



**APPENDIX 4:
CONCEPTS EVALUATION
COMMUNITY
PRESENTATION:
Q&A RESPONSE**

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Evolving Shorelines: Concepts Evaluation Community Presentation 6/8/2021
Responses to questions raised during the presentation

1. Where and when will the recording be available?

Recordings of meetings, reports, and project updates are posted to the project website www.OneTam.org/bothin.

2. Where can you participate in Wambua Musyoki's Environmental Survey?

<https://forms.gle/y5fK7B1z5BZKZV1c8>

3. Is there a design that includes Marin City in these flood protections and wetland restorations? Are the questions about Marin City being addressed?

The Evolving Shorelines Project is focused on the Bothin Marsh Open Space Preserve and the segment of the Mill Valley Sausalito Multi-Use Pathway that runs through the Preserve. Marin County Parks, in partnership with the Department of Public Works, also manages the Pathway south of the Preserve to Gate 6/Bridgeway Blvd. in Sausalito and north of the Preserve to East Blithedale Ave. in Mill Valley. We are looking towards expanding our current effort in the near future to include adjacent communities, including Marin City, in order to develop multi-benefit sea level rise adaptation measures for the Mill Valley-Sausalito Multi-use Pathway (MVSMUP, part of the San Francisco Bay Trail).

Currently there is a project in its early stages focused on the pond at Marin City, copied from [Coastal Resiliency | Audubon California](#): "Audubon California is partnering with the ShoreUp Marin City – a local grassroots - to help fortify the coastal resiliency of this community. With input from community members in Marin City, Audubon California and ShoreUp Marin City are planning to restore a retention pond located between Marin City, Highway 101, and San Francisco Bay. Though the use of natural infrastructure, this project will enhance, facilitate, protect, and restore naturally occurring ecological functions and processes of the pond and surrounding wetland. Not only with this benefit the local plant and with animal communities, this restored pond will serve as public park- providing walking trails, informational signage, and bird watching opportunities."

In March 2021, Marin County Flood Control and Water Conservation District contracted for design, permitting and preparation of plans and specifications for construction for [Marin City Stormwater Pond improvements](#). These improvements include a new drainage culvert under 101 in addition to a floodwall along a portion of the Marin City Pond. This project was recommended in the [Marin City Flood Study](#) which the Flood Control District completed in 2018. Please visit [Flood Control - Public Works - County of Marin \(marincounty.org\)](#) for more information on the County's flood control efforts.

4. Is Caltrans and their upcoming Highway 101/1 improvements included in this visioning process?

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In the [Caltrans Adaptation Priority Report, District 4](#), State Route 1 at Coyote Creek has been determined to be a Priority 1 Bridge and will undergo detailed asset-level climate assessment. At this time, we are unaware of Caltrans having approved funding for construction of any improvements near the project area. Marin County Parks and Marin County Department of Public Works have been keeping Caltrans apprised of our planning efforts at Bothin Marsh and as discussed in Question 3 above, the Marin City Pond study.

5. How likely will these address the issues with the roads flooding? Yes, I am wanting to know more about flood protections as well.

Flooding on roadways and other low-lying areas throughout the Richardson Bay shoreline is complex because water can come from different sources, whether it is from rain-storm events, high tides, or both in combination. At this time the primary goal of the Evolving Shorelines Project is to enhance the tidal wetlands. In doing so, the wetlands can continue to act like a sponge and absorb large amounts of water and attenuate wave energy during storm surges.

One of the goals of the Project is to develop a flood resilient, well connected trail network along the shoreline. With the favored trail approach that would follow the perimeter of the marsh, there may be an opportunity to construct a raised trail embankment that could reduce the risk of flooding to adjacent areas. However, this needs to work in conjunction with other elements outside of the Preserve on lands that are owned and managed by others. During our next stage of project design, we will be giving these questions careful consideration. To get a better understanding of what has already been studied and some potential solutions in regards to flooding around Richardson Bay, please view this [StoryMap](#) put together by Marin County Department of Public Works.

6. Could we also go over what locations on the trail will change? Is it all the red? If so, where are the north and south boundaries to the changes? There is a large section of marsh East of Coyote Creek, can that be incorporated in the preserve. Is it part of Bothin Marsh?

The Bothin Marsh Open Space Preserve boundaries are not anticipated to change as a result of this project, with the exception of a recently approved acquisition of a Caltrans parcel that was located entirely within the boundaries of the Preserve. Additional County owned areas of marsh on the south side of Coyote Creek and along the Bay Trail may be included in some of the project measures.

In regard to changes in the trail location, the red lines represent conceptual changes. Constraints with utilities, property boundaries, and engineering will be further studied in the next level of design development that will delineate a more detailed potential alignment for the MVSMUP. Potential changes to the Charles McGlashen Multi-use Pathway, other single-track trails in the Preserve, and the MVSMUP segments that would be abandoned, are more closely tied to potential marsh resilience measures of the project that will also be further studied.

7. Concept 3 is great as it rings the marsh, but how about the section which passes the hotel and follows the highway under the overpass. Not so pleasant a bike ride.

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The MVSMUP segment south of Coyote Creek and extending to Gate 6 is of particular concern as it is also flood prone and even more constricted in options for its alignment. As stated in response to Question 3 above, the County is looking forward to working with its partners and adjacent communities to develop multi-benefit sea level rise adaptation measures for the entire length of the Pathway under its purview. Ideally, sea level rise adaptation planning efforts for the entire MVSMUP along Richardson Bay would be aligned for a comprehensive approach. A likely scenario is that construction of pathway segments would occur in phases and be coordinated to minimize disruption to access. At a minimum, during the next design stage we will explore options for a feasible connection somewhere along the existing MVSMUP south of the Preserve. As stated during our presentation, any pathway alignment options next to roads will incorporate measures to optimize safety and user experience of the shoreline.

8. Assuming that this project is standalone for now, how can it be designed to accommodate a range of future solutions for Marin City, Manzanita, and other flooded areas?

Currently the Evolving Shorelines Project is primarily looking at habitat enhancement and infrastructure improvements that can be made within the Bothin Marsh Open Space Preserve, managed by Marin County Parks, and are consistent with the [Vision](#) of the Evolving Shorelines Project. As mentioned in previous questions, there is potential to connect to other adaptation strategies. Marin County Department of Public Works has examined a range of potential solutions, and some of our work builds off of their work, such as the ecotone levee. Other strategies need to be developed. One of the aims of this project is to buy time for the community, city, and county leaders to develop policies and priorities that can lead to actions that will address near and long-term sea level rise.

It is important to recognize that tidal wetlands provide important ecosystem services that reduce the risk of flooding to low-lying areas by absorbing flood waters and attenuating wave energy from storm surges. Maintaining healthy tidal marsh function can reduce flooding risk in the near to mid-term while future solutions for other flooded areas are planned.

We are also considering opportunities for how the trail might abut and/or adapt into a potential future flood control structure, such as a levee, however flood protection is not a specific design objective for the project. The larger regional adaptation planning process and discussion of where to hold the line against sea level rise, and other environmental hazards, in the communities adjacent to Bothin Marsh has not yet occurred. Putting a flood protection levee along the perimeter of the Preserve might not be appropriate, for instance it could set up a future scenario that increases risk to life and property (i.e. levee breaches in New Orleans during the 2005 Hurricane Katrina disaster). Alternatively, a future community-based adaptation plan might prioritize creating more open space and wetlands in areas the community collectively retreats from, in which case levee infrastructure could be counter-productive. Evaluating the trade-offs and planning for sea level rise is a complex challenge that will involve community discussion and civic leadership to best direct limited public resources into adaptation strategies for the collective good. An implicit goal of the Evolving Shorelines Project is to elevate the climate change and sea level rise adaptation conversation and to inspire leadership and innovation on these challenges.

9. Does this help with manzanita flooding?

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One of the conceptual design strategies includes connecting Coyote Creek to South Bothin Marsh. At this time, we need to continue to refine potential connections to the marsh to determine if there could be any flood reduction benefit. A recent study conducted by the Marin County Department of Public Works in collaboration with Evolving Shorelines (Anchor 2021), found that it could be possible to re-align Coyote Creek without adversely increasing flooding upstream in Tam Valley, but additional study is also needed to refine the channel design to maximize sediment delivery to the marsh and minimize ecological impacts.

Other work recently completed by the County of Marin Department of Public Works (DPW) under a SB 1 grant from Caltrans studied opportunities to reduce the impact of tidal flooding in the area near the Manzanita Park-and-Ride at the junction of U.S. Highway 101 and California State Route 1 (SR1). The resulting Manzanita Area Flood Reduction Study (Anchor 2020) identified several potential small-scale flood reduction measures that could reduce flooding on SR1 and the Bay Trail. DPW and Caltrans will continue to coordinate with the Evolving Shorelines Project on planning and implementation of these potential measures. Please see the DPW [StoryMap](#) for additional information.

10. Right now that area behind Martin Brothers and Proof lab is quite trashed and unpleasant. Are you working with developers to make that area a nicer experience along your new route?

The segment of the Preserve adjacent to Tam Junction and the newly acquired Caltrans Parcel is included in our conceptual designs and has great potential for cleanup, habitat restoration, and overall visitor experience improvements. To date we have not had focused conversation with the property and business owners at Tam Junction regarding the trail alignment. We look forward to these discussions with stakeholders in the near future.

11. Is there ever a worry of the sediment having pollutants?

Contamination of sediment and other below ground soils in the marsh that may be subject to disturbance is an important concern, especially in areas of the marsh that were formed in part by historical placement of fill for bay lands development. For this project we will comply with the Regional Water Quality Control Board (RWQCB) requirements. The RWQCB has standards for pollutant concentrations for sediment placed in tidal wetlands and upland areas that drain into wetlands. Any imported sediment and structural fill for a trail embankment would need to be tested for contaminants and meet the Water Boards standards. In areas of historical fill and soils influenced by past agricultural practices, we will be studying opportunities to remediate any contaminated sediment that is discovered.

12. This sounds like an interesting experiment, but the costs should be separated out from the path project?

The goals of the project include achieving the multi-benefits of improved public access, habitat resilience, and sea level rise adaptation. Given the inter-connectedness of the trail and the marsh as well as the regulatory context we are working within, we must develop a comprehensive project for the Open Space Preserve. That being said, we are exploring opportunities from multiple grant

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funding opportunities including active transportation, public access, sea level rise adaptation, wetland restoration, etc. many of which typically prioritize multi-benefit projects.

13. Any plan for Bayfront Meadow? Impacts to the meadow?

Bayfront Park, just northeast of Arroyo Corte Madera del Presidio is outside of the Open Space Preserve and is a City of Mill Valley park. We are unaware of any planning efforts underway for this park, but we have been inviting their staff to participate in our planning discussions with other County agencies.

14. Are you taking any public comment or is this now a final decision?

At this point in our project planning and design process, we are nearing completion of Conceptual Designs. The favored approach to the trail alignment is still a concept that needs to be studied further, as well as the marsh connection with Coyote Creek before a project is defined for environmental review. We are continuing to engage with the public in the design of the project and welcome community feedback throughout the process. We anticipate bringing conceptual designs, as well as a preferred alternative before the Marin County Parks and Open Space Commission and the Board of Supervisors, where there will be additional opportunities for public comment. This is anticipated to occur in 2022. Once the project is fully defined, we will begin the environmental review process for compliance with the California Environmental Quality Act (CEQA), during which there will be a formal public comment.

15. At what level of SLR does the ecotone levy get breached?

In alignment with California State Ocean Protection Council and Bay Conservation and Development Commission sea level rise planning guidance, we are designing the public access element of this project to accommodate to 3.5 feet of sea level rise plus a 100-year storm surge. We are also considering design options to build in a trail embankment width that could be raised in the future depending on the actual rate of sea level rise. This approach would help us manage costs and also be less impactful to existing wetlands in the short-term.

16. How many bicyclists, pedestrian and horses use the existing path?

A trail counter on the path recorded a total of 990,075 users in the year 2020 with an average of 2,829 visitors a day and a single day peak of 11,467. Thirty-nine of these visits were bicyclists and 61% pedestrians. This trail counter does not record equestrian data.

17. How many feet has the sea level risen in the last 50 years? 30 years? 10 years? In our area.

According to the National Oceanic and Atmospheric Administration, "the relative sea level trend is 1.97 millimeters/year with a 95% confidence interval of +/- 0.18 mm/yr based on monthly mean sea level data from 1897 to 2020 which is equivalent to a change of 0.65 feet in 100 years. For more detailed information visit:

https://tidesandcurrents.noaa.gov/sltrends/sltrends_station.shtml?id=9414290

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18. Why does the extension of McGlashan Trail (between Bay Trail and Shoreline crossing) not show equestrian use on the slide? This must be a graphic error. All of the McGlashan Trail was designed to be fully multi use.

This indeed was an oversight. Equestrians have been allowed on the Mill Valley-Sausalito Multi-use Pathway and the Charles McGlashan Multi-use Pathway and have not been explicitly not-permitted. We know that a small number of equestrians do use the path on occasion and have done so for many, many years. We want to support alternative methods of transportation and public recreation.

19. With this plan we lose the best part of the existing path through the marsh with views to Mt. Tam. Path along roads and development is less desirable.

We are trying to meet the needs and desires of all of the community as well as achieve ecological enhancements for the marsh. We heard a majority of support for Concept 3 which would re-align the pathway to the perimeter of the marsh yet would still afford views of Mt. Tam at certain points.

20. The new bridge over Coyote creek be a span to get across just the creek or the entire marsh section in that location. How is the elevation change to be addressed?

The new bridge over Coyote Creek is a concept that will be further studied in the next phase of design including more specific options for the location and span length. The elevation for the new trail and bridge would be at least 11.8 feet above sea level or approximately 5.7 feet higher than today's average sea level (Mean High Higher Water). This elevation would accommodate approximately 3.5 feet of sea level rise plus a 100-year storm event and is in alignment with state and regional planning guidance for mid-century sea level rise projections.

21. Isn't the open lot across from Shoreline / Good Earth parking lots part of the old flood lands and mouth of Coyote Creek?

Essentially yes, the historical mouth of Coyote Creek was located near the present-day Shoreline Highway bridge over Coyote Creek. The historical wetlands associated with Coyote Creek and Tennessee Creek extended across the low-lying areas of Tam Valley. For an incredibly detailed analysis on the historical ecology of upper Richardson Bay (north of Hwy 101), please visit www.onetam.org/bothin for links to the [Mill Valley Historical Society](#) talk or take a look at the [Bothin Marsh Geomorphology Ecology and Conservation Options report](#).

22. Is there sediment that would benefit the Marsh coming in from the waterway at the end of Sycamore?

To date we have identified Coyote Creek and Arroyo Corte Madera Del Presidio as potential sources of sediment. In particular, partially due to the watershed size, our historical analysis shows that Arroyo Corte Madera Del Presidio has contributed more than 50% of the sediment transported to Richardson Bay.

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23. Impact to the marshes across from Bothin taken into account?

While we are in the conceptual design phase of project development, we are beginning to prepare a list of potential studies that we may need to study the relationship of the SLR adaptation components being considered and neighboring lands.