

CENTRAL VALLEY FLOOD PROTECTION BOARD

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September 15, 2016

Mr. Patrick Britton
Environmental Compliance Specialist
Ducks Unlimited, Inc.
3074 Gold Canal Drive
Rancho Cordova, CA 95670-6116

Re: Permit Application for Dredging Operations near the M&T Chico Ranch Pump Intakes

Dear Ms. Britton:

Central Valley Flood Protection Board (Board) Staff has reviewed your permit application to conduct in-stream dredging of sediment from the Sacramento River near the M&T Chico Ranch Pump Intakes. The removal of sedimentation will allow parallel sweeping flows at the pump intake site in order to maintain the functionality of the M&T Chico Ranch/Llano Seco Rancho Fish Screen Facility. It is anticipated that up to two (2) dredging cycles may be required in subsequent years to complete this work. This dredging is considered an interim measure while a more permanent solution is being sought. Permit No. 16561 was issued by this office on June 24, 1996 for the intake pipes and fish screen to the M&T Chico Ranch pump station that constitute the M&T Chico Ranch/Llano Seco Rancho Fish Screen Facility.

Board has determined that the proposed work described in the application is considered maintenance. Pursuant to Title 23, Division 1, Article 3, Section 6(d) of the California Code of Regulations, permits are not required for maintenance activities as defined in Article 2, Section 4 of this title. Please contact this office when a permanent solution to the sedimentation problem has been decided to inquire if a permit will be required for the proposed work.

Please be advised that additional authorizations may be required from other federal, State, and local agencies to perform the in-river dredging.

If you have any questions, please contact Ilene Wellman-Barbree of my staff at (916) 574-0375, or by email at Ilene.Wellman-Barbree@water.ca.gov.

Sincerely,

A handwritten signature in blue ink that reads "Mitra Emami".

Mitra Emami P.E.
Acting Chief Engineer
Central Valley Flood Protection Board

Attachment: Project Description
cc: Mr. George (Wade) Wylie, DWR (via electronic copy)

Detailed Project Description

The current sedimentation patterns in the river have resulted in the expansion and downstream migration of the gravel bar. Because the portion of the bar that must be removed during the next dredge cycle to protect the functionality of the pump intakes is inundated at relatively low flows, the “dryland” bar dredging methods that included crossing Big Chico Creek in the previous 2001 and 2007 short-term dredging operations are not a viable option. The Proposed Action/Project, therefore, consists of a suction dredging and spoils disposal on the existing spoils stockpile, which also would likely be utilized for any future dredging operations should they be necessary.

Dredging would entail removing in-river sedimentation from the Sacramento River to allow parallel sweeping flows at the pumping site in order to maintain the functionality of the pumping facility while continuing to meet NMFS and CDFW fish screen criteria. It is anticipated that up to two dredge cycles (during separate years) could occur, potentially removing up to 100,000 cubic yards of material per dredge cycle, in the area immediately upstream, adjacent to, and downstream of the M&T Pumps Facility via suction dredge. Due to production capacity constraints associated with suction dredging, the actual amount of material removed may be less than 100,000 cubic yards per dredge cycle. The soonest the first dredge cycle would be proposed is 2015. Specific features associated with the Proposed Action/Project, including locations for dredging, staging and spoils disposal, and rock-toe revetment are included in Figure 2-1 to show the relative locations of these components.

Before dredging is initiated, bathymetric data will be used to prioritize the location where the greatest benefit can be achieved (e.g., areas with the greatest volumetric amount of material along the east bank of the river in front of the M&T Pumps Facility), and dredging operations would then move westward from this location, as time allows within the authorized in-river work window. After completion of the initial pass, the dredge barge will be maneuvered by the skiff boats back to the top of the sediment field of the preceding pass, and the process will be repeated as necessary to cover the width of the gravel deposit. Due to the size of the sedimentation field, it is anticipated that the barge and suction dredge will make at least 2 or 3 passes, with each pass beginning at the upstream end of the sediment field and dredging in the downstream direction.

The production rate of in situ sediments dredged during a given period is anticipated to be about 90 cubic yards per hour using a 550 horsepower motor. The 550-horsepower motor will pump approximately 7,000 gallons of water per minute (420,000 gallons per hour) with enough force to mobilize and pump coarse material through 12-inch polyethylene pipeline with a minimum number of bends to a containment area located approximately 1,600 to 2,500 feet away (note that the distance to the containment area varies based upon where in the sediment field the measurement is taken [i.e., upstream end or downstream end]).

To support a safe dredge operation, signage and warning buoys would be placed both upriver and downriver from the active dredge area notifying boaters, fishermen and other water users of the

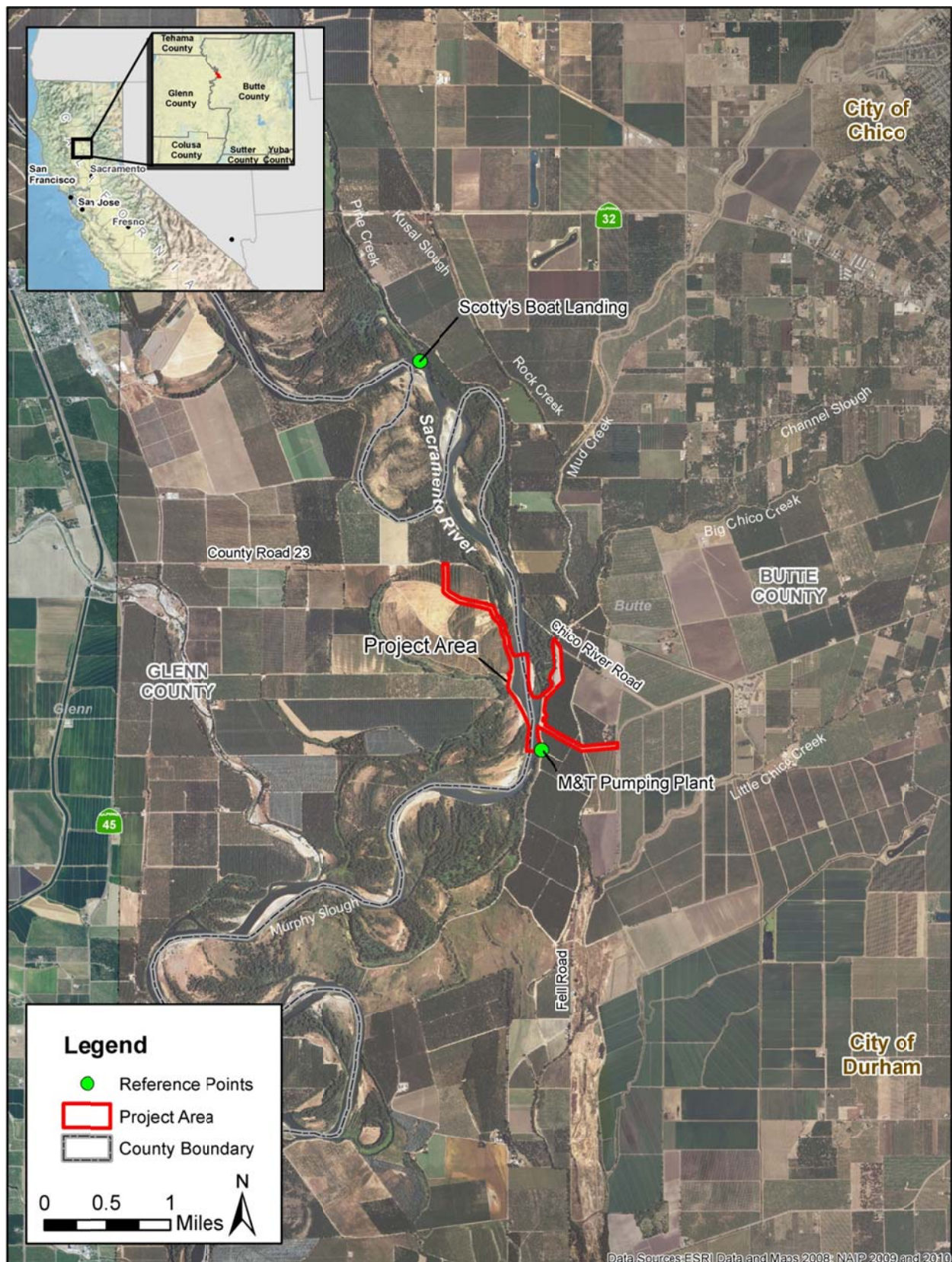


Figure 1-1. Project Vicinity

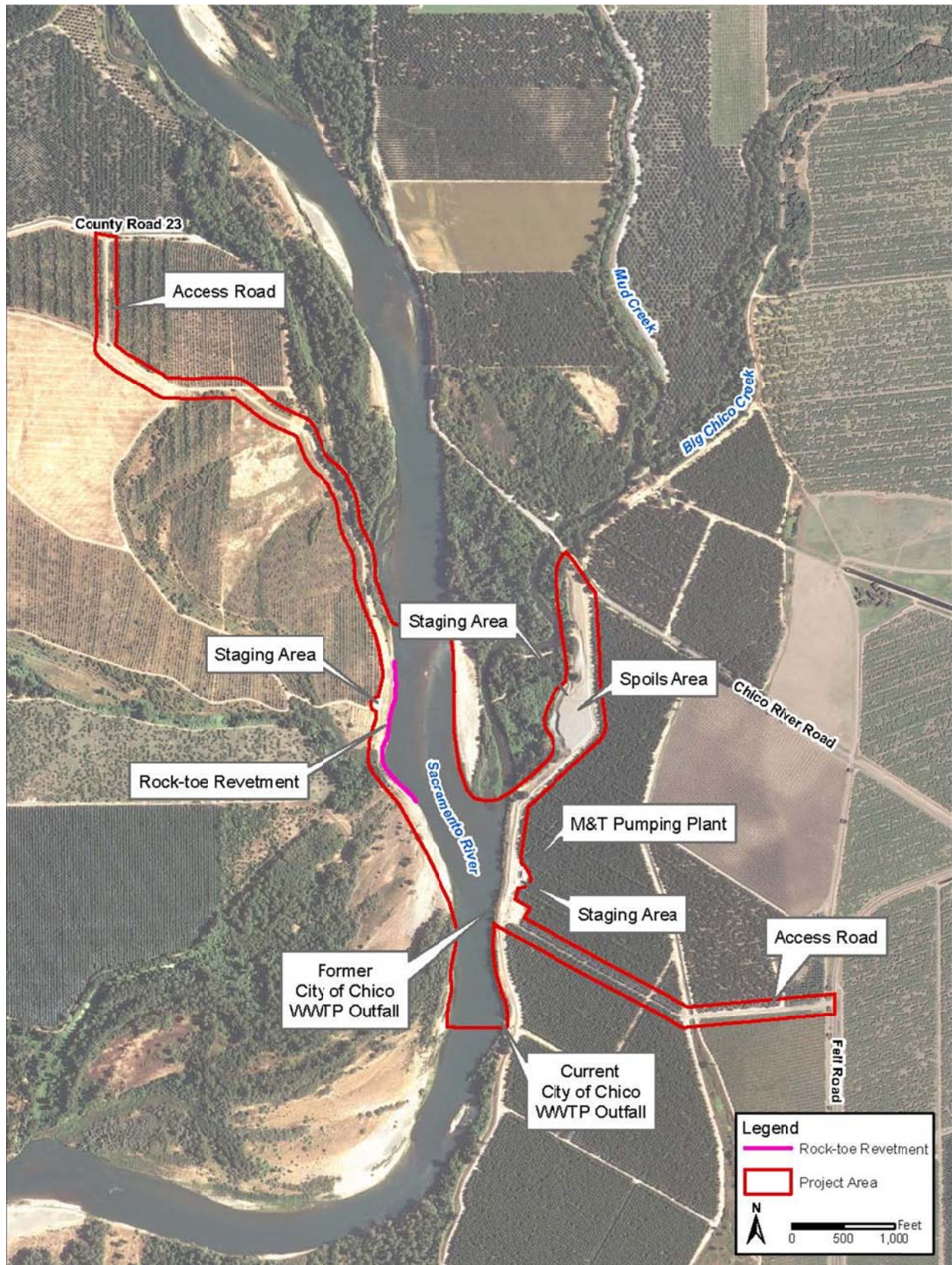


Figure 1-2. Action/Project Area

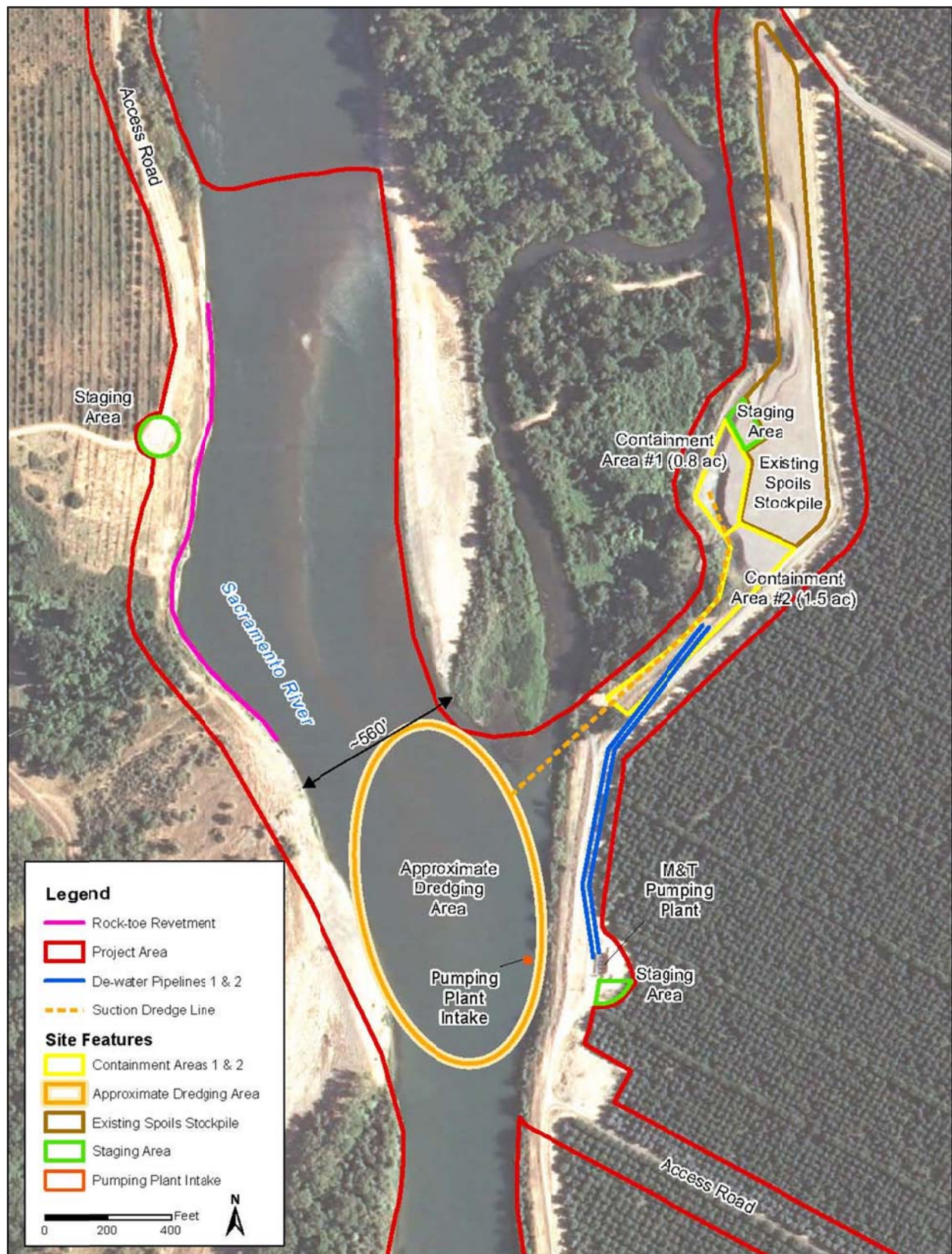


Figure 2-1. Proposed Action/Project Features.

dredge operation. The barge, flexible pipe, and auxiliary boats would be anchored and sufficiently illuminated (via solar or battery power) during non-daylight hours to maintain high visibility for boaters and other water users. A light plant with a self-contained generator also would be on shore, focusing light on the dredge barge. In addition, a night watchman would remain at the project site during non-working hours to respond to any unanticipated issues. Dredging operations (e.g., set-up, in-river dredging, moving equipment, dewatering and conveying spoils material to the stockpile) would be conducted about 12 hours per day, seven days per week.

In addition to the dredging site within the Sacramento River, equipment staging and access areas will be necessary. Two areas will be utilized for material staging and assembly of the dredge pipeline system on the east bank of the river, including a gravel parking lot at the M&T Pumps Facility and an area within the vicinity of the existing spoils location. These staging areas are shown in Figure 2-1.

The excavated material will be pumped to confined containment areas located upland from the dredge site and approximately 1,500 feet to the east on the M&T Ranch property. Two previous gravel bar extractions from the Sacramento River have occurred, one in 2001 and the other in 2007, resulting in approximately 300,000 tons of materials being stockpiled at this existing spoils area. Although the spoils disposal areas are located within the floodplain of the river, the storage site is not anticipated to significantly alter floodplain capacity, as described in Section 3.6 – Hydrology and Water Quality.

Two containment areas, bounded by 6-foot high berm along the west side of the existing stockpile, will be established within the area of the spoils disposal, just outside of the drip line of the existing trees (see Figure 2-1). Containment Area #1 is approximately 0.80 acre with a berm length of 75 feet. A Briggs Box Weir, or broad crested weir, will be placed in an embankment at the downstream end of Containment Area #1 for overflow into Containment Area #2.

Containment Area #2 is approximately 1.5 acres with a berm length of 720 feet. Containment Area #1 will receive the dredge spoils pumped directly from the river and Containment Area #2 will be available for overflow and serve as a siltation and settling pond area. Both containment areas will be fully enclosed so that no water discharged from the dredge spoils will re-enter the river.

Once the spoils have been pumped into Containment Area #1, a D-8 dozer will push the materials into a trap belt loader. The spoils will be transported by conveyor belt to the top of the existing stockpile. The D-8 dozer will alternate between uses and will also be utilized to spread the gravel material at the top of the stockpile. The D-8 dozer and trap belt loader will operate throughout the duration of the project. Although dependent upon the amount and rate of material extracted from the river and transferred to Containment Area #1, the trap belt loader and D-8 dozer are anticipated to operate approximately 4 to 6 hours per day due to the larger capacity of the moving and spreading equipment. It is anticipated that the majority of the gravel materials

will be added to the existing stockpile at the end of the project, with some portion of the dredged material remaining in Containment Area #1.

In the event that the water in Containment Area #2 exceeds the rate of absorption into the ground, two 5,500 gallon per minute capacity pressure pumps (commonly used for irrigation) will be used to pump the excess water from Containment Area #2 through approximately 1,100 feet of aluminum pipeline along an access road on the M&T Ranch property to a stilling well at the M&T Pumps Facility. The pumping plant will deliver the excess water to M&T Chico Ranch rice fields for decomposition and to the existing wetland system on the Llano Seco Rancho and the Llano Seco Unit of the SRNWR. Water routed from Containment Area #2 to the M&T Pumps Facility will not cause the pumping plant diversions to increase above permitted capacities. More specifically, diversions from the Sacramento River may be temporarily adjusted during dredging operations such that the total quantity of water (from the Sacramento River and runoff from Containment Area #2) flowing through the stilling basin would remain under the legally authorized volume of water that the ranches are allowed to take.

Project Impacts

The overall project impacts will be temporary and no loss of waters of the United States will occur. Figures 3-1 through 3-7 demonstrate the most recent bathymetric data (2013) with the proposed excavation limits (actual 2006 bathymetric data). The proposed project will provide for the continued water supply of more than 4,000 acres of wetland habitat in the Butte Basin.

Proposed Schedule

The entire dredging operation is anticipated to occur over a 137-day work period. It is anticipated that approximately 17 days would be necessary to mobilize, set up, and prepare the staging and containment areas. Additionally, approximately 13 days would be necessary to demobilize, remove equipment and materials, and grade the containment areas. Based upon equipment capacity, it is anticipated that the in-river work period would require about 107 days of dredging, occurring for 10 hours per day, 7 days per week. Equipment maintenance and non-dredging work would be performed about 2 hours each day, such that crews will be working 12-hour days. Although not anticipated, it is possible that unforeseen adverse conditions (e.g., high or low flows, weather) or equipment failures could occur. Therefore, the in-river work period for the suction dredging would be 107 days, extending from July 1 through October 15. The entire dredging component (i.e., equipment mobilization and site set up, dredging, spoils disposal, and demobilization) of the Proposed Action/Project would be implemented during the 137-day period between June 14 and October 28.

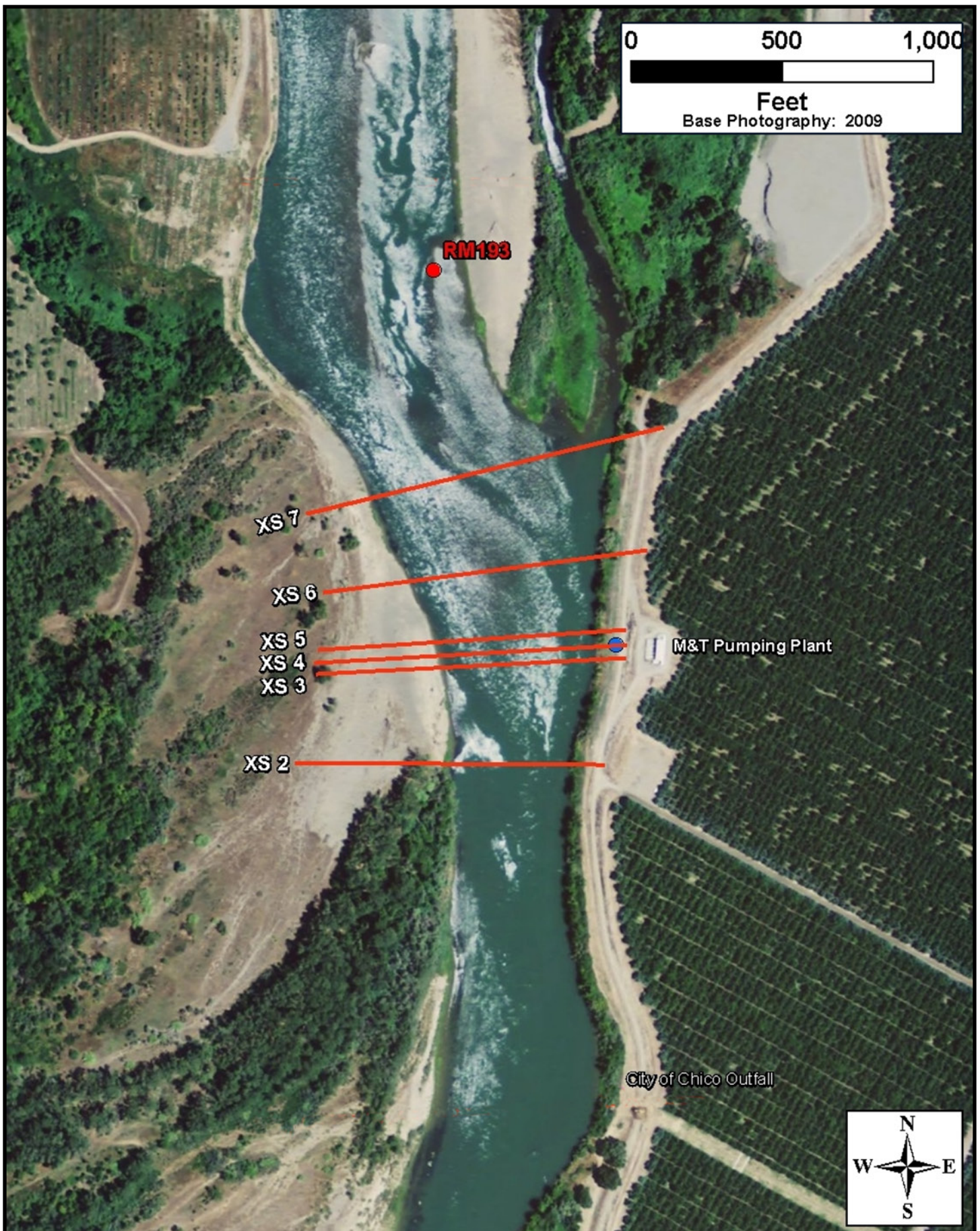


Figure 3-1. Locations of cross sections

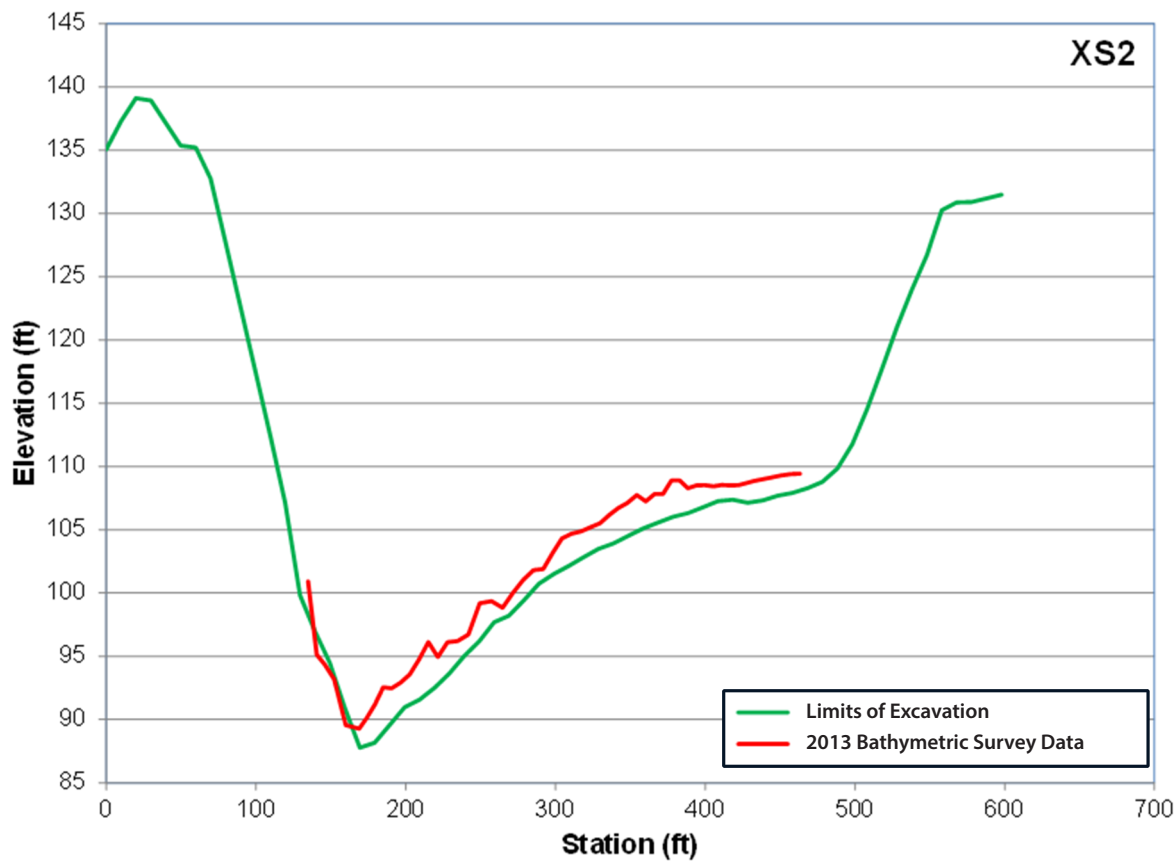


Figure 3-2. Limits of hydraulic dredging, proposed depth limits of sediment removal compared with 2013 bathymetry survey data at the original City of Chico outfall.

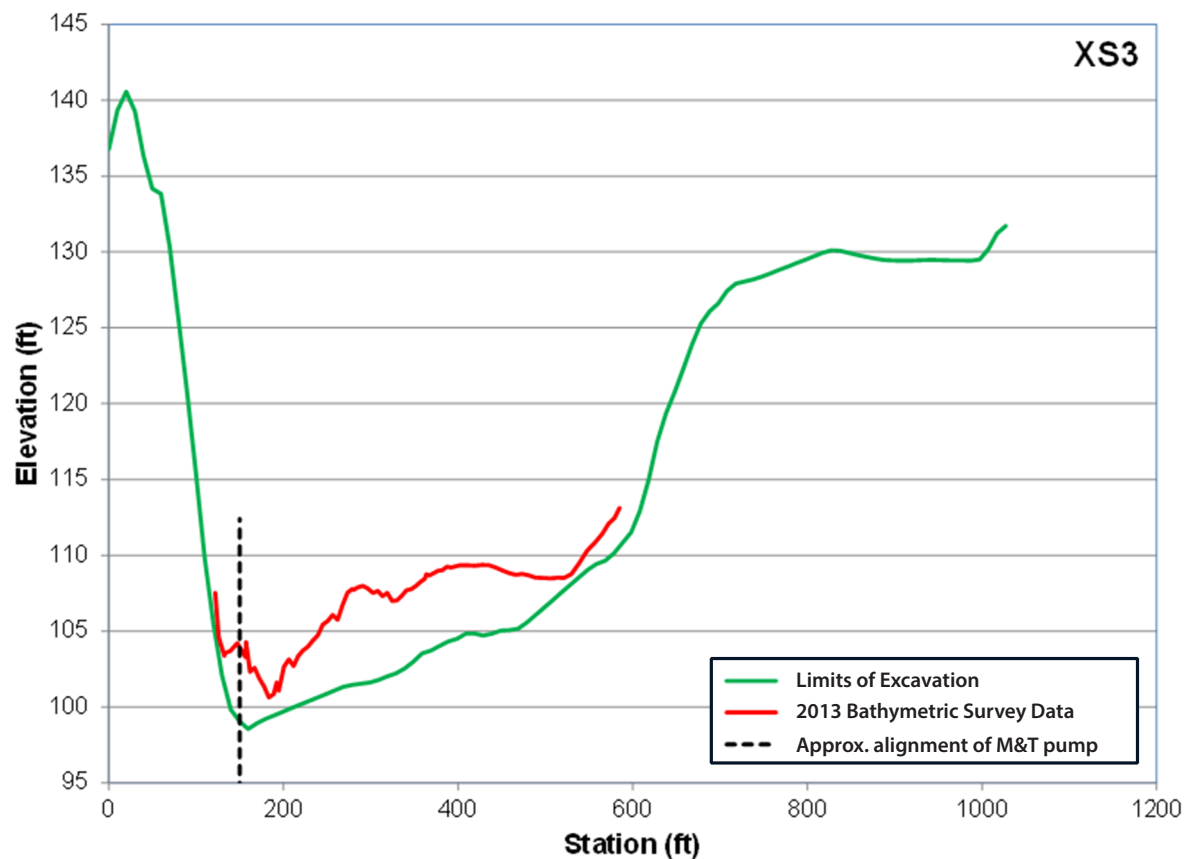


Figure 3-3. Limits of hydraulic dredging, proposed depth limits of sediment removal compared with 2013 bathymetry survey data immediately downstream of the M&T / Lano Seco fish screens and pump inlets.

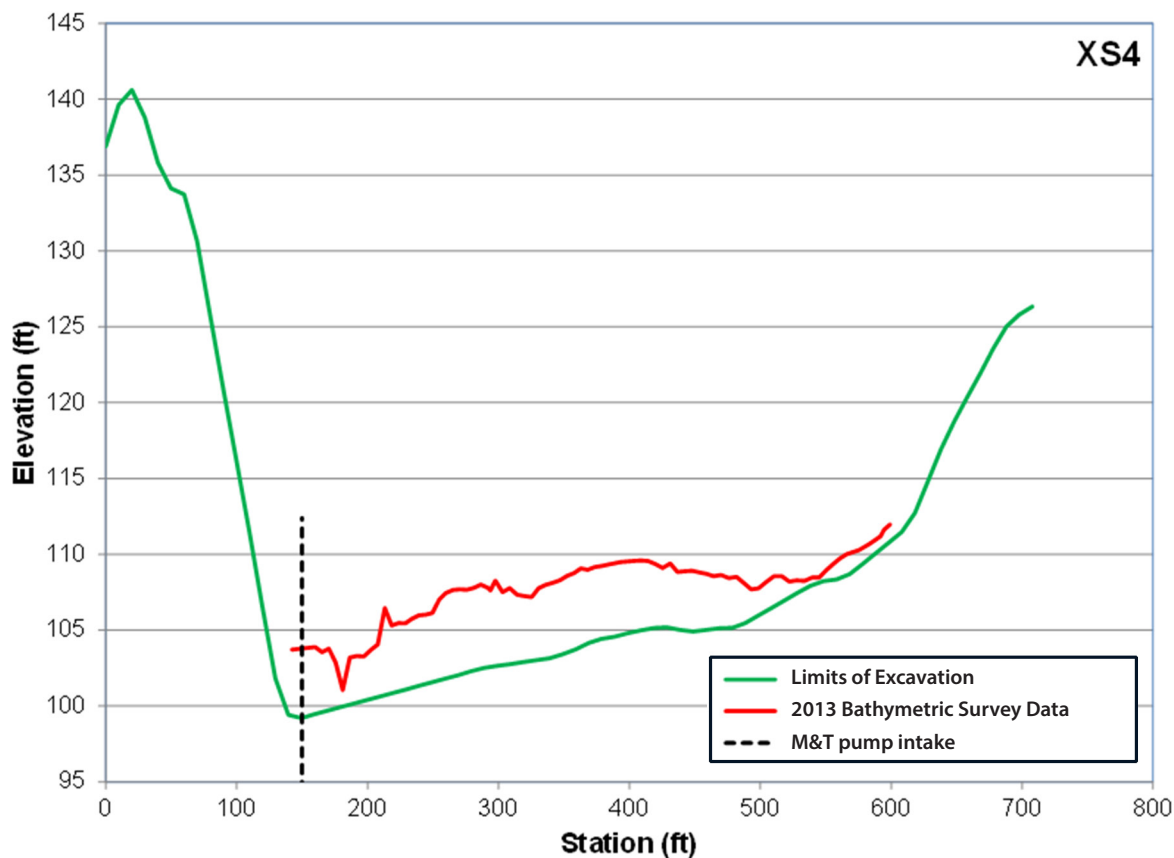


Figure 3-4. Limits of hydraulic dredging, proposed depth limits of sediment removal compared with 2013 bathymetry survey data at the M&T / Lano Seco fish screens and pump inlets.

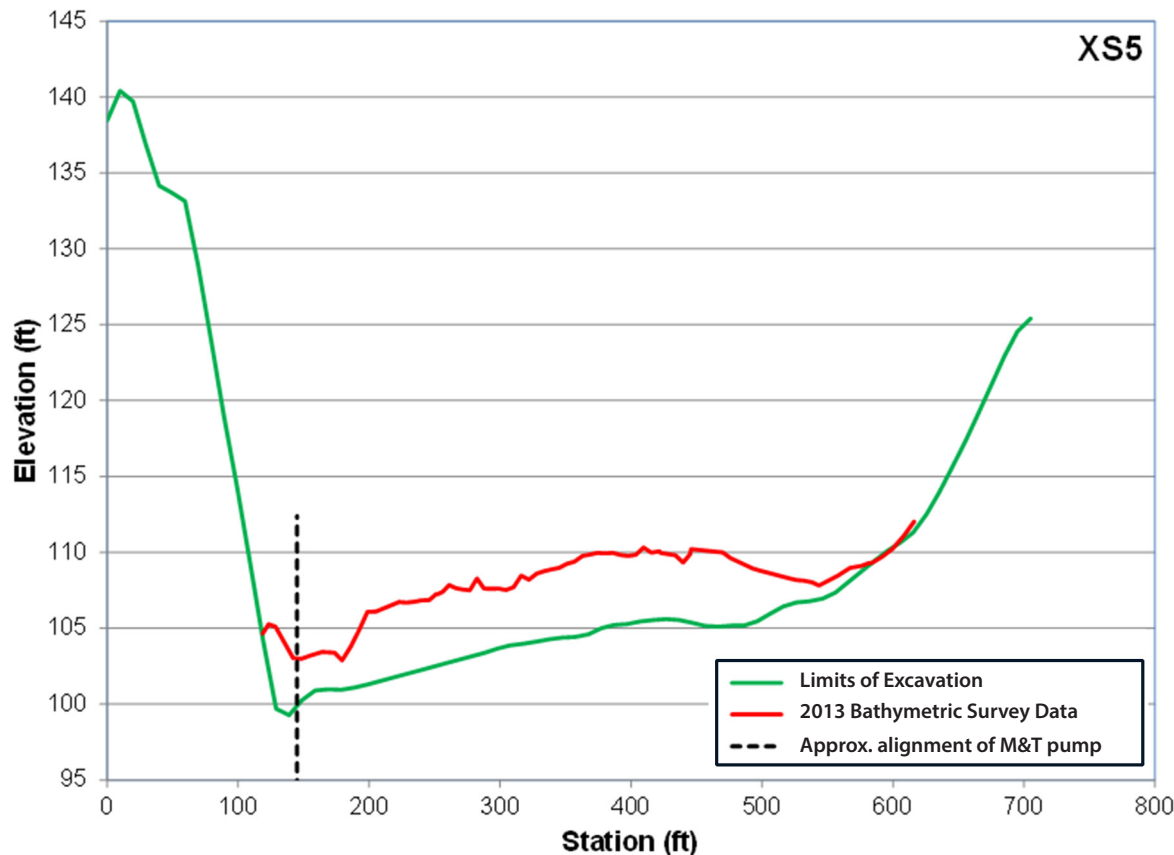


Figure 3-5. Limits of hydraulic dredging, proposed depth limits of sediment removal compared with 2013 bathymetry survey data immediately upstream of the M&T / Lano Seco fish screens and pump inlets.

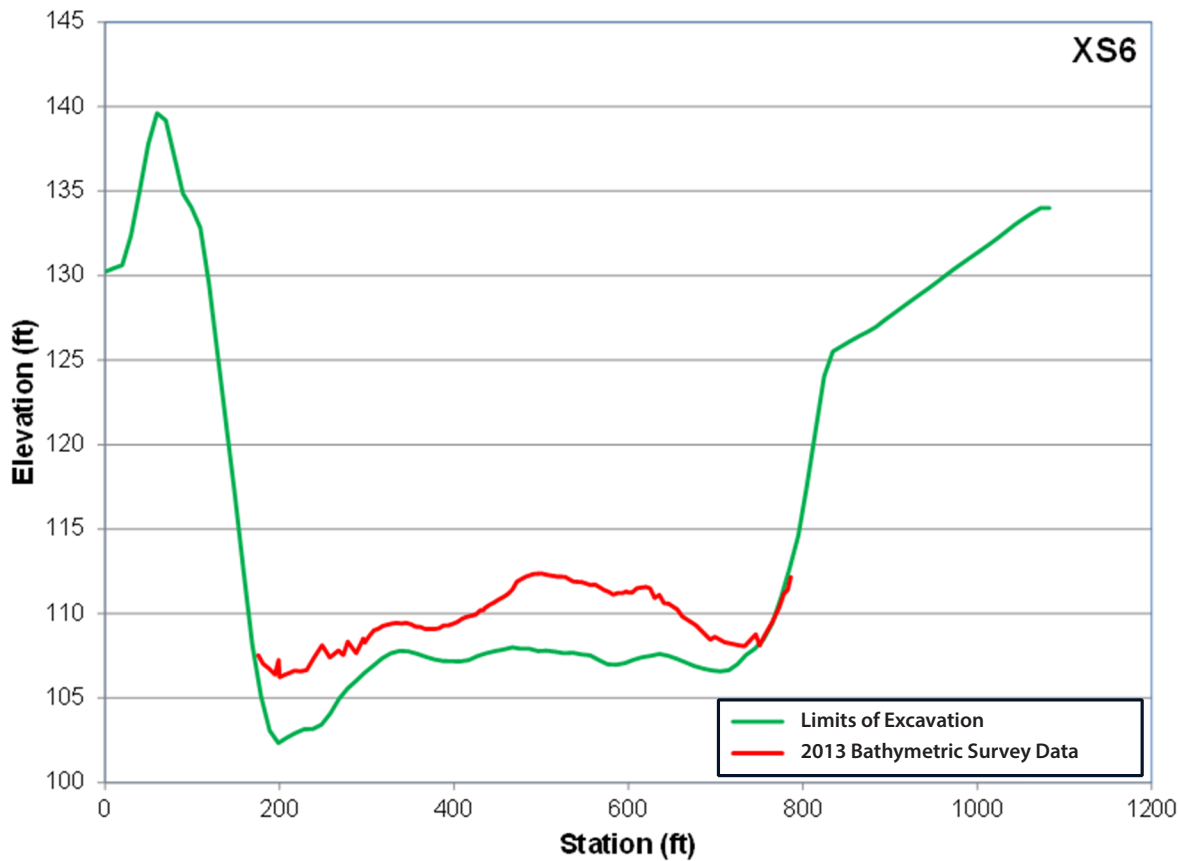


Figure 3-6. Limits of hydraulic dredging, proposed depth limits of sediment removal compared with 2013 bathymetry survey data upstream of the M&T / Lano Seco fish screens and pump inlets on the lower part of the migrating bar.

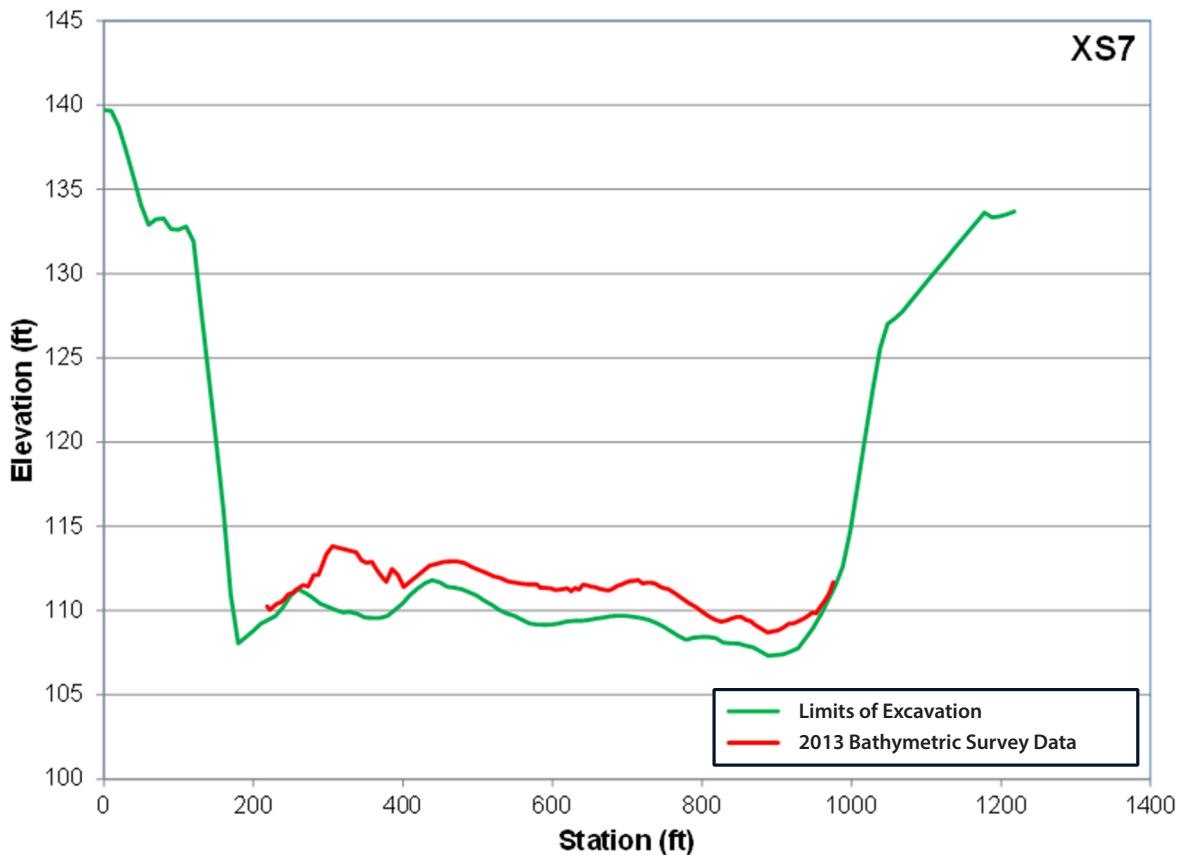


Figure 3-7. Limits of hydraulic dredging, proposed depth limits of sediment removal compared with 2013 bathymetry survey data upstream of the M&T / Lano Seco fish screens and pump inlets on the upper part of the migrating