

**UPPER GUADALUPE RIVER  
FLOOD RISK MANAGEMENT PROJECT  
San José, California**

**Fish and Wildlife Coordination Act Report**

**Appendix C2**

**DRAFT INTEGRATED  
GENERAL REEVALUATION REPORT  
& SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT**

**November 2022**



**US Army Corps  
of Engineers®**  
San Francisco District



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10/26/22

cc: Tessa Beach (tessa.e.bernhardt@usace.army.mil)

From: Steve Schoenberg, Senior Biologist, USFWS

Subject: staff memo- upper Guadalupe GRR, summary of concerns/issues discussed at 10/25/22 call

Hi again:

As we discussed at our call yesterday, the Corps would like to have some additional feedback to consider in its pending environmental document release. Earlier, this past August-September, the Corps had provided some additional plan materials and there had been a few prior Agency meetings that prompted my early concerns about a fundamental shift in the project design (see my 6/21/22 email and included thread). Since then, based on my input, the Corps prioritized some of our other project FWCA deliverables above this one, so FWCA work and the associated report on the upper Guadalupe GRR has been delayed. Nevertheless, we did have a discussion - repeating some of what I mentioned earlier - so, at your request, I'll try to provide a list of design/resource issues I think are important here. As a caveat, all of this is preliminary, staff-level, and subject to change. FWS has a scope of work for an official FWCA report that will look into these issues to the extent of funding and coordinate with other resource agencies on them, and we will commence with that as soon as possible, but it will not be done before your environmental document is published due to other priorities.

\*The current project is now to do widening in Reaches 7 and 8, to an extent that the backwater effect upstream is so reduced to eliminate the need for upstream work (Reaches 9-11c). The hope is that some vegetation will remain, and be supplemented by "asterisk"-like features (similar to the trials in Reach 10b). There are a couple fundamental problems with this. Foremost, is the loss of rootable soils. Cutting down that east bench will virtually remove all rootable soils and there will be perhaps 1-2 feet above lean clay, if that. It will not be enough to support vegetation. That type of clay does not transmit water laterally either; trees clinging on this tend to dip roots into the water as can be seen towards the downstream (northern) end of Reach 7. The extent to which these asterisk features can overcome this is uncertain.

Based on contracted consultant work, and experience, the local sponsor (Valley Water) has been long aware - and I agree - of the importance of soil depth and water holding capacity in sustaining vegetation on this river, especially at any distance beyond that which does not allow direct contact with river moisture. It doesn't mean the vegetation dies (although it might, under drought conditions), but it is often challenged - as in stunted, diseased, or overwhelmed by weeds. There are living examples of this type of shortfall in Segments 1 and 2 of the downtown project, Reach 10b of the upper project, and (in certain planting areas) Reach 12 of the upper project.

It's true that in reaches that pond (due primarily to bridge inverts), the trees can continue to pull water out of the stream, but the water doesn't always pond during very dry periods and is sometimes below the clay layer. This means the water must come from the soil.

\*Relatedly, significant lengths of the banks in this incised channel are undercut 2-4 feet laterally, so that if the bench is cut down, these undercuts and all the soil above them will be lost.

\*There seems to be an inferred conclusion that this additional loss in Reaches 7 and 8 is "worth" saving vegetation otherwise impacted in Reaches 9-11c; but there is not necessarily the same vegetation or the same quality of vegetation between these reach areas.

\*There is insufficient information about vegetation allowances in the floodway (again, I resist the term floodplain, which implies a longer duration than the hours-<1 day that would occur on the Guadalupe), I suspect it isn't much, and probably wouldn't grow much.

\* We discussed "islands", variously termed "small" islands, however, they cannot be that small to preserve the trees and be stable due to undercuts - as a general rule - I wouldn't cut any soils away below the dripline of existing trees (because rooted area tends to approximate that dripline) - which would mean at least 20+ feet away from the edge of bank and preferably more. And, wherever there are islands, creates an avulsion point where the river channel could cross out into the floodplain. This happens when trees falls and/or a debris jam ensues and the flow (unsplit for the first couple hundred cfs), then cuts into the floodway.

\*Habitat Evaluation - I do not concur with the choice of models, particularly the ones used in this analysis for reasons I stated on the call today and earlier calls/email exchanges. The salmonid model uses juvenile preferences for low velocity/shallow areas on large streams which are not only less relevant to this small stream, but can give results which mislead. FWS' Sacramento field offices haven't used this kind of limited model, instead favoring community models that include habitat elements, including the SRA model, or a modified rainbow trout model we have applied to other Corps projects (that model, by comparison, has a subset of the more common variables in the "greenbook" Raleigh 1984 model). As for the warbler model, this too is inappropriate by itself and doesn't capture the value of the higher canopy (or even the warbler's use of the higher canopy, as occurs in the western continent), snags, and other habitat components. The emphasis on the lower shrub canopy inevitably leads to very fast recovery rates and low mitigation ratios. Instead, we employ a suite of models - and if the warbler model is used, it would be a modified version that incorporates taller trees as well as shrubs (the Corps mentions it was used in 1998, but not here, without explanation). There are other, significant, issues with the habitat evaluation: that it was performed by the Corps (rather than by FWS), and the lack of field baseline measurements/use of desktop mapping, although, as stated above - I would not have used these models to begin with.

Would choosing different models change the end result? (i.e., that the proposed widening has less impact in area/value than the prior bypass) My guess is probably not, based on the limited review of the eco modeling writeup the Corps provided recently. However, net impact across all reaches isn't the only consideration in deciding the plan to construct. If the east bank vegetation fails as a result of the low benchcut, it creates a low-density gap gap that could result in lower quality habitat in a 1+ mile reach, including effects on shade/cover/temperature. The left (west) bank, although not impacted, will remain steep and subject to intermittent failures that have regularly occurred there.

\*At some point, there needs to be a full analysis and disclosure of the net environmental impacts of all reaches of the upper project; there was such an analysis in our 1998 FWCA but that was early and now outdated with respect to the future habitat conditions achieved. We conducted another HEP on reach 10b, but that too is outdated because it was rebuilt a different way after flood damage shortly after construction - that ended up with much reduced riparian area. We conducted a HEP on reach 12, which did yield net benefits. And, there is riparian benefit on Guadalupe Creek (a downtown project element)

in excess of the needs of that project which, per the 1999 dispute resolution memorandum, the parties (including FWS) agreed would be accounted and potentially assigned to other projects. My speculation is that it is likely that the net effect of all these actions is still sufficient to offset impacts of the TSP, but a better review of the quantities of area and habitat value is needed to support it. We are not scoped at present to conduct such a review.

\*This point pertains to the suite of fishery features (alcoves, fish ponds, 2% cross-slopes); I find myself still straining to understand the purpose and justification for any of them in this particular location even though I understand they may have originated from discussion with NMFS. Cross-sloping the floodway has the effect of reducing the soil thickness towards the stream even more, while not yielding any significant antistranding benefit; what it will also do is reduce the wildlife benefits of typical remnant shallow ponding that persists after a flood event recedes. The alcoves came into being as a sort of a velocity refuge for early salmonid life stages, however, I have seen this stream near bankful and know that - without any such alcoves - it has considerable diversity of velocities created by edge vegetation, wood, roots and (sometimes) in-water debris. There isn't enough in the designs or powerpoints or my notes to decipher the purpose/need for the fish ponds. There is a tradeoff between having these features, and the amount of soil (and soil water, and associated riparian support) removed to create them.

\*We also discussed to have a site visit; which would help me evaluate these design changes. It isn't an unfamiliar system (most recently, via Reach 7-8 mapping of overhead cover and undercut banks ~2014, 2017), but I haven't looked at upstream reaches in awhile and not since these revised designs.

\*Completion of flood control work in Reaches 7-8, whatever the design, is likely to have benefits in the forms of reducing the current frequency of high velocities throughout Reaches 6-8, which equates to a top of flood channel event and maximum velocities roughly every 10 years. This results not only in flooding, but excessive bank erosion and breakouts in Reach 6. Thus, I strongly prefer completion of the upper project over the current incomplete status.

Hope this helps the Corps understand my current concerns better. I look forward to working this out with you soon.

Steve (Steven Schoenberg)