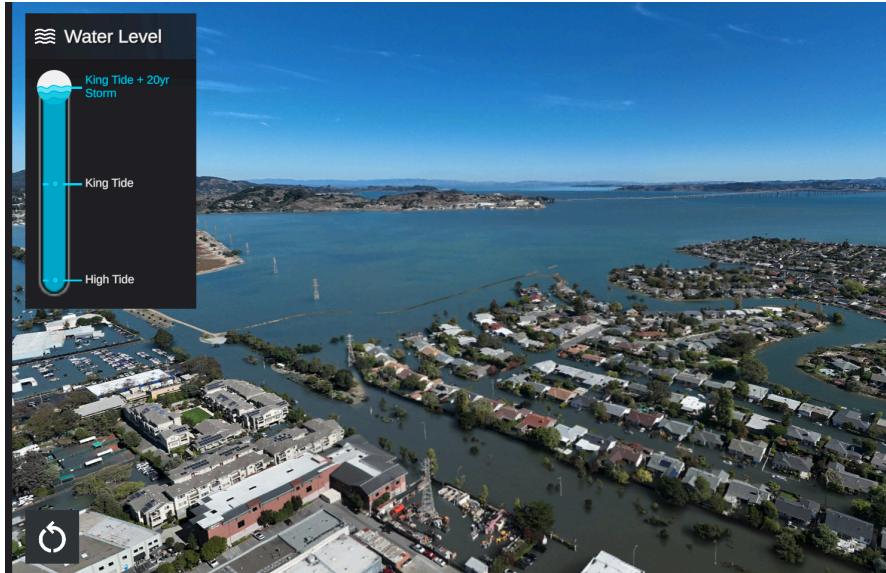


Exhibit 2: Snapshot of community-sourced interactive mapping tool. The map is live on the website [HERE](#).

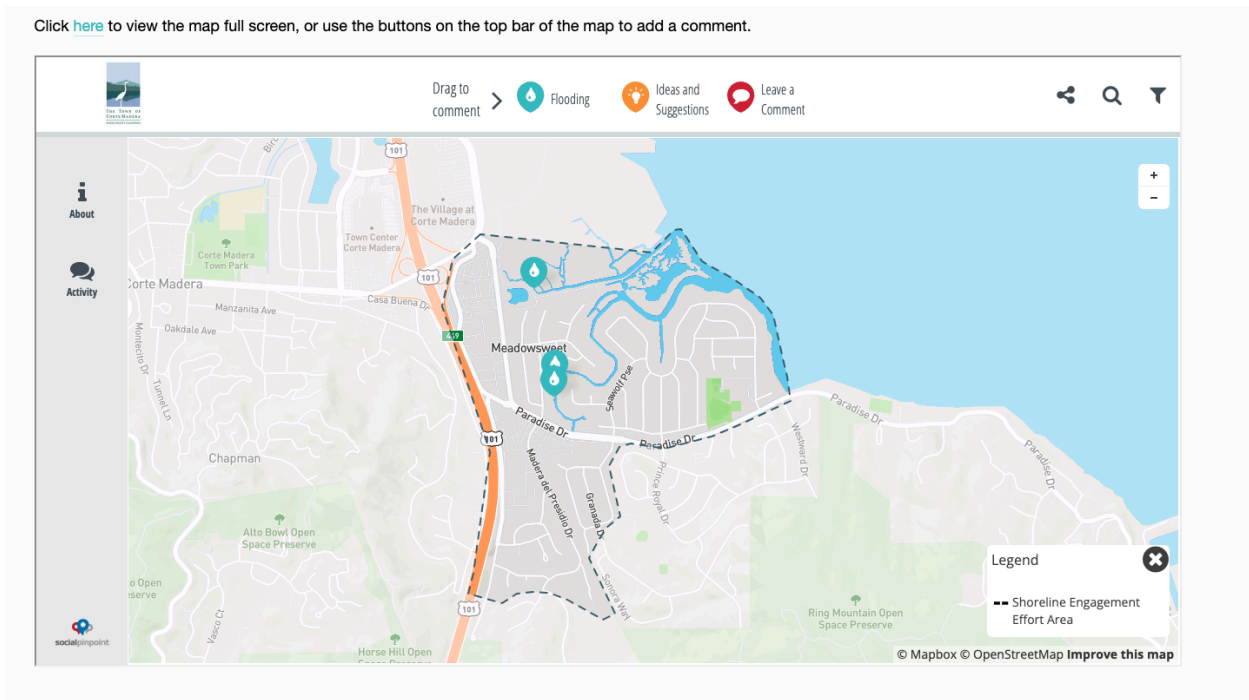




Exhibit 3: Virtual Whiteboard

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What are your top concerns when it comes to flooding?
What are your hopes and ideas for how the Town might address flooding hazards?

Verbal Comments

- Long term resident has experienced flooding, been here about 50 years and flooding has improved. Question about solutions being considered?
- Response: Town has applied to FEMA to a grant to fund bulk of design, public outreach, environmental compliance to look at strengthening and raising the Marina Village Berm
 - Earthen berm, add green infrastructure to be more ecologically friendly -- coarse beach or ecotone slope
- Looking at low spot on Marina Village Levee, continuous with levee that goes up to CM Creek; other spots may need to be raised in the future. Can a plan raise everything to a certain level?
- Question about the berm behind homes on Harbor that keeps San Clemente Creek from flooding MV: Would process require permitted process that would involve all of 10 homes? How would Town implement and

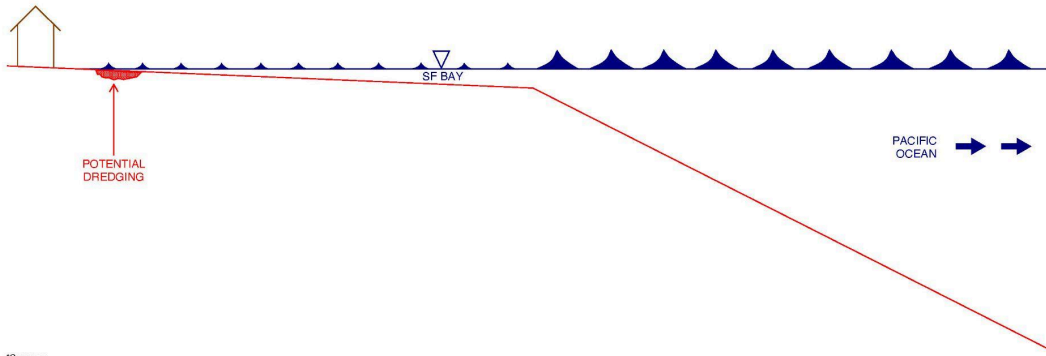
Chat Comments

- Who and where would one learn the "priorities" the Town has for its population? Ex: mudslides, wild fire, flooding, etc
- Thank you for the very informational presentation. Keep it up!
- Has there been any input from any of the businesses that would also be considered at risk in the event of a higher flood?
 - Response: Town has reached out to various businesses with varying levels of response. With this analysis, Town is trying to target those groups & will continue to do so, but no significant comments to date
- How does cost of strategies compare to cost of planned retreat?
 - Response: what we've heard from community is that they are not interested in retreat. There will be a survey with options of ways to approach this.
- What is the elevation of San Clemente and echo ave compared to the 7.5 tide? Le Marina

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Exhibit 4: Dredging Concept Diagram

	Approx. Surface Area* (Sq. Miles)	Approx. Volume per 1-Inch of water surface area (cubic yards)
San Francisco Bay	550	47,048,611
Pacific Ocean	60,000,000	5,132,575,757,576
All Oceans	139,000,000	11,890,467,171,717



*Sources:
BCDC - The San Francisco Bay Estuary (ca.gov)
How big is the Pacific Ocean? Ocean Exploration Facts: NOAA Office of Ocean Exploration and Research
How much of the ocean has been explored? : Ocean Exploration Facts: NOAA Office of Ocean Exploration and Research