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April 26, 2024

Via electronic mail

Ms. Olivia Townsend
Associate Biologist
Environmental Mitigation and Monitoring Unit
Valley Water
otownsend@valleywater.org

Re: WY 2023 Draft Mitigation and Monitoring Report

Dear Ms. Townsend:

The North Santa Clara Resource Conservation District (NSCRCD) provides the enclosed comments prepared by McBain Associates on the Water Year (WY) 2023 draft Mitigation and Monitoring Report (MMR). We thank Valley Water staff and consultants for their hard work in gathering the monitoring data and preparing the draft MMR.

Thank you for considering these comments. Please contact me, Scott McBain, scott@mcbainassociates.com, or John Bair, john@mcbainassociates.com with any questions.

Sincerely,

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Attorney for NORTH SANTA CLARA RESOURCE CONSERVATION DISTRICT

cc: AMT Members

McBain Associates' Comments on the WY 2023 Draft Mitigation and Monitoring Report

ES: Executive Summary

Most of the comments in the Executive Summary are also applicable to sections in the body of the report, so responses to Executive Summary comments should also be made in appropriate sections in the body of the report (i.e., we avoided redundant comments between the Executive Summary and body of the report).

ES.1: Background

First sentence, change "final" to "draft" for this report. First sentence in third paragraph, add "control" between "flood" and "projects."

"Mos" should be corrected to "MOs", and "Mys" to "MYs" throughout the document.

ES 4: Monitoring Results

First sentence in second paragraph, change years from 2022 to 2023. Second to last sentence in second paragraph, clarify flow rates at Masson and Hicks Road are on Guadalupe Creek since prior sentences are talking about Guadalupe River (for those that may not be as geographically aware).

Figure 1-1: Location Map

This is the primary map for locating gaging stations, so it would be helpful to add the names of the gaging stations used in the report to facilitate comprehension by the reader (e.g., "5023B: Guadalupe River above Almaden Expressway"). Yes, this is a lot of text, but there is room for additional text on the figure, particularly if a leader is added. Also do a consistency sweep on how the gages are named in the report. Some text says "at Almaden Expressway" and some say "above Almaden Expressway". Likewise, for Guadalupe Creek at Masson, it is variably named, and the main thing is that the name should clearly convey that the flows reflect what is actually in the creek downstream of Masson Dam rather than above the dam.

Figure 1-2: Downtown Project Map

Suggest moving the Coleman Avenue text closer to the river/bridge, since the "below Coleman Avenue" fish passage site is repeatedly referenced in the report.

Section 2.4.1: UGRP Reach 6 AHIP: Revegetation Monitoring

We agree with the recommendation that all future AHIP surveys use the UGRP MMP 0 to 3 rating scale (dead, poor, fair, or good) to assess health and vigor.

Section 2.4.2: UGRP Reach 6 AHIP: Suitable Habitat Area

We tentatively support the recommended increase from +/-5% to +/-20%, but just need to be careful not to go above 20%, as this will likely start resulting in reach changes in habitat area resulting from differences in flow (inundated area). As an example, if flows are at 20 cfs (midway through the 10-30 cfs target range in the AHIS monitoring plan), the +/-5% criteria result in 18-22 cfs, whereas the +/-20% results in 15-25 cfs, and the difference between 15 cfs and 25 cfs could be substantial depending on the channel morphology. We recommend that a sensitivity analysis be conducted using the hydraulic model at the two sites to assess the difference in suitable habitat (or wetted area) using +/-5%, +/-10%, and +/-20% flows at a typical winter baseflow (e.g., 15-20 cfs) to get a better

understanding of the sensitivity of the flow range to suitable habitat or wetted area, and have that help support a revision in the flow criteria.

Section 3.1: Local Environmental Conditions

As mentioned in the Figure 1-1 comments, update gage names for consistency and clarity on what they are measuring (e.g., Table 3-2, Figure 3-6, Figure 3-7). Similarly, be clear when describing flows what location is being described (e.g., last sentence in paragraph below Table 3-2 should clarify that 5,040 cfs is at the "upstream of Hwy 101" gage).

Figures 3-5 and 3-7 should be stacked from top to bottom on a full page so that they can be enlarged, as the current text is too small to read.

Because the AHIP monitoring is using flood frequency from the 5023B gage, there should be a flood frequency summary for that gage too, perhaps add a column to Table 3-4 for 2021-2023 flood peaks representing the time span for the AHIP project. The flood frequency is referenced at the top of page 3-26.

Table 3-5: Fish Passage Impediments

Clarify in the footnote that the topic is steelhead, chinook, salmonid juveniles, or smolts. There are some similar vague references to "juveniles" in Section 3.5.1.3, and probably elsewhere, so may want to do a search and refine to clarify what types of "juveniles" and/or "smolts" are being discussed.

Section 3.5.1.3: Comparison to Measurable Objective

The table reference in the first sentence of WY2023 Results should probably be Table 3-5 rather than Table 37.

Section 3.6: UGRP Reach 6 AHIP

This introductory paragraph should elaborate on what the reference reach is, and why it was developed (bottom of page 8 in the AHIS monitoring plan), since it is used in Figure 3-8.

Section 3.6.2: Topographic Surveys

As mentioned above, the hydrologic summary of recent (2021-2023) peak flows and associated flood frequency at Gage 5023B is needed in Section 3.1. Flow magnitudes are described in this and subsequent sections, sometimes without clarity on which gage is being referenced, so a global search and elaboration would be helpful.

Section 3.6.2.1: Topographic Surveys-Summary of Methods

We recommend that the 25-ft cross section survey approach be changed to be a grid-based (with break lines) topographic survey approach, because as the sites evolve and more topographic diversity occurs, the cross-section approach will provide inferior topographic representation compared to a grid/breakline-based approach. Given how small the sites are, this will not meaningfully increase the field survey effort.

Section 3.6.3.3: Tracer Rock Study-Comparison to Measurable Objectives

Agree with the recommendation that monitoring continue to assess cumulative gravel mobility to inform Phase 2 Design Process, and in particular, calibrate hydraulic and bed mobility model to

better inform Phase 2 Design Process. We recommend focusing on model calibration at Site #2 since the hydraulics are simpler and the placed gravels at that location are very near the bed mobility thresholds at the observed 2023 peak flow. Site #1 is a much lower priority given the complex hydraulics due to the tree in the river, and the topographic complexity caused by the tree and 2023 gravel movement.

Section 3.6.4: Suitable Habitat Area

It is a little unfortunate that the Measurable Objective in the 2021 AHIP Monitoring Plan only focuses on juvenile steelhead rearing habitat, and doesn't include a metric for Chinook salmon spawning habitat, as that is intended to be a primary benefit of gravel augmentation (in addition to grade stability). Part of the justification of the tradeoff of adding oversized material for the grade stability objective was that a wide range of smaller gravel sizes would be included in the augmentation mixture, such that as the channel adjusted, the spawnable sized gravels in the overall mix could be sorted into spawning habitat during high flow events.

Section 3.6.4.2 and Section 3.6.4.3: Suitable Habitat Area-2023 Results and Comparison to MO

First, to avoid confusion, the results summary should call the downstream reach "Reference Reach" rather than Phase 2. While they are the same general location, the purpose for comparison is different. Recall that the reason for selecting a reference reach was because pre-implementation habitat conditions could not be documented because the channel was dry, and thus a downstream reference reach was selected. The analytical purpose of the reference reach was not described in the 2021 AHIP monitoring plan and should be clarified. Table 3-10 implies that we're comparing habitat between the two, but perhaps a better comparison would be whether suitable rearing habitat is changing over time at the Phase 1 site compared to a reference reach. For example, if the Phase 1 treatment site is increasing (or decreasing) habitat and the reference reach is remaining stable, it tells us how the treatment site is evolving with respect to a reference reach that has not been treated. It does not appear that suitable habitat area was mapped in 2022 (to enable a 2022-2023 trend analysis), so perhaps this MO should be revisited after 2024 monitoring results.

The discussion and suggestions on page 3-40 are very helpful, and we agree with them. The example Figure 3-15 illustrates the "trap" of some of the strict MO criteria, where the long stagnant pool is a success and complex habitat doesn't meet the MO at a low flow. The suggestions of greater range of rock gradation, and field fitting of complexity would greatly improve Phase 2 as-built performance and lead to improved evolution as the channel adjusts during high flows. We recommend that a small technical subgroup (including Valley Water Stillwater Sciences biologists) revisit the MO results and potentially recommend improvements to the Suitable Habitat MO. It is unfortunate that spawning gravel quantity was not on the list of monitoring tasks in 2023, so will be interesting to see evolution in spawning gravel quantity in 2024.

Section 3.6.6: Peak Flow Water Surface Profile Monitoring

We are pleased that a 3,800 cfs (est) flow event was captured. We suggest referring back to Figure 3-4 for this event, and recommend explaining that the 3,800 cfs was an instantaneous peak flow rather than the daily average flow shown on the figure, and giving an estimate of the flood recurrence for that event here. We also recommend that the data be plotted in profile specifically for the Site 1 and Site 2 extents (two separate figures that focus on each of the sites), so we can better assess the variability in water surface elevations based on flood debris interpretation. If there is a lot of variability,

we may recommend installing a couple of pressure transducers to reduce the variability and simplify the monitoring effort.

Chapter 4: Recommendations

As mentioned above, we tentatively support the recommended increase from +/-5% to +/-20%, but recommend that a sensitivity analysis be conducted using the 1-D hydraulic model at the two sites to assess the difference in suitable habitat (or wetted area) using +/-5%, +/-10%, and +/-20% flows at a typical winter baseflow (e.g., 15-20 cfs) to get a better understanding of the sensitivity of the flow range to suitable habitat or wetted area, and have that help support a revision in the flow range criteria. Perhaps the small technical subgroup recommended for the Suitable Habitat MO could also review the results of this sensitivity analysis and provide feedback to the Adaptive Management Team for consideration.