

**FLOOD CONTROL ZONE 3 ADVISORY BOARD MEETING**  
**DECEMBER 7, 2016**

**STAFF REPORT**

**Item 1. Approval of Meeting Minutes: June 27, 2016**

**Recommended Action:** Approve minutes.

**Item 2. Open Time for Items Not on the Agenda**

Comments will be heard for items not on the agenda (limited to three minutes per speaker).

**Item 3. Brown Act Refresher Training**

Staff will provide Brown Act refresher training for the Advisory Board and the two new board members.

**Item 4. Zone Engineer's Report**

a. **Coyote Creek Flood Mitigation Project Update**

*i. Hydraulic Analysis and Sediment Removal Considerations in Earthen Channel*

At the June 27, 2016 Advisory Board (AB) meeting, staff reported that a hydraulic analysis of the earthen channels (middle and lower reaches) would be conducted to determine if these channels meet the freeboard requirements of the original U. S. Army Corps of Engineers (USACE) design standard of 1 foot of freeboard.

Staff has completed this hydraulic analysis and determined that the channel meets the freeboard requirements, except for three locations in the middle and lower reaches of the creek. Two of the locations are downstream of the Route 1 Bridge (lower reach) where overtopping of the creek bank occurs in areas where there is no threat to any infrastructure (Bothin Marsh and a small marsh area on the right bank looking downstream). There is also one short section (less than 100 feet) where the computer-modeled freeboard is 0.85 feet. This short section is in the middle reach located between the Route 1 Bridge and the Flamingo Road Bridge.

However, staff has determined that sediment removal in 2017 would not be a cost effective flood mitigation measure because the locations of the two overtopping areas occur where there is no threat to homes, businesses, or roadways. Additionally, the one short area with the 0.85 feet of computer-modeled freeboard has no history of overtopping the creek bank, and it would not be cost-effective to mobilize a dredging effort for this short span.

For this analysis, we used two prior surveys conducted in 2013 and 2015 and merged them together. We are recommending that an updated new channel survey be conducted in 2017 and used as the basis for further analysis. This recommendation stems from the fact that the data used in this most current modeling is up to three years old, and the modeling frequency for Coyote Creek should be every three years. The recommended 2017 survey and modeling would be the baseline project to establish this three-year frequency.

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*ii. Sediment Removal in the Concrete Channel*

Due to regulatory constraints, the planned 2016 sediment removal from the concrete channel portion of Coyote Creek has been postponed until 2017. The District originally intended to complete this work in October 2016, but was informed by the Regional Water Quality Control Board that additional permitting requirements would need to be met prior to conducting the work. The additional requirements include environmental mitigation that offsets the removal of sediment from the concrete channel. The District is working to comply with these requirements, and should complete the work next year.

*iii. USACE Coyote Creek Channel System-Wide Improvement Framework Update*

Last August, staff submitted a draft of the System-Wide Improvement (SWIF) Plan to USACE. A USACE-approved SWIF Plan ensures that USACE will pay for damages to the Coyote Creek Flood Protection Project (Project) in a federally declared disaster.

USACE has provided the District with comments on the draft SWIF, and staff is currently working on incorporating those comments into the final version of the SWIF Plan. After submittal of the final SWIF Plan, USACE will review and accept the Plan. Staff recommends that certain aspects of the Plan not be implemented until final USACE approval, and that some aspects of the Plan are recommended to proceed prior to USACE approval.

Aspects of the Plan that are recommended to proceed prior to USACE approval include repairing existing storm drain pipes, and cleaning and inspecting storm drain pipes within the Project. This maintenance work should be done to ensure that the Project functions effectively. This work is currently budgeted in the AB approved 2016-17 operating budget and is currently underway.

Aspects of the Plan that are recommended to not proceed until after USACE approval include adding existing flood reduction elements to the Project that were added after the Project was completed in the 1960s. These existing elements include three stormwater pump stations, and various encroachments. The reason for waiting until after approval is that monies would need to be spent (surveying, real estate, staff time) to include these elements in the Project, and staff feels it would be best to wait for final USACE approval before committing these funds.

b. Tam Valley Community Survey

At the June AB meeting, the AB considered a community survey of Tam Valley residents to seek input on funding of potential flood mitigation projects that were identified in a recently completed Coyote Creek Levee Evaluation Project (Study). After some internal review, staff would like to postpone the community survey until a broader scope of work can be considered for Zone 3. The complete Study can be found online at [http://www.marinwatersheds.org/pubs\\_reports\\_southern\\_marin.html](http://www.marinwatersheds.org/pubs_reports_southern_marin.html).

Costs associated with implementing any of the three flood mitigations measures outlined in the recently completed Study are significant:

Baseline (20-year event mitigation):	\$10M to \$18M
FEMA Accredited (100-year event mitigation):	\$19M to \$57M
FEMA Accredited with SLR (2050 MHHW):	\$25M to \$72M

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Each of these potential projects would require funding from a voter-approved tax measure. Before embarking on a process for a tax measure, staff would like time to consider a long-term work plan for Zone 3 that meets the needs of the entire zone.

### ***c. Update on Marin City Drainage Study***

Following the floods in December 2014 that resulted in partial closure to Highway 101 and the entrance road into and out of Marin City, District staff developed a Request for Proposals for qualified consulting firms to develop a calibrated computer model of the Marin City stormdrain system, and to develop flood reduction alternatives with cost estimates to address flooding and associated roadway closures (the “Marin City Hydrology and Hydraulics (H&H) Flood Study”). Following review of seven proposals and conducting interviews with each team, District staff recommended awarding the contract to Wood Rogers, Inc (WR) on August 16, 2016. Since the award, WR has been working to collect and review existing information and to build the hydraulic model of the watershed and stormdrain system. A field survey of portions of the stormdrain system was conducted in November 2016 and a working H&H model is expected to be completed in December 2016. Currently, the District is planning on having a presentation of flood reduction alternatives by WR staff at the next Advisory Board meeting.

Additionally, to address flooding for this winter, WR has developed the following two interim deliverables:

- A 2016 Winter Stormwater Outflow Operations Plan for the stormwater pond and its outlet for which more details will be presented by Staff at the Advisory Board meeting. Note that implementation of this plan requires that the existing temporary flood wall (Muscle Wall) maintained by the shopping center be fully operational (an update is provided below) and this is reliant on this work being completed by others.
- A flood drainage reduction concept plan for the open channel reach just upstream of the First Missionary Baptist Church. This site was identified by community members as a location of persistent flooding. District staff asked WR to visit this area and develop a site specific plan to reduce out of channel flooding for this coming winter. The plan consists of construction of a temporary sand bag wall just upstream of the inlet to the culvert.

### ***d. Update on the Marin City Shopping Center Flood Reduction Work***

Separate from the drainage study, District staff have also been supporting the Marin County Public Works Land Development Division to rectify an existing enforcement order with the shopping center to fix critical stormdrain facilities and to maintain a temporary flood wall (Muscle Wall) around the stormwater pond installed last winter. In October 2016, WR visited the site and prepared an evaluation of the wall and recommended several corrective measures to maintain the flood protection integrity of the wall for this upcoming flood season. As of this staff report, shopping center staff have indicated that these measures would be implemented and that they finally have the required permits as of November 2016 to replace a 40 foot section of degraded stormdrain pipe as part of their work. This project is expected to be completed by December 2016. In addition, shopping center staff have indicated that emergency pumping facilities would be mobilized and available on-site this flood season in the event of flooding (similar to last year).

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### e. Update on Manzanita Flood Mitigation Project

District staff have been working with Caltrans staff over the past several months to develop flood reduction strategies for the Manzanita area. Caltrans prepared a memo that describes general, concept-level, short, medium and long term flood reduction solutions to the persistent flooding issues at the Manzanita parking area and Shoreline highway. Short term solutions are those that may be temporary and are intended to address tidal flooding under high tide conditions. Medium term solutions are intended to develop permanent solutions to both high tide and stormwater flooding under current conditions. The long term solutions intend to develop permanent solutions to both tidal and stormwater flooding under future conditions of sea level rise. To aid in the development of final designs, Caltrans completed a new topographic survey of the Manzanita Area in the summer 2016.

In fall 2016, Staff worked directly with Caltrans field staff to focus on flooding at the west culvert and ditch system (adjacent to the Caltrans Corporation Yard) most directly responsible for the roadway flooding of Shoreline Highway. District staff took the lead in laying out and building a sand bag wall along and within Caltrans ROW to inhibit direct overland coastal flooding of the highway. District staff built the wall using high quality UV resistant sand bags. A catchbasin drainage inlet (DI) in the roadway also provides a conduit for direct tidal flooding of the roadway. Since this flooding source is in the actual roadway, Caltrans agreed that they would implement a flooding solution to this inlet. District staff are requesting Caltrans to have this drainage inlet blocking system fully operational by the upcoming December King Tides.

There is also flooding of the Manzanita parking area from the eastern drainage system fully within Caltrans ROW and Caltrans is looking at options for this area.

Communication and coordination between the District and Caltrans has greatly improved from past years. The District plans to keep working with Caltrans staff to develop solutions to this flooding location. The medium-term solutions to the west side drainage system flooding issues could require an investment of Zone 3 funds for all or a portion of the work. The long term solutions will likely require significant funding beyond available zone funds.

### f. Update on Bothin Marsh Pilot Project

In 2015, the District was awarded a small grant by the North Bay Watershed Association (NBWA) to do a first cut assessment of the feasibility of directly reusing dredged sediments from the middle and upper reaches of Coyote Creek on Bothin Marsh. We anticipate this study to be finalized by Q1 2017.

### g. FEMA Community Service rating System

The Community Rating System (CRS) is a voluntary incentive program that recognizes communities for implementing floodplain management practices that exceed the Federal minimum requirements. Per the Board of Supervisor's direction, the County of Marin joined the CRS Program on May 1, 2016 as a Class 7, which affords home owners in the unincorporated county with a 15% discount on their flood insurance.

As part of maintaining, and possibly increasing, this discount level, the County gets "points" for annually presenting elements of the CRS at public meetings. As such, staff has provided a flyer with pertinent CRS information to the AB and members of the public at this evening's AB

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meeting. Earning more points could lead to a higher discount, and staff's review of the items on this flyer will earn 36 points towards the CRS program.

### **Item 5. Watershed Program Update**

a. Marin Bay Waterfront Adaptation Vulnerability Evaluation (BayWAVE)

The Marin BayWAVE project recently completed an internal draft sea level rise vulnerability assessment for the entire bay shoreline of Marin. The project partners the County's Public Works and Community Development Departments as we begin the process of understanding what is exposed with a number of sea level rise scenarios. The goal of the project is to bring the best available science to a coordinated effort to inform and plan for the future. The project links all the cities and towns, local and regional agencies, and the resource agencies involved with planning and permitting. This study largely outlines the vulnerabilities countywide, but does not go into the adaptation solutions like the Richardson Bay Shoreline Study completed by Roger Leventhal. Adaptation will be part of a future phase of the project.

b. Video of Arroyo Corte Madera del Presidio Watershed

Staff will present the completed video. Sound Visions Media (Jeff Foster) and Sam Goldberger partnered to develop this video of the Arroyo Corte Madera del Presidio Watershed. The footage was shot mostly from drones that allow the viewer to see what the watershed looks like from above and how water moves through the community.

c. Southern Marin Watershed Guide Presentation

The Southern Marin Watershed Guide has been finalized and is available for download on [www.MarinWatershed.org](http://www.MarinWatershed.org). The final guide is intended to support awareness and interest in understanding where we live in the watershed and how to better live with water.

### **Item 6. Schedule Next Meetings**

Per the Zone 3 Bylaws, the annual Advisory Board meeting is scheduled for March 16, 2017.