

# Change Draft Corte Madera Adaptation Plan for Mariner Cove and Marina Village

## Strategy: Levee/Sheet Pile Wall with Nature-Based Enhancements

Two possible alignments for a flood risk management levee/sheet pile wall and tide gate are shown in the maps to the right. There are a number of tradeoffs to consider between the inner and outer alignments. With the inner alignment, views and backyard space are impacted by the placement of the structure near more homes, while the outer alignment preserves the status quo for more properties. The tide gate location in the inner alignment disconnects less of San Clemente Creek from the Bay, with fewer corresponding ecological impacts. The location of the tide gate also determines the stormwater detention capacity of the area behind the gate, with the outer alignment offering more capacity. Because the inner alignment is constructed along the edge of the neighborhood itself, it is less likely to impact Marta's Marsh, while the outer alignment's location at the marsh edge likely means more impacts.



Figure 3.7. Graphic representing a potential inner levee alignment and tide gate designed to protect Mariner Cove and Marina Village.



Figure 3.8. Graphic representation of a potential outer alignment and tide gate designed to protect Mariner Cove and Marina Village.

## Conceptual Cross-Section for Outer Alignment at Marina Village

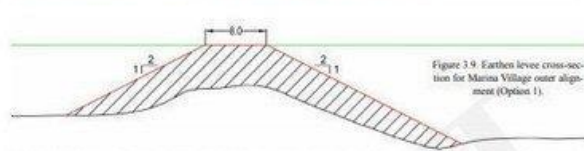


Figure 3.9. Earthen levee cross-section for Marina Village outer alignment (Option 1).

Option 1 is a traditional earthen or light weight fill levee built over the existing levee berm. The top crest width is reduced to a minimum of 8 ft. to provide access for construction and maintenance while limiting the overall size, weight, and extent of the levee. This portion of the marsh has extensive bay mud (in some places up to 110 ft. deep) that can cause significant settlement over decades and require the potential need to phase-in the initial design in order to maintain structural integrity. The 15 ft. crest elevation would need to be raised over time to keep pace with sea level rise and settlement.

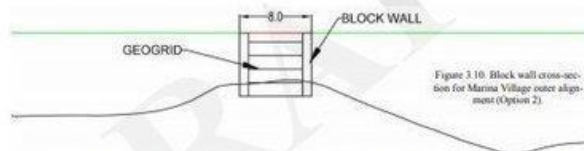


Figure 3.10. Block wall cross-section for Marina Village outer alignment (Option 2).

Option 2 is a block wall connected by a geogrid. This option would reduce additional weight on marsh, decrease settlement rates, and significantly reduce the width of the levee. The 8 ft. crest width would accommodate maintenance and potentially provide a pedestrian path. The block walls could be hidden with natural landscaping.

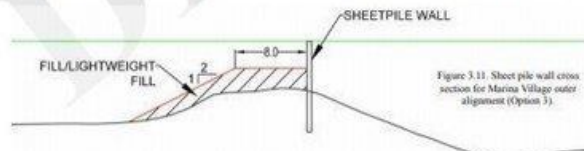


Figure 3.11. Sheet pile wall cross-section for Marina Village outer alignment (Option 3).

Option 3 is a combination sheet pile wall with some additional earthen or lightweight fill for stabilization (on the Town-side of the wall). The sheetpile wall could be raised 3 feet above the top of the levee to decrease weight and

[Marta and Roger Sullivan](#) started this petition to [Town of Corte Madera](#)

Did you know that in January 2020 the Town of Corte Madera will approve a plan which includes provisions to **build a 15 ft levee in the backyard of all bayfront properties? It also includes blocking all water flow cross to the marsh, and update real estate disclosure requirements to include current and future flood risk?** We have never started a petition but, when we found the link to the Draft Corte Madera Adaptation Plan in a December 20th Marin IJ article and read it, we decided to write this. The section of the plan dedicated specifically to the issue of flooding and sea level rise in Mariner Cove and Marina Village [is available here](#).

On the levee and the marsh, the document states:

**“the Town is considering a levee that would extend to 15ft NAVD88 (about 9 ft above current MHHW) that could be built in multiple phases to allow for settlement. Site constraints such as proximity to marsh and houses, lack of space, and poor ground conditions may limit the range of potential options. If a levee is constructed, a tide gate across San Clemente Creek would be required to complete the line of protection. It should be noted that as sea levels rise, this tide gate will need to be closed more**

**often, resulting in loss of tidal marsh, reduced stormwater outflow, and potential water quality issues in the creek. Eventually this gate will need to be closed all the time.** Tide gates and levees have finite life spans as they provide protection for a certain amount of sea level rise. However, they can be designed to be modified in the future and can reduce flood risk in the short- and medium-term while longer-term adaptation strategies are developed.

Maps showing the location of the levee, as well as drawings of the levee's structure are included at page 14 of the document linked above. Descriptions of the different levee options read:

Option 1 is a traditional earthen or light weight fill levee **built in or near homeowners' backyards**. While this is the least expensive option, it is likely infeasible due to space limitations, the net weight of the levee, and the associated settlement in areas built over bay mud.

Option 2 is a block wall connected by a geogrid. This option would reduce additional weight on marsh and significantly reduce the width of the levee; however, **this option would reduce visibility of the Bay, as it would extend eight or nine feet above the current ground level** to provide adequate flood protection through the middle of the century. The block walls could be modified on the inside to provide a set-up design (see blue lines in figure 3.13), be hidden by landscaping, or allow homeowners to build steps and decks connected to the wall.

Option 3 is a sheet pile wall. This is by far the narrowest and lightest weight option, reducing impacts to homeowners and reducing settlement. **Potentially the least visually appealing, the inside of the wall could be designed with a step-up to limit visual disruption of the eight- to nine-foot tall wall**, or homeowners could incorporate it into their landscaping. A coarse or composite beach (see page 73) could be placed on the bayside of the flood protection levee around Mariner Cove. The coarse beach can dissipate wave energy, help protect the vertical infrastructure, and reduce the design elevation for the wall helping to preserve views.

In its other provisions it states:

**Update real estate disclosure requirements for homes in designated flood-risk zones to include hazards related to climate change including prior flood damage and current and future flood risk.** (page 6 of 21)

We appreciate the work of the team that prepared the Draft Corte Madera Adaptation Plan but, given the huge potential negative impact of this project on our properties and the environment in the area, **we find that the communication from the Town was insufficient, and we would like to request that the Plan's last phase is not ended on January 8th, 2020, but is delayed to allow time for further meetings and**

**feedback from the community. We would also like the Town of Corte Madera to carry out a study to identify the causes of marsh erosion along the Mariner Cove and Marina Village shorelines and consider implementing the same nature based adaptation that the plan recommends for the tidal marshes of the Corte Madera Ecological Preserve (tidal marsh restoration, ecotone slopes, submerged aquatic vegetation and beaches) as an alternative to building a levee, and blocking water flow to the marsh.**

If you agree with our requests, please sign this petition.

Thank you,

Marta and Roger Sullivan