Tomales Bay Nature Based Adaptation Study
Public Meeting #1
February 25th, 7-8pm

I. **Show Us Your Shoreline**
   a. Questions:
      i. None.

II. **Welcome and Introductions**
   a. Questions:
      i. None.

III. **Present Feasibility Studies**
   i. *Question:* How is the California Coastal Commission involved in this project?
      1. *Dane Behrens:* The Coastal Commission will be included in the regulatory roadmap part of project. Feasibility of solutions will also include evaluation criteria like whether a strategy would be possible under current Coastal Commission regulations.
      2. *Leslie Lacko:* CDA also has a group of regulatory and land management agencies that will review the project, including CCC. Will see project as its being developed and be able to weigh in.
   ii. *Question:* Please explain the shift in data points after 1978 in the sea level rise map you presented?
      1. *Dane Behrens:* The shift is likely due to reporting at a finer scale beginning at that date. A shift in sampling rate.
   iii. *Question:* In the meeting prior to this, the Coastal Communities Working Group was discussing communication, transparency, and ability to get information about this project to the greater community. Can CDA post materials from this project on their website?
      1. *Leslie Lacko:* Yes.
   iv. *Question:* What sea level rise projection and time period is this project using?
      1. *Dane Behrens:* ESA is working with CDA to determine sea level rise scenarios and ensure consistency among CDA projects. We will likely use a medium-term scenario (~2060-2080) and a longer-term scenario (~2100).
         a. *Question:* What amount of time do we have until sea level rise impacts us?
            i. *Jack Liebster:* We are dealing with high levels of uncertainty. Because of this, we try not to assign a year, since that could change as the science is updated. We want to be prepared with solutions for 1 foot of sea level rise, 2 feet of sea level rise, 3 feet of sea level rise, etc. We have time to make these plans, but current scientific reports show that rates of sea level rise are accelerating.
               1. *Question:* Is the County using the new Ocean Protection Council sea level rise guidance?
                  a. *Jack Liebster:* Yes. The state has adopted guidance that we align our

work with, while knowing that guidance will likely continue to be updated and shift over time.

v. *Question:* This project seems to be focused on adaptation and resilience in the next 1-10 years. What happens with higher levels of sea level rise? How much are we factoring in managed retreat? Larger berms? Where is that discussion. Living shorelines are wonderful, but will I be enough
    1. *Dane Behrens*: We will clarify in future correspondence what exactly living shorelines can and cannot do. The County will be folding living shoreline strategies into a wide range of other adaptation options and looking at many alternatives.
        a. *Jack Liebster:* This project is looking at one possible set of adaptation alternatives that may work for some amount of time. CDA is also working on the bigger picture of how we adapt to sea level rise and looking at all the possible adaptation solutions. These studies are giving us the data we need to be able to compare nature-based solutions to other strategies we will be considering.
        b. *Michelle Orr*: We will be clarifying what outcomes you can expect with different approaches. There is a limit in efficacy over time with living shorelines systems.
            i. *Question:* What about funding availability for implementing projects?
                1. *Jack Liebster:* We are also researching and evaluating funding mechanism. This is a discussion we will have with all of you as CDAs many projects progress.

vi. *Question:* How is this project accounting for sedimentation processes in Tomales Bay that are not properly modeled in the CoSMoS data being used?
    1. *Dane Behrens*: This project has some funding to address this and build upon the CoSMoS bathtub model. We will be evolving the landscape with these designs considering accretion and how shorelines might move inland over time. We don't have funding to do this in fine resolution, but will use applied tools to consider how beaches might move, mudflats may erode, etc.

vii. *Question:* Will this project evaluate costs versus benefits of potential adaptation measures?
    1. *Dane Behrens*: We will evaluate costs of 2-5 conceptual designs. There are larger datasets of adaptation measure costs throughout California. We want to understand the feasibility of these projects by understanding if they are constructible, will they provide protection, will they provide ecological services, and what do they cost?

viii. *Question:* Does dune restoration use native dune grass?
    1. *Dane Behrens*: Yes.

ix. *Question:* Are we considering the potential impact of earthquakes on living shorelines in Tomales Bay?

1. *Dane Behrens:* Yes. We are considering earthquakes while evaluating potential intertidal solutions. We will look at to what extent we expect intertidal solutions might subside in an active fault zone.

x. *Comment:* Might there be value in planning for an extreme scenario, say 25 feet of sea level rise, so we do not need to continuously revisit and reconstruct.

xi. *Question:* How do we ensure that potential solutions can react to the changing environment around them?

1. *Dane Behrens*: One of the challenges with this type of adaptation is that shorelines evolve. This concept is being studied actively and we are learning how shorelines evolve. We know how beaches and marshes adjust to changes in water level and will apply lessons learned elsewhere to this project.