

Marin County Flood Control and Water Conservation District

time for ordering the new pumps, which is 20-27 weeks. Based on the lead time, staff has revised the upgrade schedule as follows: Project goes out to competitive bidding in June 2018 and bid is tentatively scheduled to be awarded in July 2018; contractor orders pumps in August 2018 and provides various required submittals to the District; construction of the project takes place between May 1, 2019 and September 30, 2019. Staff also informed the AB that staff will be meeting with the Cove Shopping Center owner to discuss the temporary construction easement the District requires from the owner in order to complete the upgrade.

Staff also informed the AB that staff has submitted a Notice of Interest for a FEMA Hazard Mitigation Grant to fund the purchase of two backup generators and two automatic transfer switches, one set of each for Cove and Pamela Court pump stations. The FEMA grant, if awarded, would fund 75% of the cost of purchasing these generators and ATS elements, and the Zone would provide 25% in matching funds.

Item 5. East Creek Hydrologic and Hydraulic Study Update

Staff provided a handout of HEC-RAS modelling results to the AB that outlined the current recurrence interval capacity of East Creek, as well as cross sections of portions of the creek that were modelled with a lowered creek bed. Staff explained that the culvert at Cecilia Way is the limiting constriction for the portions of the creek upstream of the culvert, and that the culvert has a 25-year recurrence interval flow capacity (RIFC). The creek has reaches with varying levels of RIFC: 10- year, 25-year, and 100-year. Please see the handout attached to the meeting minutes for details. The creek reach of the 10-year RIFC is just upstream of the Cecilia Way culvert, and staff pointed out that a 10-year RIFC is often used in flow capacity design for storm drains. Staff also informed the AB that staff modelled lowering the creek bed in the 10-year RIFC area by 1.75 feet, and that the modelled results of this creek-bed lowering did not increase the RIFC in the 10-year reach. Staff pointed out that lowering the creek bed by more than 1.75 feet could lead to the potential for failure of the banks of the creek.

Item 6. Discussion on Potential Future Projects in Zone 4

JL and KO had previously requested that the AB consider three potential future projects (flap gates on the East Creek discharge pipes, sediment removal along East and West Creeks, and a new drainage pipe under Route 131). Please see staff report for details.

Staff reviewed the East Creek Drainage staff-report attachment, and noted there were three potential locations for flap gates or check valves along the two East Creek drainage pipes that run underneath Route 131. Staff did not recommend flap gates at the outfalls of the two pipes because pending sea level rise will make maintaining these flap gates difficult. Staff stated that the most ideal method, from a maintenance perspective, for impeding tidal flow upstream in East Creek would be placing check valves on the upstream concrete header where the two pipes cross Route 131. However, staff informed the AB that two days prior to this AB meeting, staff conducted a tracer dye test that confirmed that the storm drain inlet along Greenwood Cove Drive is connected to one for the East Creek drainage pipes under 131. This connection allows tidal flow to back up the East Creek drainage pipe and flood Greenwood Cove Drive during extreme high tide events (please see middle location on East Creek Drainage attachment for location details). After some deliberation by the AB, the following motion was made:

Action by Board: Recommend that staff evaluate engineered solutions to tidal impacts on the East Creek discharge pipes.

M/S: KO/JL, **Ayes:** All, **Nay:** None, **Abstain:** None

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Sediment removal from East and West Creeks was discussed by the AB. Based on the East Creek hydraulic modelling information staff provided under Item 5, the AB asked that staff continue the hydraulic analysis for East Creek, and that said analysis include modelling potential flood wall scenarios along the 10-year recurrence interval reach of the creek. The AB also asked that staff review the 2006 hydraulic modelling report conducted for West Creek and present the findings to the AB at the next meeting.

In light of the previous discussion of potential projects, the AB tabled the discussion of an additional East Creek drainage pipe under Route 131.

Item 7. Sea Level Rise Ad Hoc Committee Report

The ad hoc committee had nothing to report at this time.

Item 8. Annual Preventative Maintenance Work Program

Staff reviewed the current year and upcoming year preventative Zone 4 maintenance program. Please see staff report for details. Staff also reminded the AB that major pump maintenance for the Strawberry Circle pump-station pumps had previously been placed on a two-year cycle per pump. This was done because several years ago these submersible pumps experienced significant salt-water deterioration. The deteriorated parts were replaced with stainless steel parts, and the pumps were placed on a two-year major maintenance cycle instead of the standard 6-year cycle the District uses for other pumps stations. Several of these two-year cycles have passed with no noted salt-water deterioration. One of the pumps is due for major maintenance in FY 2018-19, and if there is no salt-water damage, staff intends to place the Strawberry Circle pumps on a 6-year cycle. This revision to the maintenance schedule will result in a significant cost savings over time.

Item 9. Zone 4 and 4A FY 2018-19 Budget Review

Staff presented proposed FY 2018-19 budgets for Zone 4 and Zone 4A. Please see staff report for details.

Action by Board: Recommend that the District Board of Supervisors approve budgets.

M/S: JL/KO, **Ayes:** All, **Nay:** None, **Abstain:** None

Item 10. Schedule Next Meeting

The AB discussed the next meeting, and it was tentatively decided to hold it during the second week of September 2018, or sooner if there is a need for the AB to meet.

The meeting was adjourned at 8:27 PM.



RS 1509.13

EAST CREEK

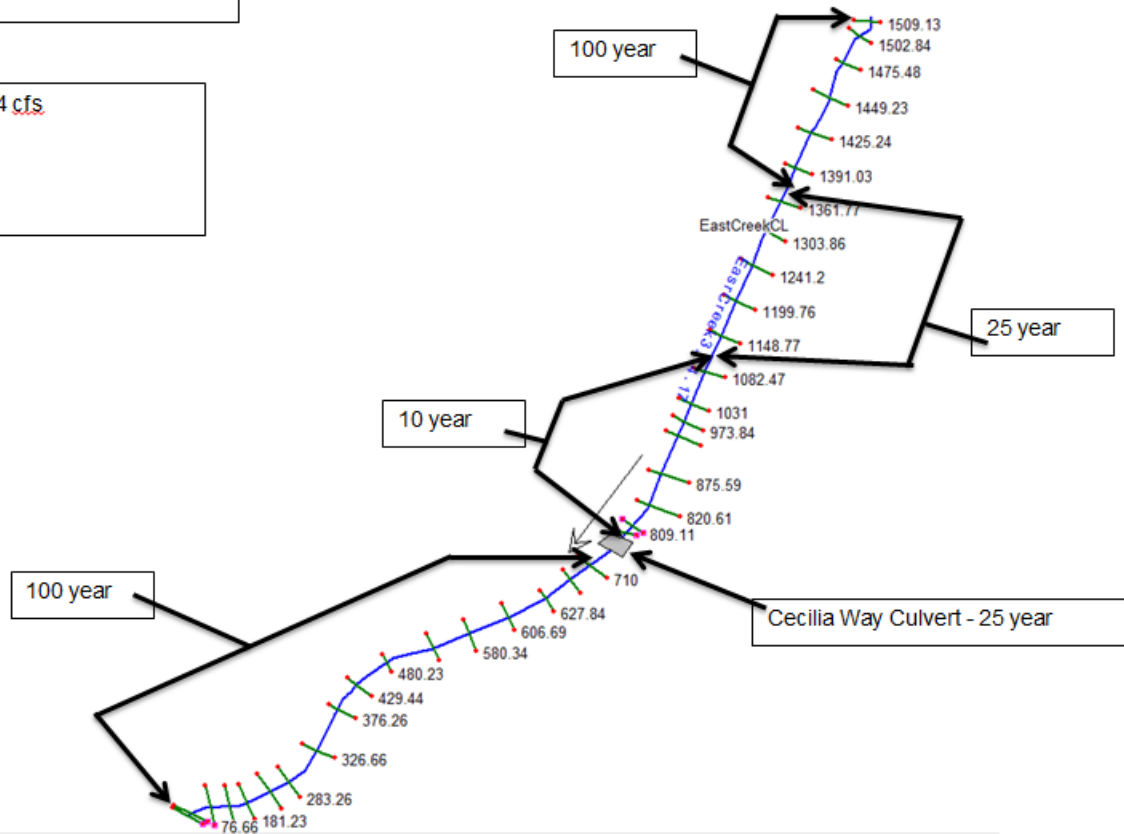
RS 1082.47

Cecilia Culvert

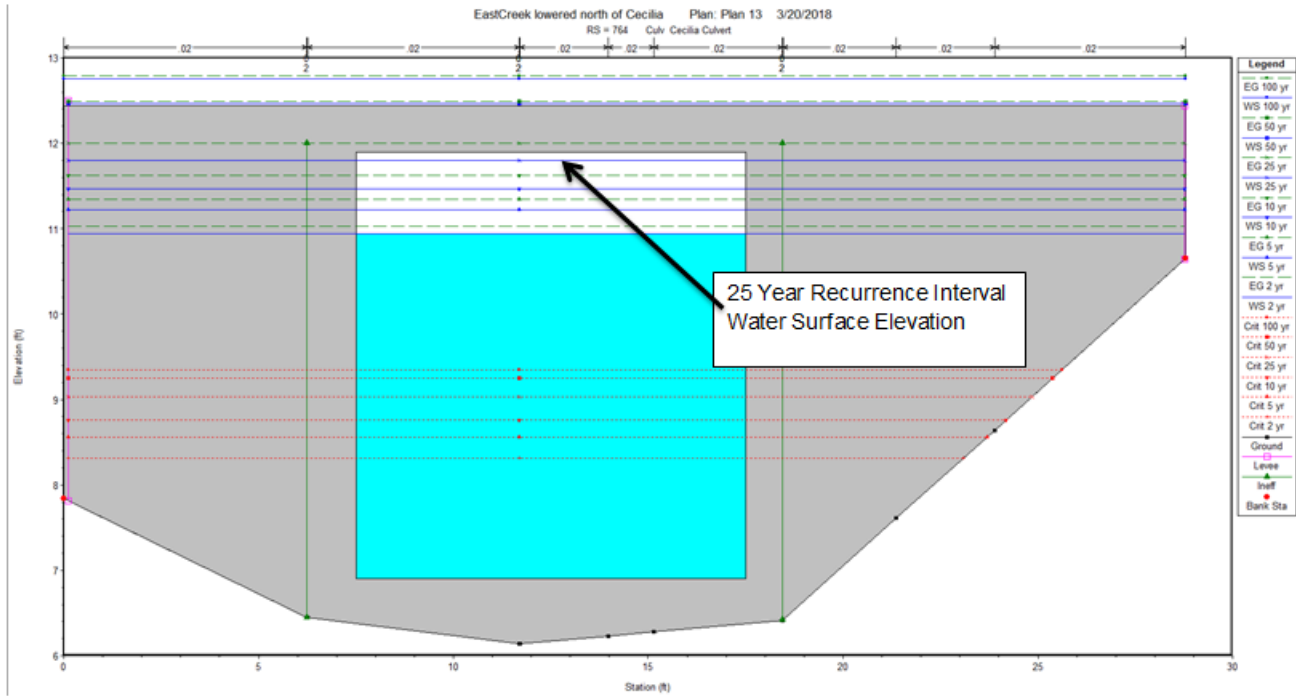
RS 76.66

**East Creek Recurrence Intervals –
Existing Conditions**
March 22, 2018

10 Year Flow Rate = 144 cfs
 25 Year = 177 cfs
 50 Year = 205 cfs
 110 Year = 233 cfs

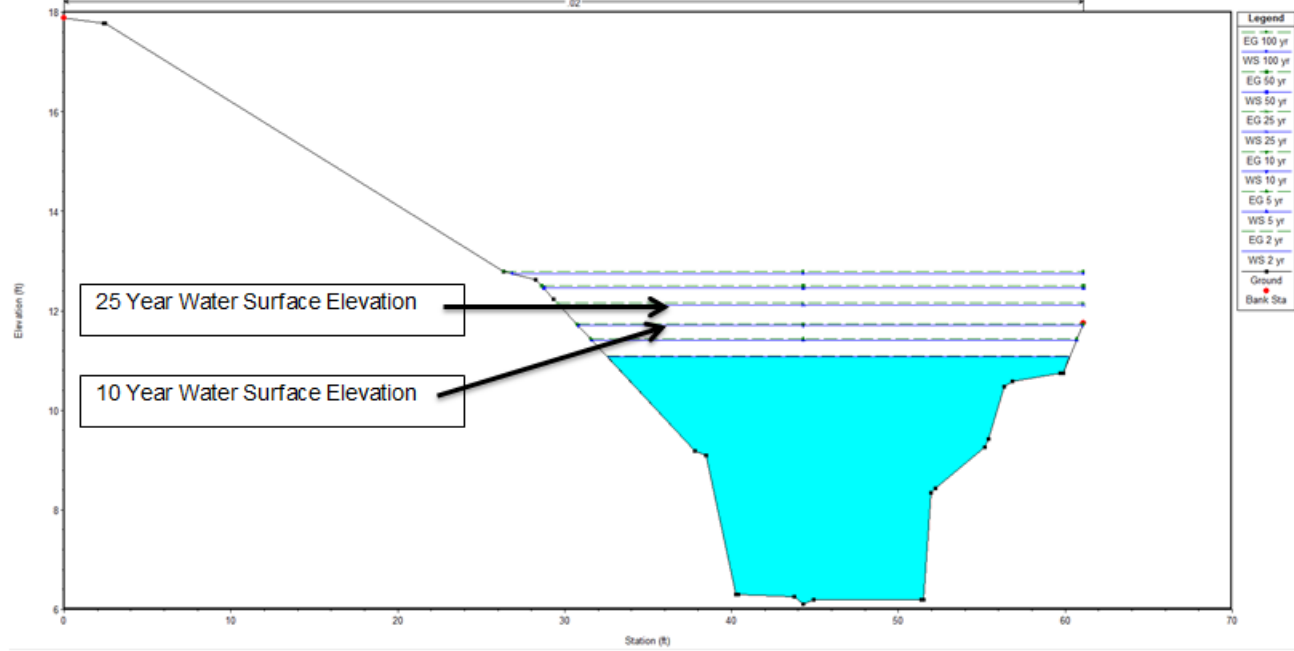


Cecilia Culvert – Existing Conditions



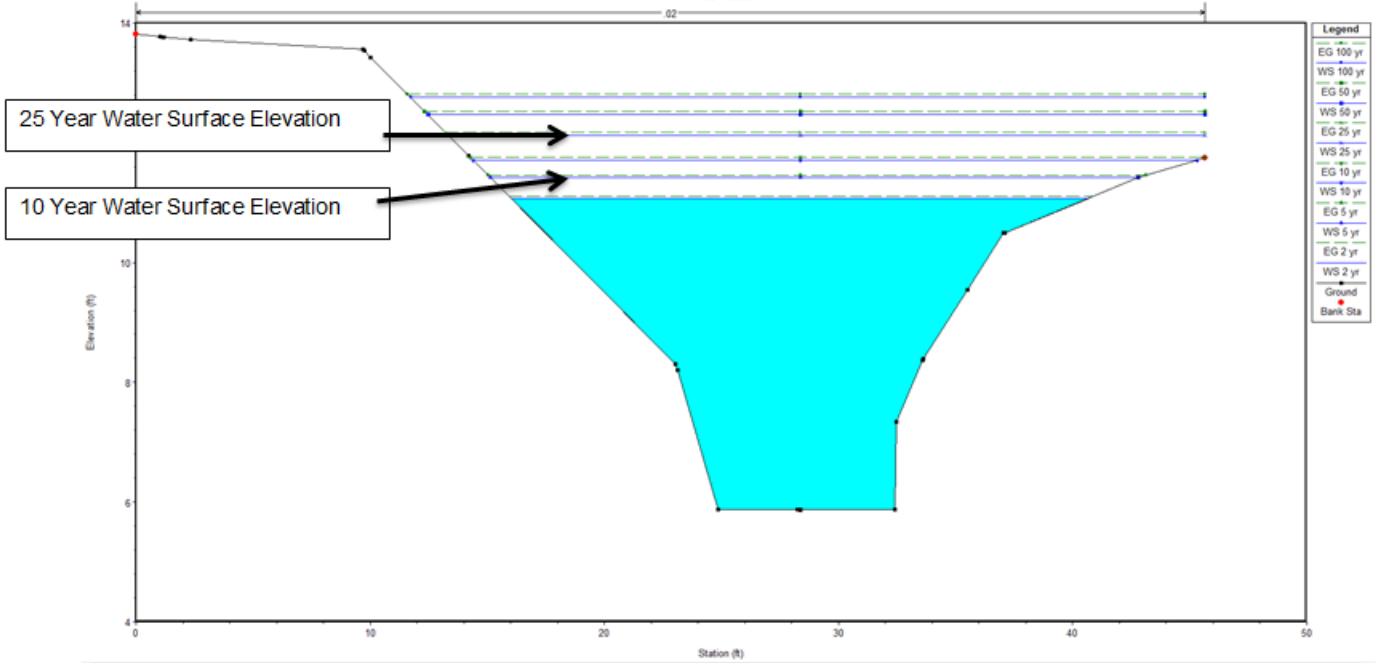
RS 820.61 – Modelled 1.75 feet lowered creek bed

EastCreek lowered north of Cecilia Plan: Plan 13 3/20/2018
RS = 820 61

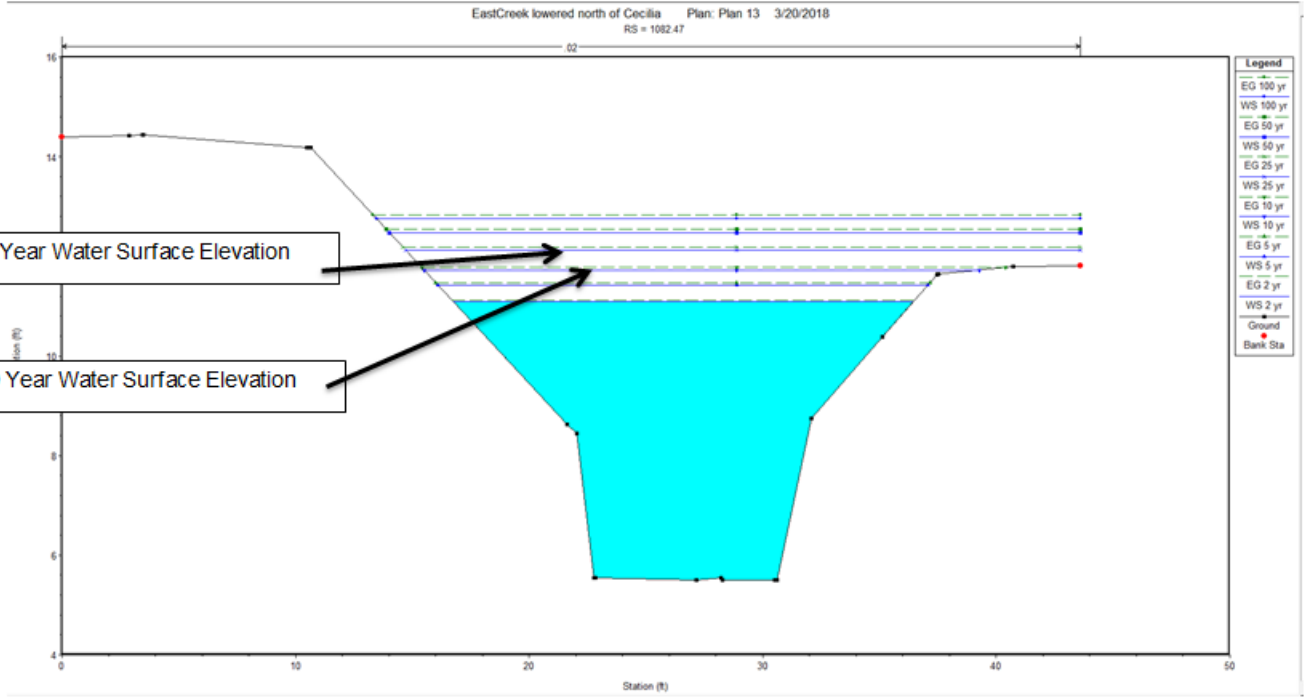


RS 973.84 – Modelled 1.75 feet lowered creek bed

EastCreek lowered north of Cecilia Plan: Plan 13 3/20/2018
RS = 973.84



RS 1082.47 – Modelled 1.75 feet lowered creek bed



RS 1148.77 – Modelled creek bed

EastCreek lowered north of Cecilia Plan: Plan 13 3/20/2018
RS = 1148.77

