

**COMMITTEE TO PROTECT BELVEDERE'S  
SEAWALLS, LEVEES, AND UTILITIES  
TUESDAY, MAY 28, 2019, 12:00 P.M.  
BELVEDERE CITY HALL - COUNCIL CHAMBERS  
450 SAN RAFAEL AVENUE  
BELVEDERE, CALIFORNIA**

**MINUTES**

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**COMMITTEE PRESENT:** Denise Bauer, Justin Faggioli, Glenn Isaacson, Ken Johnson, Nancy Kemnitzer, Bob McCaskill, William Rothman, Larry Wheat, Sally Wilkinson, and Chair Jim Lynch

**COMMITTEE ABSENT:** Andrew Allen

**OTHERS PRESENT:** City Clerk Alison Foulis, City Manager Craig Middleton, Stetson Engineer James Reilly, Miller Pacific Engineer Scott Stephens, and Public Works Manager Robert Zadnik

**CALL TO ORDER OF REGULAR MEETING**

The meeting was called to order at 12:03 PM by Chair Lynch.

**OPEN FORUM**

No one wished to speak.

**SCHEDULED ITEMS**

**1. Approve minutes of the May 21, 2019, meeting.**

The minutes were approved as presented.

**2a. Establishing a working definition of flooding.**

Stetson Engineer James Reilly stated that their analysis relied on a definition of flooding as any time water enters the Lagoon and reaches an elevation of 4' NAVD (the height at which the lowest lying Lagoon homes would begin to flood). The Committee discussed this definition and considered whether the objective of the Committee, and thereby the working definition of flooding,

should be based on the protection of public assets, such as utilities and roadway access, or private homes. The Committee determined that the definition of flooding should be sheetflow of water across the roadway or overtopping/sloshing of water to levels which would cause harm to roadway access and/or utilities.

**2b. Continued discussion on seismic-related risks.**

Miller Pacific Engineer Stephens presented maps showing active faults relative to the project site and historic fault activity in the Bay Area. The Committee discussed the probability of various seismic events and history of earthquakes and impacts in Belvedere. Mr. Stephens stated that the largest seismic risks in the Bay Area are from the Hayward and Rodgers Creek Faults and that the greatest damage would come from potential liquefaction during an earthquake.

**2c. Continued discussion on vulnerabilities of levees and utilities.**

Public Works Manager Zadnik continued his presentation on the vulnerabilities of the City's utilities, such as those operated by MMWD, PG&E, and Sanitary District 5, to sea level rise and seismic events. The Committee discussed the dangers which arise from damage to the City's water, gas, electric, and sanitary sewer lines and the various utilities' plans for upgrading aging lines. The Committee also discussed the City's roadway system as its largest public asset and the importance of protecting San Rafael Avenue and Beach Road from potentially non-drivable conditions during an earthquake or flood.

**3. Introduction to nature-based approaches to sea level rise and water management.**

Committee Member Wilkinson introduced Roger Leventhal, Senior Engineer for Marin County Flood Control, who discussed construction of "living shorelines" as an alternative to rip-rap for erosion control. Mr. Leventhal detailed a project he completed rehabilitating the Aramburu Island shoreline adjacent to Strawberry in Marin County in 2011/2012. The Committee discussed living shorelines and asked whether they had ever been used to protect residential areas, to which Mr. Leventhal responded that he was aware of some such installations in Puget Sound, Washington. The Committee also discussed BCDC's potential receptiveness to living shoreline projects, which may include fill in the Bay. Mr. Leventhal clarified that living shorelines would be a helpful addition to building up Belvedere's shoreline resiliency, but that they could not serve as a replacement for the designs proposed by Stetson Engineers, nor would they provide significant protection from sea level rise.

**4. Briefing on Stetson Engineers' generated design alternatives for the City's levee system.**

Stetson Engineer Reilly provided an overview of the various design alternatives developed for Belvedere's four flooding pathways at: (1) San Rafael Avenue, (2) West Shore Road/San Rafael Avenue Intersection, (3) Beach Road, and (4) Tiburon. The Committee asked questions of Mr. Reilly regarding the proposed barrier designs and whether all four flooding pathways needed to be

addressed at the same time. Mr. Reilly responded that, while the Committee could prioritize flood pathways (1), (2), and (3) initially and allow for more conversation on the (4) Tiburon barrier portion, the first three locations would need to be implemented together or not at all.

**5. Wrap up and review of agenda for next meeting on June 3, 2019.**

Chair Lynch thanked the Committee members for their participation in this meeting and requested that they continue to review the reports and presentations distributed before and during this meeting to allow for an in-depth conversation at the next meeting on June 3<sup>rd</sup>.

Chair Lynch called for any final public comment.

Peter Mark requested that the Engineers consider an alternative design for the West Shore Road/San Rafael Avenue intersection wherein the selected San Rafael Avenue levee design be continued behind the first 6-7 homes along West Shore Road on the City's land.

Seeing no one else wishing to speak, Chair Lynch closed the public forum.

**ADJOURN**

The Committee meeting was adjourned at 2:11 PM.

**THE FOREGOING MINUTES** were approved at a meeting of the Committee to Protect Belvedere's Seawalls, Levees, and Utilities on June 3, 2019, by the following vote:

**AYES:** Denise Bauer, Justin Faggioli, Glenn Isaacson, Ken Johnson, Nancy Kemnitzer, Bob McCaskill, William Rothman, Larry Wheat, Sally Wilkinson, and Chair Jim Lynch  
**NOES:** None  
**ABSENT:** Andrew Allen