Letter	Comment #	Comment	Relation to Final EIR/EIS
Save the California Delta Alliance 7-12-17 Salter	1	These comments are submitted on behalf of Save the California Delta Alliance. Please find attached the review of the FEIR/S noise section conducted by Charles M. Salter Associates, a world-renowned acoustical engineering firm. The succinct review finds that the noise analysis conducted for the FEIR/S is so inadequate as to rise to the level of professional negligence. Contrary to the FEIR/S, noise levels at the Clarksburg Marina, for example, could reach 80 dBA or more and the noise level at the Hood Supply Company could reach 83 dBA or more. Please address the issues raised in the Salter review, and our previous comments on noise, in a re-circulated FEIR/S.	Please see below considerations. The noise analysis is adequate and complies with CEQA and NEPA. Additionally, it should be noted that the Bay Delta Conservation Plan/California WaterFix FEIR/S Review Comments Salter Project: 17-0416 attached to Save the California Delta Alliance's comment letter does not conclude that DWR's noise analysis rose to the level of professional negligence.
Save the California Delta Alliance 7-12-17 Salter	ATT 1	Salter FEIR/S Noise Section Review As requested, we reviewed Chapter 23 Noise of the Final Environmental Impact Report/Statement (FEIR/S) for the proposed Bay Delta Conservation Plan (BDCP)/California WaterFix Project. It would consist of new water intake, conveyance, and associated facilities to transport water from the Sacramento River. This letter summarizes our review and comments. EXECUTIVE SUMMARY In our opinion, the FEIR/S does not sufficiently address potential noise impacts. Our comments focus on the following issues: 1. The noise impact significance analysis virtually ignores expected increases to ambient noise levels at neighboring sensitive land-uses. As such, CEQA Guidelines and the thresholds of significance are also ignored. Therefore, the FEIR/S is incomplete. 2. No ambient noise measurements were performed to study the baseline noise environment. For a project of this scale, it is our opinion that conducting no measurements and relying only on broad estimates of existing environmental conditions is below the standard of care for such an impact analysis with nearby noise-sensitive receivers. 3. Construction noise levels are likely underestimated in some areas, by as much as 10 dB to 15 dB or more, as the analysis assumed excess attenuation rates for sound propagation from the construction sites and failed to account for the potential variation and cumulative effects of several pile drivers operating concurrently.	The following consideration and assessment follows the order of items (issues) in the Executive Summary in the comment. Issue #1 re increases in noise levels. The analysis acknowledges that increases in ambient noise levels during construction and operation will be perceptible and readily noticeable in some areas. Construction of the project uses noise thresholds established by DWR, which were established based on a consensus of experts, and local and resource agencies. Because of the extent of CM1 construction at some locations and the multi-year durations for some of the construction components (e.g. intakes), the direction of DWR was to establish a numerical limit for construction noise during daytime hours. In establishing the 60 dBA threshold, consideration was given not only to DWR specification 05-16, but also to guidance in the California Model Noise Ordinance. The model ordinance identifies a maximum daytime noise level of 60 dBA for long-term (over 10 days) construction projects where it is technically and economically feasible to do so. It also specifies a maximum noise level of 50 dBA during nighttime hours. The 40 dBA existing ambient is used to characterize the rural setting for many locations within the project area. The goal of mitigation is to reduce levels to below the thresholds of 60 dBA daytime and/or 50 dBA nighttime. Although noise levels of up to 60 dBA would be up to 20 dB higher than the existing level of 40 dBA, a noise level of 60 dBA Ldn (equivalent to threshold of 60 dBA daytime/50 dBA nighttime) would be considered "normally acceptable" under State General Plan guidelines. The project uses a 5 dB increase threshold for traffic noise (including realigned roadways), and noise from construction equipment. However, this increase is applicable only where existing noise levels exceed 60 dBA Leq. As a note regarding noise increases, Federal Transit Administration *Noise and Vibration Guidance Manual* incorporates research by Schultz in its thresholds for

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		4. The FEIR/S does not include sufficient evidence to demonstrate that adequate noise reduction can be feasibly achieved by the proposed mitigation measures (see MM NOI-1a), particularly noise barrier walls along the River that would have to shield tall equipment, such as pile drivers. If the proposed mitigation is not feasible, appropriate mitigation should be identified or the impact should be concluded as significant/adverse. 5. Construction noise is expected to significantly interfere with the activities at certain recreational facilities or businesses available for community enjoyment, such as the Clarksburg Marina and the Hood Supply Company (restaurant). INTRODUCTION The proposed BDCP/Waterfix Project would include the construction of several water intake facilities along the Sacramento River along with conveyance and associated facilities. The primary and most significant sources of construction noise would be the pile/pier installation and related excavation, blasting, and trucking activities along with the muck haul activities associated with the tunnel boring. The surrounding area is largely rural and agricultural land, but there are several noise sensitive landuses in the area, including residences, communities, and recreational areas/facilities.	allowable transit project noise increase relative to existing ambient levels. The guidance indicates that, "as the existing noise exposure increases… the allowed increase in the cumulative level decreases"…"The justification for this is that people already exposed to high levels of noise should be expected to tolerate only a small increase in the amount of noise in their community. In contrast, if the existing noise levels are quite low, it is reasonable to allow a greater change in the community noise for the equivalent difference in annoyance." However, the manual also notes that "these criteria are based on general community reactions to noise at varying levels which have been documented in scientific literature and do not account for specific community attitudinal factors which may exist." (Federal Transit Administration, 2006) Because of such factors, the level of community annoyance or tolerance for project related noise increases is not absolute. However, the analysis in Chapter 23 uses the general principle that receptors in less noisy areas may tolerate greater increases in noise than communities already exposed to higher levels. Issue #2 re noise monitoring. As noted in the comment and stated in Chapter 23, noise monitoring to establish existing ambient noise levels was not conducted for this project. Instead, existing noise conditions were characterized using traffic noise modeling and typical ambient noise levels as a function of population density, as reported in standard references (e.g. Cowan 1994, Hoover & Keith 2000). Based on the rural nature of the study area, most of the construction locations are expected to have ambient noise levels well below 60 dBA. The analysis assumes a baseline noise level of 40 dBA, which is analogous to a partially developed rural area as shown in Table 23-5 of Chapter 23 of the EIR/EIS. This is a conservative assumption that allows that noise levels due to the project will likely be readily perceptible in many areas. There is no evidence that noise monitoring of ambient noise levels at specific locations throughout the study area would change the impact conclusions or the recommended mitigation measures in Chapter 23. Issue #3 re attenuation rates and pile driving. Geometric and ground effect attenuation were calculated based on methods specified in the FTA Transit Noise Impact Assessment. Water bodies and parking lot surfaces taken alone would be characterized as "hard" surfaces. However, the vast majority of the study area can reasonably be characterized as "soft" ground, and this assumption was used to characterize construction noise attenuation in the model. While in some instances receptors may experience noise attenuation at a "hard" ground rate which is nearer to 6 dB per doubling of distance, noise source levels described in Chapter 23 represent a reasonable worst case condition that generally describes the higher end of noise levels a receptor may experience on an intermittent basis, depending on its proximity to a given work area. Although construction for the entire project would occur over a period of several

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			years, in many areas along the conveyance construction would be intermittent and short-term, as components of the project are completed. Some features such as intakes would take a longer amount of time to build, but would occupy a larger area. Construction noise would be a temporary effect in a given location, as the period of project construction accounts for phasing of all components of the project. In other words, noise from construction will affect different areas at different times. For the purposes of the analysis, the worst-case noise levels under construction can be assumed to occur during any hour or multiple hours of the day. The worst-case one-hour noise level is used to evaluate significance of impacts. It should be noted that intake construction work areas are large from a noise perspective. For example, while the work area northern boundary for Intake #2 is approximately 2,000 feet away from the Clarksburg Marina, the entire intake work area spans over a mile and the intake facility is about one mile away from the Marina. Nearly all piles within the work area would be installed to build the cofferdam, foundation, and control structures at the intake facility. It would not be accurate to regard the intake work zone as a homogeneous noise radiator that produces levels of 60 dBA at a distance of 2,000 feet at any given time throughout the construction period. The 60 dBA level at 2,000 feet represents a worst case noise level based on multiple pile drivers and trucks operating simultaneously, which would only occur during specific phases of construction. Furthermore, apart from pile driving, a large portion of the construction and earthwork would be done away from the river shore in interior areas and within the intake facility. The noise contour distances in Chapter 23 describe noise from equipment operating along shore areas, which represents a worst case condition in terms of location as well as overall noise level. The noise analysis was based on FTA construction noise analysis methods, which do not adjust for impulsive noise. The analysis assumes a 100% utilization factor for pile drivers, assuming the high end of pile driver source levels. This is a reasonable conservative assumption, given a typical factor of 20% for a single driver. The analysis states this as well in Chapter 23: "…because multiple pile drivers would be used, a utilization factor of 100% has been applied." The noise source levels including pile driving used in the noise analysis are based primarily on USDOT guidance documents, which is a standard source for levels to assess impacts. The levels assume direct line-of-sight to construction activity, which would not necessarily be true at larger distances where noise levels would attenuate to lower levels than the 50 foot reference distance used in the referenced *Caltrans Guidance Manual for the Assessment of Construction Noise Effects on Bats*. It should be noted that if the higher reference levels in this guidance were applied to the analysis, the analysis conclusions for construction noise would remain significant and unavoidable.

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			Issue #4 re mitigation feasibility and achievable noise reduction. The analysis in Chapter 23 concludes that construction noise impacts are considered to be "significant and unavoidable." This is based worst-case noise conditions; for example, six pieces of construction equipment operating simultaneously and continuously in one location. These conditions would not necessarily occur on a routine basis. Although alternative haul routes for truck traffic may be an effective measure in some cases, significant impacts are still likely after mitigation. Regarding the commenter's concern that, "If complaints occur, construction noise is found to be excessive, and mitigation measures are found to be infeasible, the noise sensitive community, including residences and recreational facilities, would have very few options available to redress the objectionable noise," project environmental commitments are designed to address the potential for community annoyance, based on the determination that construction-related noise would cause levels to exceed DWR thresholds at nearby noise-sensitive receptors. Environmental Commitments in Appendix 3B indicate the following: *DWR and contractors hired to construct any conveyance components of the project will implement a site-specific noise abatement plan to avoid or reduce potential construction-, maintenance-, and operation-related noise impacts.* This section includes a several measures that may be applied to reduce noise levels where threshold exceedances are anticipated to occur. These noise abatement plans will vary by location and will be developed based on site specific factors. In practice, technically and economically feasible noise abatement options would be available in many cases to reduce construction noise levels at the nearest residences to conform to DWR thresholds. Temporary noise reducing barriers erected at stationary sites can substantially reduce noise levels for adjacent land uses. However, as indicated in the EIR/EIS, there may be locations where this will not be feasible, such as those related to pile driving activities. The purpose of the CEQA/NEPA analysis is to disclose project impacts and determine whether feasible mitigation is available to reduce or avoid impacts. As discussion of mitigation measures in Chapter 23 indicates: "*Achievable noise reduction varies by measure. Shutting off a piece of equipment would eliminate its contribution to ambient noise. Noise barriers and enclosures would provide noise reduction within the discrete area shielding noise from surrounding noise sensitive receptors. Barriers can provide 5 to 15 dB of noise reduction depending configuration relative to surrounding terrain.*" Although implementation of these measures will reduce the impact, it is not anticipated that feasible measures will be available in all situations to reduce construction noise to levels below the applicable thresholds. Therefore the analysis concludes that impacts may remain unavoidable after mitigation. Regarding the suggestion of use of quieter equipment within setbacks as a mitigation

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			measure, this may not be feasible within the boundaries of work areas in all cases, but may be considered in site-specific mitigation plans on a case-by-case basis. Issue #5 re noise interference at outdoor areas of local businesses The EIR/EIS describes the distances at which the applicable noise thresholds could be exceeded. For example, sensitive receptors within 2,000 feet of an active intake construction site could be exposed to construction noise in excess of the 60 dBA Leq (1hr) daytime threshold. The nighttime threshold of 50 dBA Leq would be exceeded at a distance of 2,800 feet. Distances are also described for construction noise related to the construction of conveyance and associated facilities, truck trips and worker commutes, power transmission lines, and borrow/spoil areas. (See final EIR/EIS, pp. 23-195 – 23-196.) Regarding the two receptors identified in the comment, the analysis in Chapter 23 acknowledges that project construction would result in significant and unavoidable impacts after mitigation where the construction activity would cause an exceedance of an applicable threshold at the distance where the receptors are located. Thus, the potential for unavoidable noise impacts applies to both of these receptors. The commenter suggests that noise levels would increase substantially at the Clarksburg marina and interfere with speech and enjoyment of the facility. A large majority of piles would be installed at distances of greater than a ½ mile from the marina, which would attenuate noise to levels corresponding to distances shown in Table 23-17 (i.e. 58 dBA or less). This assumes an average 100% utilization of pile drivers during construction, in combination with other heavy equipment (e.g dump trucks), with equipment concentrated along the river shore areas. In the case of equipment noise without pile driving, a level of 54 dBA Leq(1h) is predicted at a distance of 2,000 feet, also under conditions where equipment is concentrated at the northern end of the project along the shore area. If such conditions ever take place, they would likely occur for a very short period of time relative to the construction period. Even so, such conditions are not anticipated to result in a noticeable level of speech interference at the marina facility. In general most of the construction at Intake #2 would occur at distances well over a ½ mile from the marina. While the suggestion that noise levels would be "at least 80 dBA at [the] marina" is not consistent with the analysis in Chapter 23, project noise levels are expected to result in an overall increase in ambient levels at the marina location. For the purpose of evaluating impacts, worst-case noise contours shown in Appendix 23A are used in the analysis. Based on noise contour analysis of the Clarksburg Marina, impacts would be significant. DWR environmental commitments and Mitigation Measures NOI-1a and NOI-1b are available to reduce the effect. While these measures are anticipated to be effective in many cases, the analysis acknowledges that feasible mitigation will not be available in all cases to reduce levels below 60 dBA Leq during the day and/or 50 dBA Leq during the night.

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			Therefore impacts are potentially unavoidable at the Clarksburg Marina. The commenter further suggests that noise levels would increase substantially at the Hood Supply Company and interfere with speech and enjoyment of the facility. In this case, pile driving sites at intakes would be directed away from the restaurant site and terrain shielding would be a factor; however to be conservative this is not accounted for in the model. Pile driving would be done generally at distances of greater than ½ mile from the restaurant, resulting in worst case levels of up to 58 dBA Leq(1h); as indicated above, this level would likely be lower due to shielding from terrain and local buildings. Data related to noise contours and impacts in this area under Alternative 4/4A are shown in Figure 23A-04 in Appendix 23A and Tables 23-61 and 23-62. In the case of worst-case equipment noise without pile driving, equipment noise could reach a level of 70 dBA Leq(1h) at a distance of 500 feet, under conditions where equipment is concentrated at the northern end of the work area nearest to the restaurant. Such a condition would likely only occur for short periods of time from work zones. In the case of traffic noise, the EIR/EIS discloses that SR 160 and Hood Franklin Road are major truck routes for the project. As such noise levels from truck traffic are predicted to result in an increase in traffic noise levels in this area, with loudest hour noise levels of up to 70 dBA Leq (1h) at a distance of 100 feet from haul roads. A noise level of this magnitude is anticipated to result in a significant noise impact at the Hood Supply Company Restaurant. Significant impacts from construction noise at this location and in much of the Hood community are disclosed in the EIR/EIS. The same environmental commitments and mitigation measures apply at this property as described for the Clarksburg Marina. There is a potential for an unavoidable impact at this receptor, given its proximity to haul roads and work zones, and the potential for exposure to traffic noise levels exceeding 60 dBA Leq during construction. This comment does not raise any substantive new environmental information or analysis that was not previously addressed in the Final EIR/EIS.
Save the California Delta Alliance 7-12-17 Salter	ATT 1	Bay Delta Conservation Plan/California WaterFix FEIR/S Review Comments Salter Project: 17-0416	This attachment does not raise any issues not already addressed in the above consideration to the comment letter. The attachment does not raise any substantive new environmental information or analysis that was not previously addressed in the Final EIR/EIS.