

of culvert No. 3, located under Elkhorn Road. The tide gate, one of seven gates that helps stops the flow of saltwater from Elkhorn Slough into the Carneros Creek, is presumed to have gone missing during the 2017 winter storms.

On December 12, 2017, the Board approved an option to install a temporary plug in culvert No. 3 and inspect all seven culverts and tide gates for an estimated cost of \$25,000 (Phase I). Upon evaluation of work required to complete temporary repairs, it was determined that one additional tide gate had to be fabricated and installed at culvert No. 1 along with the missing tide gate at culvert No. 3 (Phase II). Staff undertook Phase I and Phase II simultaneously to maximize efficiencies and minimize costs. As a result, the total cost of Phase I and Phase II work was estimated at \$175,932.

On April 3, 2018, the Board authorized appropriations in the FY 2017-18 Capital Projects Fund 402-3000-8468 -RMA014 for the completion of Phase I and II in the amount of \$175,932. The Board was informed that an evaluation on how to proceed with permanent repairs (Phase III) would be forthcoming. Following approval of funding, staff retained Granite Construction as the primary contractor under a Job Order Contract (JOC). Power Engineering Construction Company, a marine specialty civil engineering company, was retained as the subcontractor to conduct the underwater evaluation.

Phase I - Completed (Cost \$33,861):

On May 16, 2018, crews conducted pre-dive and underwater inspections on the condition of all culverts and tide gates under Elkhorn Road. Experienced divers performed detailed examinations, continuously reporting back on findings and potential concerns. To assist with the process, a live video feed was provided throughout the inspection through the use of an underwater camera mounted on the diver's helmet. Information obtained through the live feed, coupled with inspection comments from the diver, was used to develop an engineering assessment.

Inspection activities identified a broken hinge on the tide gate at the end of culvert No. 1 (see Attachment A). As a temporary measure, crews secured the tide gate with a rope (see Attachment B) to avoid losing it. Replacement of the culvert No. 1 tide gate was added to the scope for Phase II due to the immediate need for repair. The inspection further identified deteriorated aluminum riser supports on the remaining five tide gates (on culverts Nos. 2, 4, 5, 6 and 7) that are close to failing and in need of replacement. The replacement of the remaining five tide gates would be Phase III, if funded.

The inspection divers also assisted with the installation of two (2) inflatable storm drain tubes in culvert No. 3. The inflatable storm drain tubes stop the flow of salt water through the culvert. The tubes were inserted around 10 feet from each end of the culvert and inflated to 22PSI. Air hoses with padlocked air pressure gages were secured to the bank for access to monitor pressure. Weekly checks are conducted by staff to ensure that pressure levels remain at 22PSI.

Phase II - Pending (Cost \$142,701):

Repair activities for Phase II are scheduled to occur in late September 2018. As part of this phase, the damaged tide gate on culvert No. 1 and inflatable plugs in culvert No. 3 will be removed and replaced with new tide gates. It was anticipated that the repairs under phase I and II would have been completed in the prior fiscal year and therefore was not included in the FY 2018-19 Adopted Budget for Fund 402. Staff requests this Committee's support to authorize an increase in appropriations in Fund 402, Appropriation Unit RMA014 in the amount of \$142,701, where the financing source is unassigned fund balance.

Phase III - Pending (Cost TBD): Staff is currently working on a cost proposal for replacing the remaining five tide gates. Once completed, staff will return to this Committee and the Budget Committee to consider

support prior to seeking Board approval.

OTHER AGENCY INVOLVEMENT:

Staff has worked with the Elkhorn Slough Foundation during this process. Initial discussions were held with the following regulatory agencies prior to the start of the project: US Army Corp of Engineers (USACE), US Fish and Wildlife Service (USFWS), State Department of Fish and Wildlife (CDFW), California Coastal Commission (CCC), and Regional Water Quality Control Board (Water Board).

FINANCING:

In FY 2017-18, the Board approved the use of Capital Project Fund 402, fund balance 3101 in the amount of \$175,932, where actual costs incurred through June 30th totaled \$33,861, leaving a balance of \$142,071 to complete the project. The remaining project budget was not included in the adopted FY 2018-19 budget, as during the budget development time, staff anticipated the project would be completed by June 30, 2018. Staff will return to the Budget Committee (BC) to request increasing the FY 2018-19 Fund 402, Appropriation Unit RMA014 budget to appropriate the remaining balance of \$142,071 to complete Phase I and II. Additionally, a cost proposal for Phase III is currently in the development stages and staff will come back through CIC and BC before requesting any additional appropriations from the Board of Supervisors.

BOARD OF SUPERVISORS STRATEGIC INITIATIVES:

The project provides infrastructure needed to a County road and regulate tidal waters that help protect agricultural wells and ecological conditions in the area. The recommended action supports the following Board Strategic Initiatives:

- Economic Development
- Administration
- Health & Human Services
- Infrastructure
- Public Safety

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Attachments:

Attachment A - Picture of Broken Tide Gate

Attachment B - Picture of Temporary Fix Securing Tide Gate