APPENDIX F
COMMENTS ON DEIS WITH RESPONSES

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Appendix F — Comments on DEIS with Responses

1.1 Adaptive Management

Chapter: 4 Starting DEIS Page #: 105 Starting DEIS Line #: 22

Comment: Shouldn't URGWOM Planning Model be 'Hydrology and Geomorphology? Also, the items listed don't seem to be close to the ones listed in 4.4.1.4! There is also nothing about any improvement on the '10% departure requirement needed from conditions under the No Action'.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The 10% uncertainty in the URGWOM is based on USGS gage error, and USGS gage data is used in URGWOM. Revisions will be made to this section in the FEIS to clarify.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: Fundamentally, this direct monitoring (and applicable methodologies) should incorporate: 1) the expansion of water quality sampling, as described above, per established QA/QC protocols; 2) the determination of flow stage relationships in order to incorporate recognition of the flow-based differences in water quality; 3) the evaluation of physical effects upon wetlands and riparian vegetation resources and conditions, utilizing monitoring techniques such as greenline and Proper Functioning Condition surveys; and 4) the implementation of a concerted effort to assess the project's effects upon local stream morphology and function (stable stream dimensions, channel pattern, floodplain access and function, sediment supply and transport, and maintenance of stable gradient profiles), employing monitoring tools such as the Bank Erodability Hazard Index and all applicable hydraulic geometry principals.

Submitted by: Marcy Leavitt, NM Environment Department

Response to Comment: Noted.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: Regarding other parameters of concern, the BOR and COE should coordinate monitoring efforts for this effort with recent and on-going efforts of the MRG Endangered Species Act Collaborative Program since the monitoring objectives and needs overlap in many cases. As noted in Section 4.10.3, the overarching need for cooperative, adaptive management monitoring and implementation in the entire Rio Grande basin throughout New Mexico exists.

Submitted by: Marcy Leavitt, NM Environment Department

Response to Comment: Noted.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: BOR should install (or fund the USGS to install) continuously monitoring sondes at appropriate stations in the basin to determine whether or not the modeled impacts to dissolved oxygen, temperature, and TDS/conductivity are accurate.

Submitted by: Marcy Leavitt, NM Environment Department

Response to Comment: To date, the Corps of Engineers has funded installation and maintenance of continuous monitoring sondes at four sites distributed over about 50 river kilometers. In addition, the Corps is funding longitudinal sampling between Cochiti Lake and Elephant Butte Reservoir. Data will be disseminated on the Sevilleta LTER website at http://sevilleta.unm.edu/data/archive/water/hydrodb/. The Corps is planning to seek additional cooperation from other agencies/entities (such as MED) with water quality responsibilities in the form of long-term funding and maintenance of this effort.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: In closing, we restate our support for monitoring efforts to evaluate the ongoing and cumulative impacts of your proposed actions. As noted in the Section 4.10, adaptive management is especially necessary to effectively manage natural resources. A key component of this is appropriate monitoring to provide resource managers with the information they need to know if and where adjustments need to be made.

Submitted by: Marcy Leavitt, NM Environment Department

Response to Comment: The lead agencies recognize the need to collect additional monitoring data in order to document water quality parameters, to improve and calibrate modeled impacts, and to improve the understanding of the effects of water operations on water quality parameters.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: We acknowledge the complexity of the multi-faceted issues and the multiple parameter approach that the project must address. Recognizing that the full study is dominantly model-driven, even the decision analysis appears to comply only with the modeled parameters. But, as we have commented above, the project's overall scope is viewed as posing real (not modeled) impacts to streams such as the Rio Chama, so we encourage - in the strongest terms possible - that an expanded and active on-site monitoring effort (not further modeling) be included as an integral part of the overall project implementation. The impacts potentially generated by the modeling parameters can reveal themselves in the short term, far more quickly than might be expected in using the long term approach that incorporates the latest round of gage-generated flow and suspended sediment data into the project's data base.

Submitted by: Marcy Leavitt, NM Environment Department

Response to Comment: The need for more monitoring, especially in those areas identified as having insufficient data (see Appendix P), is acknowledged. Modeling can accurately represent and predict the impacts of water operations on water quality, given sufficient data input. The lead agencies recognize the need to collect additional water quality data in order to document water quality parameters, to improve and calibrate modeled impacts, and to improve the understanding of the effects of water operations on water quality parameters.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: This is not further modeling work. Spring boarding from a combination of the DEIS chapters on existing Conditions, combined with development of a reliable set of field-generated baseline measurements and local assessments for this Bureau's four suggested monitoring parameters, any recognizable degradation, alteration, or change in conditions found to be attributable to the project's selected course of action will spotlight resulting water quality, erosional, or depositional impacts. This

presents an opportunity to apply adaptive management techniques to alter or fine-tune the modeled parameters in light of real world data and in-the-field impact evaluations. A decision not to employ monitoring signals the project's singular allegiance to the perceived infallibility of the modeling approaches, in further deference to the requisite natural balance sought by our state's stream systems.

Submitted by: Marcy Leavitt, NM Environment Department

Response to Comment: As discussed above, additional water quality monitoring is being conducted. The importance of adaptive management and monitoring is discussed in the EIS, and the development of detailed adaptive management plans as specific federal actions are proposed and implemented is identified.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: A thorough mitigation plan should be required to assure that the negative impacts of any alternative would be minimized through implementation of these strategies. There is a discussion of future adaptive management, but stakeholder involvement is not emphasized. A further discussion of stakeholder involvement should be added to the DEIS.

Submitted by: SW Region Director, US Fish and Wildlife Service

Response to Comment: Noted. Detailed adaptive management and specific mitigation plans would be developed and implemented as specific federal actions are proposed and implemented. Stakeholder involvement is discussed in Section 4.10.3.

1.2 Agriculture

Chapter: 4 Starting DEIS Page #: 65 Starting DEIS Line #: 24

Comment: Not really sure of the emphasize of Table 4-20 and the information associated with it. The sentence about the 'greatest shortfall would be 32 percent (...) doesn't show any Impact. The average annual seasonal shortfall to irrigators in the Central Section over the 40-year planning period is Constant for all alternatives; therefore the information in that appendix shows NO Impact.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: **The point of showing this table is to demonstrate that there is no difference in water deliveries across the alternatives. This needed to be analyzed in response to public scoping comments, but there would be no effect to irrigation deliveries under any alternative. The text will be changed to reflect that there is no difference.**

Chapter: 4 Starting DEIS Page #: 65 Starting DEIS Line #: 10

Comment: This paragraph implies that more that one Impact Indicator is provided in Table 4-19. I only see the 'loss of viable agricultural land and crops through inundation' as the Major indicator that is also mentioned in the Issues. This measure should be mentioned in this paragraph. The word 'worse' is not the best way; however, one might mention that I-1 would be ranked 7th, NA next to last, etc. BUT remember this is only using one measure!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Agree that the term 'worse' should not be used and has been changed to 'adverse'. There are several indicators used to evaluate impacts to agriculture, not one, as presented in this section, and all combine to provide the score for impacts to agriculture.

1.3 Alternatives and Ranking

Chapter: 4 Starting DEIS Page #: 21 Starting DEIS Line #: 1

Comment: It seems that there is a 'preference' drawn from this table? If so, the preference should be placed in this table. Is the method to obtain the preferences available of this section? If one counts the number of high scores in Table 4-3, it sure seems that the NA could be better than the other alternatives! However, the best alternative may be the result of the lower scores?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Table 4-3 shows data for individual performance measures without attempting to provide a weighted preference. The 'score' rows will be removed from this table - they were not intended to be published at this stage in the document.

Chapter: 4 Starting DEIS Page #: 90 Starting DEIS Line #: 14

Comment: The 'operational impacts' can't go through Fort Quitman, Texas! The 'cumulative impacts would be similar for all alternatives' - if this is so, why isn't the NA alternative as good as the other alternatives. One should at least say in the title of Table 4-30 if the information is 'for Preferred Alternative' OR as people indicated during the open meetings - the Highest Ranked Alternative.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The planning area includes Fort Quitman Texas - actual impacts associated with alternatives do not extend to Fort Quitman because of limitations in considering operations at Elephant Butte Reservoir and Caballo. Because there is so little difference among alternatives, most of the cumulative impacts would apply to any alternative selected. Where there are differences created by operational features, those are noted in the resource impact section.

Chapter: 4 Starting DEIS Page #: 88 Starting DEIS Line #:

Comment: The legend on Figure 4-34 is NOT in the same order as the Criterion in Table 4-29 - it should be. Then the items in Figure 4-35, which is the 'Radar Diagram' of the same information , should be in that same order (OR change the 'Weights' in the table to meet the weights in Figure 4-34. Figure 4-36 doesn't come out of Table 4-29 and it should mentioned somewhere in the Results that the information, if it is really that important, to emphasize 'Threshold Criteria' is provided for some reason.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: This figure is automatically generated by the decision support software. The radar diagrams are consistent in that the first criterion is shown at the top. Figure 4-36 shows the detailed analysis of Threshold Criteria measure shown in Table 4-29. Alternatives must satisfy minimum performance conditions on Threshold Criteria in order to be considered for selection.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: the information in Table 4-3 Operating Flexibility Performance Measures & Results DOES NOT transform directly to Table 4-29 Decision Performance Scores [by sections in Chapter IV to similar Criteria cells]. The weights are potentially different. It really seems that most scores by Resource have little affect by alternative, except to suggest the weights for each Criteria? Furthermore, the weights in Table 4-29 don't seem to have anything to do with the Ranking EIS Decision Criteria in Table 4-1. Apparently Appendix P needs to be cited much more throughout sections in Chapter IV?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: In Table 4-29, the weights for each criterion were established by steering committee rankings (Table 4-1). The numerical weights for each criteria correspond to the rank of that criterion and are assigned by the model. The weights for performance measures and subcriteria were established by individual resource teams. For example the operating flexibility parameters provided in Table 4-3 are the same performance measures cited in Table 4-29, with the exceptions that threshold criteria were addressed in Table 4-2 and improvements in sediment transport were addressed under Sediment Management.

Chapter: 4 Starting DEIS Page #: 27 Starting DEIS Line #: 25

Comment: The information doesn't seem to match the results provided in Table 4-6, which should only have the values rounding to the nearest hundredth! The parameters in these sentenced don't match the ones listed in the table and many of the items have 'No significant change' as indicated in the table. It seems that language like 'Most favorable' addresses alternatives that might be preferred, not 'less favorable' as used. The values from table 4-6 need to be cited if in fact things are similar? For example, the 'Reservoir Exchange Rate' is not different at Heron Reservoir (0.79 for B-3 and D-3; 0.80 for other alternatives). Cochiti Reservoir has an exchange rate of either 0.007 or 0.117; therefore the lower value for NA, B-3, D-3, and E-3 is most favorable.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The heron reservoir elevation change rate is also equally as low for the No Action alternative - this will be added to line 26. The parameters are discussed in the same order as presented in Table 4-6.

Chapter: 4 Starting DEIS Page #: 88 Starting DEIS Line #:

Comment: Figure 4-37 have some performance measures; BUT one must look hard to find them or believe that they are mentioned somewhere on this figure and actually Figure 4-36 is one portion of this figure?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Figure 4-36 is a detail of the threshold criterion analysis and Figure 4-37 reflects all of the performance criterion listed for operating flexibility on Table 4-29.

Chapter: 4 Starting DEIS Page #: 88 Starting DEIS Line #:

Comment: Right now the three items used in 'Threshold Criteria' don't seem IMPORTANT - IT is only 6.7% of the total weight for any alternative!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The threshold criteria are a first cut ranking - and were given slight added importance when considering operating flexibility.

Chapter: 4 Starting DEIS Page #: 8 Starting DEIS Line #: 5

Comment: This paragraph doesn't seem to be a real Issue. All of the Project Firm Yields are approximately 90 KAF to 98.5 KAF with only B-3 and D-3 below the target, including the NA alternative, which wasn't really mentioned in the results. Figure 4-5 information is also in Table 4-2, which really describes the Threshold Criteria Evaluation by Alternative better than the figure or Figure 4-7 that also has the same information. In any case, the information in Figure 4-5 and Table 4-2 wasn't source to an appendix or outside reference. Again, what is the Issue? The NA alternative is equal to or better than all but two of the alternatives and does 'below the target' by 10% make B-3 and D-3 better alternatives?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted. The discussion is meant to demonstrate that all alternatives provide reasonable support for a firm fixed yield at Heron Reservoir of 96.2 KAF.

Chapter: 4 Starting DEIS Page #: 86 Starting DEIS Line #:

Comment: The method to obtain these final 'Weights' in Table 4-29 should be explained in section 4.5.2.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted. Weights for criteria were established by the JLAs and Steering Committee; weights for performance measures and subcriteria were established by the individual resource teams.

Chapter: 4 Starting DEIS Page #: 87 Starting DEIS Line #: 23

Comment: Why is this certain Criteria singled out over the rest?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Water operations is the subject of this review - identifying any additional potential operating flexibility was one of the key reasons the review was initiated.

Chapter: 4 Starting DEIS Page #: 87 Starting DEIS Line #: 20

Comment: The legend is listed in the order of the preference related to the Criteria (Why?). Also, why is this one performance measure singled out over the rest of the ones listed in Table 4-29?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The legend is automatically generated by the decision support software to quickly show changes in ranking. The threshold criteria performance was of interest to the JLAs and executive committee as these criteria have minimum acceptable performance levels.

Chapter: 4 Starting DEIS Page #: 87 Starting DEIS Line #: 11

Comment: The range of alternative rank in Figure 4-34 is from 0.15 to 0.125 and this should be mentioned. This is only a 16.7% improvement for the preferred alternative

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted. Text will reflect this observation.

Chapter: 4 Starting DEIS Page #: 38 Starting DEIS Line #: 18

Comment: It seems that Alternative I-1 fewest adverse impacts is only 'compared to the NA @ 500 cfs in Table 4-9. Also, one can observe that I-2 and I-3 have similar values @ 1000 cfs and 2000 cfs. I suggest that I-3 looks the best - it has 'Benefits, No effect, and Potential beneficial impacts compared to NA @ 2000 cfs'.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: I-1 has slight benefits in the San Acacia Section when compared to 500 cfs diversions at the LFCC under No Action, but has slightly adverse impacts compared to 0 cfs diversions to the LFCC. The challenge here is really the impact of LFCC diversions. Zero diversions are the best case for the San Acacia Section - all alternatives include the potential for zero diversions to the LFCC.

Chapter: 4 Starting DEIS Page #: 87 Starting DEIS Line #: 6

Comment: Any score could be converted to the 100% normalized scheme, don't need to use 1-7 or 1-20 or whatever. Table 4-29 can have all numbers as a function of 100% being the highest value and zero as the lowest.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The scores reflect the willingness of resource teams to provide quantitative versus qualitative analyses. The model provided numerical conversion for scores shown in Table 4-29.

Chapter: 4 Starting DEIS Page #: 58 Starting DEIS Line #: 12

Comment: It should be explained that the ranking is only due to temperature estimates in the Rio Chama and Southern River Sections and due to the TDS/Conductivity in the San Acacia Section (all of such is shown in the Discussion of Results).

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Rankings are based on the total weighted score for all river sections and all river sections. The largest changes in water quality occur as cited.

Chapter: 4 Starting DEIS Page #: 28 Starting DEIS Line #: 3

Comment: Under Heron Reservoir, Net Reservoir Elevation Range - NA is also most favorable! Round off the Reservoir Exchange Rates to two significant numbers; then differences are more pronounced and most favorable can be realized. Abiquiu Reservoir, New Reservoir Elevation Range - I-3 is not one of the

most favorable. It should be I-1, if 0.09 is close to zero. What is the Issue - Reservoir Exchange Rate is to be Minimum (close to zero or 0.80 for Heron Reservoir?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: No Action, B-3, and D-3 are all equal in Heron Reservoir - net reservoir elevation range of change. B-3 and D-3 are the most favorable of the proposed action alternatives. The values shown provide sufficient significant digits to permit evaluation of alternative performance. I-1 is in fact the most favorable for Abiquiu Reservoir net reservoir elevation range of change - this will be corrected in the comments portion of Table 4-6. The minimum value is the desired condition for the reservoir exchange rate.

Chapter: 4 Starting DEIS Page #: 83 Starting DEIS Line #: 4

Comment: Furthermore, the NA is the best alternative for the San Acacia Section when observing Aquatic-Riverine Environment, most of the Threatened & Endangered Species, and Cultural resources! Even though B-3 appears to have more 'Beneficial' listings in Table 4-28; it still has four rows of Adverse or Slight Loss and those would need some mitigation; BUT none were provided on page 84!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: No Action at 0 cfs diversions into the LFCC is best for ecosystem resources at San Acacia -progressive diversion to the LFCC up to the 2,000 cfs capacity diminishes the benefit. Similarly, if B-3 were operated at 0 cfs diversions to the LFCC, it would have ecosystem performance more similar to No Action.

Chapter: 4 Starting DEIS Page #: 87 Starting DEIS Line #: 31

Comment: Why is the Criteria of Figure 4-38 weighted 20.0, and provided here? It must be the most important of weighted the most?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The ecosystem criterion was ranked most important by the Steering Committee and in the numerical translation of rankings, was allotted a weighting of 20.0.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: In conclusion, the RCAA supports Alternative B-3 because it takes advantage of the flexibility to store Rio Chama (Rio Grande) water for irrigation, domestic, and livestock purposes at Abiquiu Reservoir, and its protects acequias by lowering the maximum Rio Chama flow rate below Abiquiu Dam from 1800 cfs to 1500 cfs.

Submitted by: Fred Waltz, Rio Chama Acequia Association

Response to Comment: Noted. All the alternatives have the flexibility to store native water for various purposes. A reduction in channel capacity could have detrimental effects on flood control. The degree of protection that the project provides for the area below the dam would be decreased. Without zoning regulations, such a reduction in channel capacity would allow additional development in the flood plain.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: Defenders has significant concerns with the range of alternatives considered in the Draft EIS and how that range artificially inflated or deflated the rankings of the other alternatives. More specifically, Defenders opposes alternative B-3. This alternative would have significant impacts on aquatic and riparian habitats in the San Acacia stretch and on the Rio Grande silvery minnow and its habitat. An alternative that significantly impacts an endangered species and its critical habitat, see IV-17, IV-23, IV-28, IV-32, and ranks last in ecosystem support, see IV-87, should be dismissed as quickly as any other alternative that does not meet state and federal law. If the purpose of URGWOPS and the Corps of Engineers, Bureau of Reclamation and the Interstate Stream commission is truly to "examine whether the full range of discretionary actions was being implemented for better ecosystem management," I-1, then neither the draft EIS nor the preferred alternative satisfy that purpose.

Submitted by: Kara Gillon, Defenders of Wildlife

Response to Comment: The scope of this EIS was limited to a range of alternatives that are within existing authorities. Ecosystem support is one of nine criteria that are used to evaluate alternatives. The top ranked alternative is not based on the score of one criterion but on the sum of the alternative performance in all nine criteria.

Chapter: 2 Starting DEIS Page #: Starting DEIS Line #:

Comment: More specifically, the No Action Alternative is an insufficient foundation upon which to base descriptions of the other alternatives. The No Action alternative, or current water storage and delivery operations, is not well defined. For example, the current operations of several facilities are not described at all - e.g., EI Vado Dam and Reservoir - or are described very briefly - e.g., Elephant Butte Dam and Reservoir and Caballo Dam and Reservoir.

Submitted by: Kara Gillon, Defenders of Wildlife

Response to Comment: NEPA requires comparing proposed actions to a baseline condition - which in this case is the No Action alternative encompassing current water storage and delivery operations. Descriptions of current operations at El Vado Dam and Reservoir are contained in the URGWOM modeling documentation. More detailed descriptions for Elephant Butte Dam and Reservoir and Caballo Dam and Reservoir coordinated flood control operations are contained in Appendix I - Attachment B.

Chapter: 2 Starting DEIS Page #: Starting DEIS Line #:

Comment: We also question whether the alternatives meet the purpose and need of the JLAs if El Vado, Elephant Butte and Caballo operations are excluded from consideration. These reservoirs are key to supplying the water needs of irrigation districts and their operations play a significant role in storing and delivering water and assisting in meet Compact obligations and are thus important to fulfilling the purpose and need of the Review. The Draft EIS nowhere describes the basin-wide communications envisioned in any alternative. The reader has no idea what "information communication" or "improved communication" consists of whether the alternatives are in fact "improved" and whether there are benefits to the improvements.

Submitted by: Kara Gillon, Defenders of Wildlife

Response to Comment: El Vado, Elephant Butte and Caballo dams operation were not excluded from the analysis. The current protocols for El Vado operations were modeled using URGWOM. Impacts to El

Vado Reservoir storage and release were considered in the impact analyses. Elephant Butte and Caballo operations evaluations were limited to flood control operations. However, its delivery operation according to current protocols were included in the analysis. Improved communication and coordination is discussed in detail in Appendix I - Attachment B. Examples of the improved communications and coordination are the annual operating plan development process and daily water operations calls conducted by water management agencies, irrigation district representatives, and resource agencies.

Chapter: 2 Starting DEIS Page #: 16 Starting DEIS Line #:

Comment: Defenders is disappointed in the lack of a full range of alternatives concerning the LFCC and in the implication that this Draft EIS does consider a full range of alternatives. See II-16 ("Potential benefits of considering the full range of LFCC operations allows for evaluation of impacts on Compact deliveries, critical habitats, and other resources in the San Acacia Section.") URGWOPS analyses were supposed to decide whether the LFCC should be used, see Draft EIS on the Rio Grande and low Flow Conveyance Channel Modifications at 5, but it does not. If the URGWOPS review were honestly evaluate the long-term operation of the LFCC, the JLAs would have included an alternative that contemplated zero diversion into the LFCC as well as alternatives that coupled zero or reduced diversion with increased upstream storage.

Submitted by: Kara Gillon, Defenders of Wildlife

Response to Comment: All alternatives consider a full range of operations for the LFCC with a minimum diversion of zero cfs up to the maximum physical capacity of the LFCC at 500, 1,000 and 2,000 cfs structures. Selection of a preferred alternative includes identification of the maximum physical capacity of the LFCC. Operating impacts of the full range of LFCC capacities are expressed in alternatives I-1, I-2, and I-3. All alternatives, with the exception of No Action can couple zero or reduced diversion to the LFCC with increased upstream storage in Abiquiu Reservoir.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: Defenders urges the JLAs to reconsider their choice of a preferred alternative. Alternative B-3 will have significant environmental impacts, to endangered species in particular, that require selection, or creation, of a more environmentally friendly alternative. If you have any questions regarding this letter, please do not hesitate to contact me. Thank you again for this opportunity to comment.

Submitted by: Kara Gillon, Defenders of Wildlife

Response to Comment: Noted.

Chapter: 4 Starting DEIS Page #: 8 Starting DEIS Line #:

Comment: Environmental Consequences of the Alternatives Are Not Well-Defined. When the reader gets to the environmental consequences section he fully appreciates the lack of range in the alternatives. For example, one can't help but wonder how an alternative with 0- 180,000 acre-feet upstream storage and reduced diversion to LFCC would fare regarding Compact credit status and where that alternative would fall on Fig 4-6. If Compact obligations are a function of upstream storage and diversions into the LFCC, see IV-8, without a combination alternative (zero diversions into the LFCC and increased upstream storage) results will almost certainly disfavor the two alternatives with low diversions and little or no upstream storage and favor the rest. The lack of this combination alternative is highlighted in the discussion of impacts to aquatic and riparian habitats and to listed species. In this section the reader again learns that a drawback to the No Action Alternative is its lack of upstream storage, see IV-27 (for

augmenting ecosystem needs and for endangered species), and also learns that zero diversions into the LFCC best preserve aquatic habitat in the San Acacia section, see IV-24. Such an alternative would illuminate the effects of zero or reduced use of the LFCC combined with upstream storage on aquatic and riparian habitat, low flows, river drying and flow augmentation. Given these details, a review of this Draft EIS cannot be thorough without understanding how a "combination alternative" would fare against the other alternatives. It seems that such an alternative would be reasonable, would preserve critical aquatic and riparian habitats, and would meet Compact obligations. It would also eliminate the need to use upstream storage to mitigate for LFCC operations that produce low flows and intermittency in the river. In today's context, it is difficult to imagine using upstream storage to mitigate LFCC operations without considering whether upstream storage can adequately mitigate current activities. Note that low diversions into the LFCC and delivery losses in the San Acacia section should not, in and of themselves, count against alternatives I-1 and I-2 - only how the alternatives actually perform with regard to the Compact are relevant factors. The Draft EIS would thus benefit from information on how the No Action Alternative itself fares on Compact compliance, as well as what it means to be in compliance with the Compact so that the reader may understand why all alternatives are in credit status after 40 years yet some alternatives "do not meet threshold criteria for Compact deliveries." IV-8.

Submitted by: Kara Gillon, Defenders of Wildlife

Response to Comment: The JLAs are constrained in crafting alternatives by consideration of operating flexibilities that are within current authorities for existing facilities. The described 0 to 180,000 AF upstream storage and reduced (zero) LFCC diversion is accommodated under alternative I-3 that allows for exactly this type of operation. Alternative I-3 allows a range of diversions to the LFCC starting with zero cfs up to a 2,000 cfs channel capacity. Upstream storage is needed to provide flexibility; use of the LFCC provides increased compact compliance. Zero diversions to the LFCC under this same alternative decrease compact compliance due to evapotranspiration and seepage losses. The impacts of increasing levels of diversion are illustrated by comparing compact delivery performance and ecosystem impacts among alternatives I-1 (500 cfs), I-2 (1,000 cfs), and I-3 (2,000 cfs). The need to mitigate for LFCC operations can be attained by seasonal limits on LFCC diversions, and not merely releasing water from upstream storage. Compact compliance includes consideration of conveyance losses, thus increased losses to evapotranspiration or seepage associated with alternatives should reasonably be included in consideration of alternative performance. The New Mexico Interstate Stream Commission provides the criteria for adequate Compact compliance.

Chapter: 2 Starting DEIS Page #: Starting DEIS Line #:

Comment: Second, and most importantly, we believe reasonable alternatives exist but were not considered by the JLAs. "The existence of a viable but unexamined alternative renders an environmental impact statement inadequate." Resources Ltd. V. Robertson, 35 F.3d 1300,1307 (9th Cir. 1994) (citations omitted). The most glaring example is the proposed alternatives with regard to the Low Flow Conveyance Channel. Only two of the original twenty-two alternatives contemplated diversions less than the 2,000 cfs maximum and only then at the insistence of the NEPA Team, see S-11, so that the Draft EIS could examine such scenarios. Those two alternatives were carried through to detailed analysis, but because the JLAs did not initially examine various operations of the LFCC the remaining alternatives could not be objectively evaluated. Objective evaluation would call for an alternative that considered both increased Abiquiu native storage and reduced diversions to the LFCC.

Submitted by: Kara Gillon, Defenders of Wildlife

Response to Comment: All alternatives consider diversions less than the 2,000 cfs maximum because all alternatives were designed to offer a range of LFCC operations with the minimum diversion being zero

and the maximum diversion being one of three possible LFCC capacities: 500, 1,000 or 2,000 cfs. Currently there is no active diversion to the LFCC due to the physical condition of the outfall. The LFCC is expected to continue to function as a drain without zero cfs actively diverted. This function is permitted under every alternative analyzed. Active diversion to the LFCC is not expected in the near future without completion of a river realignment and LFCC restoration project. Additional NEPA and ESA compliance activities would be expected for any resumption of active diversions to the LFCC.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: Recap how Alternatives benefit resources. There is a general lack of explanation as to why and how certain Alternatives are better for certain resources in the affected areas section (Chapter 4) of the document. For example, it might be stated that Alternative B-3 best suits agricultural uses, but it is not explained why B-3 is best and the characteristics of B-3 are discussed elsewhere. The number of variables involved in the analysis makes it difficult to remember individual characteristics of each Alternative and how they affect resources.

Submitted by: Laura Kinsel-Baer

Response to Comment: Noted.

Chapter: 3 Starting DEIS Page #: Starting DEIS Line #:

Comment: Consider the alternative of letting the river flow naturally. An extension of the analysis of historical flow conditions found in Chapter 3 to include the consequences of removing all human-engineered flow barriers would be interesting in and of itself, but would also serve to strengthen the argument that management of the Upper Rio Grande Basin is necessary to fulfill the three threshold criteria and useful in fulfilling the nine decision criteria. The consequences and benefits of having the river so highly "managed" should be discussed.

Submitted by: Laura Kinsel-Baer

Response to Comment: Defining the 'natural flow' of the river is not possible in this arid system subject to historic water delivery constraints imposed by Interstate Compacts and International Treaties. Water storage is essential to meet these delivery requirements as well as provide irrigation water to Pueblos and non-Indian farmers. The only mainstem reservoir on the Rio Grande is Cochiti Reservoir which serves a critical flood protection role for downstream communities including the City of Albuquerque. Non-flood waters are passed through Cochiti Reservoir. Most of the 'management' occurs along the Rio Chama - flows from the Rio Chama contribute only one third of the total flow along the Rio Grande.

Chapter: 4 Starting DEIS Page #: 14 Starting DEIS Line #:

Comment: Reconsider Alternatives to better serve biological resources. In my review of the affected resources in Chapter 4, Alternatives that are not realistic in the view of the JLA often ended up being the ones that best suited biological resources. This sends up a red flag and should warn the JLA that perhaps the Alternatives should be reconsidered to better serve ecological requirements, in addition to serving human water needs and land uses. For example:

-The No Action Alternative was found to be best for aquatic habitat (lines 18-19, p. IV-24.

-The No Action, I-1, and I-2 Alternatives (not fulfilling one of the threshold criteria) were found to be best for riparian habitat (lines 14-15, p. IV-32).

-Alternatives I-1 and I-2 were largely found to be best for T&E species (line 26, p. IV-45; lines 16-17, p. IV-55; lines 17-18, p.IV-56).

Submitted by: Laura Kinsel-Baer

Response to Comment: Alternatives that did not meet threshold criteria for compact deliveries were in fact better in supporting ecological requirements. This information will be used to provide potential operating and seasonal mitigations of undesirable impacts associated with the preferred alternative.

Chapter: 4 Starting DEIS Page #: 9 Starting DEIS Line #: 3

Comment: Throw out Alternatives I-1 and I-2. In lines 3-7 on p. IV-9, it is stated that Alternatives I-1 and I-2 (as well as the No Action Alternative) do not meet the threshold criteria for compact deliveries. Once it became clear that two of the Alternatives did not meet the threshold criteria, these should have been discarded. Carrying out the analysis of unrealistic alternatives until the end is a waste of time and resources. These could have been altered to meet all three threshold criteria, different Alternatives could have been chosen from the pool, or these two could have been simply left out of the analysis.

Submitted by: Laura Kinsel-Baer

Response to Comment: While they could have been discarded earlier in the process, the analysis of Alternatives I-1 and I-2 yielded important information concerning intermediate storage and LFCC diversion options that lead to the identification of possible operational and seasonal mitigation of undesirable impacts.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: Preferred alternative B-3 provides the least benefit to aquatic and riparian habitat resources of all action alternatives as illustrated in Figures 4- 15 and 4-24. This is a measure of how poorly the preferred alternative supports the river ecosystem and the natural resources dependent upon a healthy river.

Submitted by: Lisa Kirkpatrick, NM Department of Game and Fish

Response to Comment: The Decision Support Model identified Alternative B-3 as the top-ranked alternative at the time the DEIS was published, based on all resource areas evaluated. Alternative B-3 provides increased ecosystem support in the Central Section, with lesser degrees of support in the Rio Chama section. The goal of this EIS is to select an alternative that meets the threshold criteria and balances all nine criteria not only one.

Chapter: 2 Starting DEIS Page #: Starting DEIS Line #:

Comment: Based on comparison of the action alternative by potential impact, NMED supports the I-1 alternative. This alternative is the environmentally preferred alternative, as noted in Table S-2. We believe this alternative is the most protective of the goal of the federal Clean Water Act to protect, restore, and maintain the physical, chemical, and biological integrity of surface waters. NMED recognizes the challenges this alternative may bring as far as meeting compact obligations, but it is our understanding that all alternatives considered in the DEIS are potentially viable since the conclusion of whether or not Compact and Treaty Compliance are "met" is based on modeling exercises. Based on discussions between our staff and representatives at the public meetings held around the state, it is also our understanding that several of the components of alternatives I-1 and 1-2 are seasonal and could be addressed through

modifications. Of the preferred alternative, B-3, because all of the alternatives were modeled with worse case scenarios.

Submitted by: Marcy Leavitt, NM Environment Department

Response to Comment: The environmentally preferred alternative is based only on the score of the alternative for only on two criteria: 1) ecosystem and 2) water quality. The EIS goal is to find the alternative that best meets all nine criteria.

Chapter: 2 Starting DEIS Page #: Starting DEIS Line #:

Comment: By way of this Bureau's detailed reviews and comments and enhanced by our staffs discussions and interaction with personnel from the agencies that propose and promote this project, we have made it clear that the SWQB's Preferred Alternative would be I-1, the project's self-described 'environmentally preferred alternative'.

Submitted by: Marcy Leavitt, NM Environment Department

Response to Comment: Noted.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: We are concerned that the preferred alternative, B-3, does not provide enough support to the overall ecosystem. Especially related to riverine and riparian habitat diversity. Since "meets ecosystem needs" was identified as the top ranking decision criteria by the joint lead agencies, Steering Committee, and stakeholders (Table 4-1). This deficiency in the preferred alternative is a concern. NMED would like to see this sort of melding of alternatives I-1 and B-3 in the final EIS to help ensure protection of surface waters and associated aquatic and riparian habitat to the extent possible.

Submitted by: Marcy Leavitt, NM Environment Department

Response to Comment: Alternative B-3 is the top ranked alternative considering the nine criteria. The goal of this EIS is to select alternative that meet the threshold criteria and balance all nine criteria not only one. Ecosystem performance in the Central section is slightly enhanced due to the higher channel capacity below Cochiti under this alternative.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: The preferred alternative (Alternative B-3) under the current DEIS is the most detrimental alternative in terms of riparian areas in the San Acacia reach, although every alternative outlined has negative impacts to the natural system if the LFCC is operated as a channel.

Submitted by: SW Region Director, US Fish and Wildlife Service

Response to Comment: Noted.

Chapter: 2 Starting DEIS Page #: Starting DEIS Line #:

Comment: Alternatives that would improve the identified purpose, of increased efficiency, such as ditch system improvements and phreatophyte removal, should be fully evaluated as components of alternatives in the DEIS. Alternatives including removal of the jetty jacks in the Santo Domingo reach and facilitating

restoration of a more meandering and braided channel, and the associated native habitats, should be fully examined. Modifications to Cochiti Dam that could address outflow temperature problems should also be considered in this DEIS.

Submitted by: Vilma Ruiz, Pueblo of Santo Domingo

Response to Comment: The scope of this DEIS was limited to changes in water operations associated with the management of dams, reservoirs, and changes in existing physical capacity of river channels and conveyance structures. Other construction and management activities are being evaluated by various federal and state agencies as part of other programs. Changes in the operation of Cochiti Dam were not included in this DEIS.

Chapter: N Starting DEIS Page #: Starting DEIS Line #:

Comment: If this purpose had been included in the purpose and need statement, the range of alternatives identified would have, in all likelihood, been different. For instance, it can be concluded from data in the DEIS appendices that the No Action Alternative is actually the best alternative analyzed in terms of water deliveries to irrigators. See DEIS Appendix N, Section 1.3.1. This raises a serious question as to whether all of the URGWOPS effort is to a substantial decree misdirected to a proposed action and action alternatives that will fail to make any improvement upon, and may worsen, the effectiveness of the operations in meeting the primary purpose of water deliveries for irrigation and other consumptive and traditional needs.

Submitted by: Vilma Ruiz, Pueblo of Santo Domingo

Response to Comment: Water delivery for agricultural uses is specified in the first need statement on page I-2. Contractual water delivery obligations are addressed in need statement number 4 on the same page. Table N1.9 indicates that there is no significant difference between NA and action alternatives with regard to irrigation deliveries. The primary factor responsible for irrigation shortfalls is hydrologic variability - or overall availability of water. Hydrology, not water operations, creates the annual seasonal shortfalls on the order of 32 percent Tables 4-19 and 4-20 show that alternative B-3 performs slightly better than No Action along the Rio Chama, with no difference noted in the Central and San Acacia Sections.

1.4 Aquatic Systems

Chapter: 4 Starting DEIS Page #: 31 Starting DEIS Line #: 1

Comment: Apparently the numbers around the rose diagram are the 40-year planning period (not really said on page 30) and all of these four options of Abiquiu (NOT on figure 4-17) Native Conservation Storage, which are ONLY available under B-3 (the real Issue) changes in the listed planning years.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Conservation storage is available under all action alternatives. The use of carryover storage for Alternative B-3 was analyzed as an example of how stored water could be used to provide for mitigation efforts.

Chapter: 4 Starting DEIS Page #: 31 Starting DEIS Line #: 1

Comment: CO and KAF are not in the Acronyms and Abbreviations.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Acronyms will be added.

Chapter: 4 Starting DEIS Page #: 30 Starting DEIS Line #: 12

Comment: It looks like 'negotiation of carryover storage provisions' is a major issue - I can't find that on page 22 under the beginning section about issues. Lines 17-19 seem to bring out another issue about using amounts of Abiquiu 'native water stored' and the carryover (CO) storage apparently could be a strong issue. Therefore buffering dry periods, which can be done under the Compact under the No Action Alternative could be possible?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Only under those alternatives where additional upstream storage was possible we would see a benefit to augmenting those periods of low flow downstream through the use of carry-over storage. No Action does not have this ability to store upstream, except by special agreement and deviation from normal reservoir operations.

Chapter: 4 Starting DEIS Page #: 29 Starting DEIS Line #: 21

Comment: The phase 'could be mitigated by releases', but the equations in Figure 4-16 doesn't change by more than 5%, which is the uncertainty mentioned numerous times in these sections. Apparently, 'x' in the equations are for 0, 100, and 200 cfs? What happens when the flow is 8000 cfs, which should provide some 'overbank flooding', like the values provided in Table 4-4? What is the y-axis in the figure, AF? Is there really six different curves in the figure, as shown by the legend?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: This figure is not a comparison of alternatives that is subject to the threshold of 5% uncertainty. The Y-axis will be labeled Habitat Area (square feet). For each fish, the data point is shown and the best fit according to the regression analysis. Previous text explains the graph.

Chapter: 4 Starting DEIS Page #: 29 Starting DEIS Line #: 7

Comment: First sentence uses 'best supported' - the NA has a value of 460% in Figure 4-15 and the lowest value is 440% for E-3 and this difference looks like the 'three percentage point difference' (really not an issue?) mentioned in the fourth sentence. The percentages used in Figure 4-15 came from scheme or method that wasn't mentioned on pages 23 and 24. If Figure 4-15 took out the three common or similar 'aquatic habitat resources'; then the difference of the seven alternatives (showing extremes in 'supports fish & wildlife diversity' and in 'supports reservoir habitats') would clearly show the more than the three percentage point difference. In any case; the ranking order doesn't seem to answer address a major issue as suggested on page 22. If Figure 4-15 is to be used, why is the order in this figure different that the order in Figure Table 4-4 (NA, B-3, ..., I-3) and Table 4-5, Table 4-6, and even Figure 4-14 that doesn't use the NA data.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Reference to Appendix P was added to point the reader to more detailed information. The criteria listed for Figure 4-15 are the aquatic habitat measures that contribute to meeting ecosystem needs. These are explained in more detail in Figure 4-33 and Table 4-29.

Chapter: 4 Starting DEIS Page #: 29 Starting DEIS Line #: 3

Comment: The first sentence probably refers to the data in Table 4-6; but the 'similar to the observed under No Action' would only apply to all items under Heron Reservoir and Cochiti Reservoir. However, the 'Net Reservoir Elevation Range of Change' for Cochiti is zero for B-3. Also, the 'Net Reservoir Elevation Range of Change' for Heron Reservoir on E-3 is -0.012, which doesn't appear to be the same as the other mentioned alternatives. The second sentence uses the term 'related to lower reservoir exchange rates coupled with changing reservoir elevations' - the reservoir exchange rates at Heron Reservoir are the same for all the alternatives; they are definitely 'higher' for both Abiquiu and Cochiti Reservoirs when compared to the other four like alternatives.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The wording in this section will be changed to clarify and track between sections.

Chapter: 4 Starting DEIS Page #: 31 Starting DEIS Line #: 1

Comment: Where could the NA alternative be located on this figure and on Figure 4-16 or can't the NA Alternative use 'Mitigation Measures'?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Mitigation is only for action alternatives providing native conservation storage in Abiquiu. Alternative B-3 was analyzed as an example - other action alternatives would provide less water for mitigation. The No Action alternative does not allow conservation storage, therefore there is no water available for mitigation under No Action.

Chapter: 4 Starting DEIS Page #: 27 Starting DEIS Line #: 11

Comment: These lines say that things are different in Figure 4-14; BUT it seems that all of the #days less than 100 cfs at Central are the same for each alterative! It also seems that all the #days less than 100 cfs at San Acacia are the same for each alterative? The phase '10 days short to provide sufficient water to supplement flows in the San Acacia Section' must be an Issue; BUT it wasn't mentioned in that section. The values in lines 14-17 don't seem to be the same as the values in Figure 4-14. It might be that the legend is incorrect and the values are correct?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The wording in this section will be changed to clarify and track between sections.

Chapter: 4 Starting DEIS Page #: 24 Starting DEIS Line #: 17

Comment: Furthermore, I question if many of the numbers in Table 4-4 can be measured to 5-6 significant numbers? Thousands of acres would definitely be a better heading and round the results presented in the appendices to much less precision!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Table 4-4 data contains various levels of magnitude. The numbers were rounded as appropriate for the precision of the data presented.

Chapter: 4 Starting DEIS Page #: 23 Starting DEIS Line #: 28

Comment: Explain how fish indicator species were chosen. In lines 28-30 on p. IV-23, certain fish species were chosen as indicators for aquatic habitat analysis with no discussion of the reasoning behind the choice. This information should not be left out of the disclosure of the analysis.

Submitted by: Laura Kinsel-Baer

Response to Comment: Specific information and justification for choosing fish indicator species can be found in Appendix K (Biological Technical Report and in the Aquatic Habitat Model report).

Chapter: 1 Starting DEIS Page #: Starting DEIS Line #:

Comment: The Department also submits comments regarding a general lack of recognition within the DEIS of the ecological needs of the river related to flow regime, which determine the needs of all natural resources along the river, including the existing federally listed species.

Submitted by: Lisa Kirkpatrick, NM Department of Game and Fish

Response to Comment: The EIS recognizes the importance of the ecological system requirement and this criterion was the highest weighted one of the nine criteria.

Chapter: 3 Starting DEIS Page #: Starting DEIS Line #:

Comment: In response to the Draft Environmental Impact Statement (DEIS) for the Upper Rio Grande Water Operations Review (URGWOR), the New Mexico Department of Game and Fish (Department) wishes to provide updated information on fish occurrence data presented in Section 3.3. The description of existing biodata (Section 3.3) contains omissions and errors regarding fishes. In Table 3-2, species that should be included in the Northern Reach include red shiner, Rio Grande chub, fathead minnow, flathead chub, longnose dace, Rio Grande sucker, white sucker, common carp, and smallmouth bass (all based on personal observations by Department personnel during 2005 surveys). In addition, the Department recommends moving Rio Grande cutthroat trout as it does not occur (except perhaps by accident) in the main stem Rio Grande.

Submitted by: Lisa Kirkpatrick, NM Department of Game and Fish

Response to Comment: This table will be updated per the information provided.

Chapter: 3 Starting DEIS Page #: Starting DEIS Line #:

Comment: In Table 3-3, Heron Lake does not have Rio Grande cutthroat trout, white crappie, or yellow perch. El Vado Lake does not have Rio Grande cutthroat trout or yellow perch - it does have mosquitofish and smallmouth bass. Abiquiu Lake does not have Rio Grande cutthroat trout - it does have black bullhead, black crappie, and river carpsuckers. Kokanee are maintained through stocking and walleye are self-sustaining. Cochiti Lake does not have gizzard shad, rainbow trout, striped bass, or threadfin shad - it does have mosquitofish, yellow perch, and river carpsucker. Elephant Butte Lake does not have brown trout or rainbow trout - it does have bluegill, common carp, and river carpsucker. Caballo Lake has black bullhead blue catfish, bluegill, channel catfish, common carp, fathead minnow, flathead catfish, gizzard

shad, green sunfish, mosquitofish, red shiner, smallmouth bass, smallmouth buffalo, threadfin shad, and river carpsucker. Species listed as not occurring may show up accidentally, but are not present in ecologically or recreationally significant numbers (e.g., brown trout have been captured in Elephant Butte Reservoir but at the rate of about one per decade).

Submitted by: Lisa Kirkpatrick, NM Department of Game and Fish

Response to Comment: This table will be updated per the information provided.

Chapter: 3 Starting DEIS Page #: 18 Starting DEIS Line #:

Comment: Over the past 4 years, we have completed numerous fish population surveys on the Rio Grande and tributaries. The fish list for that section could be greatly expanded. Also, Rio Grande cutthroat is not found in the mainstem Rio Grande or lower tributaries.

Submitted by: Sam DesGeorges, Bureau of Land Management-Taos Field Office

Response to Comment: This table will be updated per information provided by NMDGF. Rio Grande cutthroat trout will be removed.

Chapter: 3 Starting DEIS Page #: Starting DEIS Line #:

Comment: With regard to impact analysis, TAFO has a concern in the lack of impact analysis for the Rio Chama between EI Vado and Abiquiu Reservoirs on aquatic resources. According to Chapter III, Existing Conditions in the Affected Environment, specific resource analysis consistently identifies only that reach from below Abiquiu Dam to the confluence of the Rio Chama and Rio Grande. Chapter IV, Impacts of Water Operations Alternatives, does not indicate any specific reach of the Rio Chama, so it is unclear if the analysis is combining the entire Rio Chama from Heron Reservoir to the Rio Grande confluence or if this follows the pattern of Chapter III and is only analyzing impacts below Abiquiu Dam. Technical Reports in volume 2 indicate that only some resources (e.g., recreation) are analyzed for this section of the river. These reports indicate clearly that other resources are excluded.

Submitted by: Sam DesGeorges, Bureau of Land Management-Taos Field Office

Response to Comment: No impacts are expected for aquatic resources for the Rio Chama between El Vado and Abiquiu Reservoirs. Reservoir and riverine impacts were considered including impacts to Heron, El Vado, and Abiquiu Reservoirs.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: It would seem inappropriate not to analyze the impacts on the Rio Chama between El Vado Dam and Abiquiu Reservoir. This section of the Rio Chama is specially designated as Wild and Scenic, requiring special resource management of Outstanding Resource Values (ORV) for which the River was designated and which are directly tied to water availability and delivery. Two actions outlined in the DEIS will likely have a direct effect on this reach: change in waiver date for San Juan Chama water delivery and the available storage capacity for native water in Abiquiu Reservoir. TAFO believes that these 2 changes to operation could benefit numerous resources within the Wild and Scenic section of the Rio Chama depending on how they are managed.

Submitted by: Sam DesGeorges, Bureau of Land Management-Taos Field Office

Response to Comment: The effects of Abiquiu Reservoir capacity are part of the impact analysis in Chapter 4. Change Waivers date should not impact the Wild and Scenic reach of the Rio Chama in any significant manner beyond any impact currently seen under normal operations. This EIS evaluated the effects of changes in storage under historic patterns of release. Actual releases of stored water are subject to contractor and water rights holder requests that may vary from year to year.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: Another concern for Rio Chama between El Vado and Abiquiu Dams is the nature of release hydrographs. Currently, releases hydrographs have very steep ascending and descending limbs. Extreme changes such as these can have adverse affect on aquatic biota due to short term changes in available habitat. Although this is often attributable to El Vado irrigation releases, changes in waiver date for San Juan-Chama water may result in similar hydrographs originating from Heron Reservoir - TAFO requests that the operators address this issue and consider mitigation measures to reduce impact.

Submitted by: Sam DesGeorges, Bureau of Land Management-Taos Field Office

Response to Comment: The modeled pattern of release of waivers in URGWOM did not differ between action alternatives and No Action operations. However, in practice, contractor demands for waivered water can be unpredictable. Mitigation measures for aquatic and riparian resources were identified on pages IV-29, IV-30, IV-43, IV-44, and IV-57.

Chapter: 4 Starting DEIS Page #: 22 Starting DEIS Line #:

Comment: TAFO has completed an instream flow study for the Wild and Scenic reaches of the Rio Chama that outlines impacts to ORVs at different flows. We suggest that this be reviewed for analysis of impacts in that section.

Submitted by: Sam DesGeorges, Bureau of Land Management-Taos Field Office

Response to Comment: El Vado operation rules were the same for NA and action alternatives. Therefore, no adverse impact is expected in this reach of the river.

Chapter: 4 Starting DEIS Page #: 22 Starting DEIS Line #:

Comment: Also, TAFO manages parcels of land on the Rio Chama below Abiquiu. We suggest that mitigation for aquatic habitat losses be considered here for recreational fish species and riparian habitat.

Submitted by: Sam DesGeorges, Bureau of Land Management-Taos Field Office

Response to Comment: Noted. Current analysis considered loss to aquatic and riparian habitat.

1.5 Content and Methodology

Chapter: 2 Starting DEIS Page #: Starting DEIS Line #:

Comment: 40 C.F.R. § 1502.14. CEQ regulations call on the Corps of Engineers, Bureau of Reclamation and Interstate Stream Commission (JIAs) to "rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated," "[devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits," "include

the alternative of no action," and "include appropriate mitigation measures not already included in the proposed action or alternatives," (emphasis added). The JLAs have failed on two of these four counts. First, the Draft EIS presents six alternatives, in addition to the No Action, for detailed analysis. Each is only briefly described. We appreciate the desire for brevity, yet in no way were these alternatives "rigorously explored," "considered in detail," nor "devoted substantial treatment to." "The 'touchstone for our inquiry is whether an EIS's selection and discussion of alternatives fosters informed decision-making and informed public participation.'" City of Angoon v. Hodel, 803 F.2d 1016, 1020 (9th Cir. 1986). The Draft EIS fails to define several aspects of each alternative. These alternatives inform neither the public nor the JLAs.

Submitted by: Kara Gillon, Defenders of Wildlife

Response to Comment: The JLA followed the NEPA requirement in developing alternatives and for selecting subsets of alternatives for detailed evaluations. Alternatives selected for detailed analysis are described in detail on pages II-8 to II-9.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: URGWOM's Modeling Assumptions Are Not Reasoned. The hydrological model is based on a set of assumptions that distort the results used to predict potential environmental impacts. These results understate the magnitude of potential impacts to the environmental resources within the affected area. These assumptions include:

I. Incorrect starting elevations for Upper Rio Grande reservoirs, which distort all of the projections of future elevations, hydrological conditions, and other reservoir operations. The model apparently assumes that the 2001 reservoir storage conditions are reasonable approximations of current conditions. Reservoir conditions in 2001 are much different than current day elevations. The model should use the best available data, and not outdated information that minimizes the potential for shortage.

2. The model's reliance on an incomplete historical record may generate an overly optimistic set of projections for water availability in the future. The discussion of the 40-year hydrologic sequence (see II-2) indicates that URGWOM is based on only 25 years of record - an unusually wet period - and that the most recent Colorado River flow data used was from 1999, ignoring 6 full years of records, which include one of the driest years on record - 2004. The incomplete data input may decrease the likelihood of system shortage.

3. The model fails to account for the likelihood that climate change will affect the hydrology of, increased demand would further exacerbate the trend toward system shortage, with resultant adverse impacts on habitat and listed species.

Submitted by: Kara Gillon, Defenders of Wildlife

Response to Comment: URGWOM assumptions are described in the model documentation that can be found on http://www.spa.usace.army.mil/urgwom/default.asp. These model runs were made during 2002/2003 and the starting point was selected as the storage at the end of 2002 which is a reasonable assumption. The model used the best available data at the time. The reservoir storage at the start of simulations was assumed to be a conservative (low storage) starting point for the analysis. Although we used 25 years of historical data to generate a 40-year synthetic hydrograph, our planning period includes dry years similar to the 1950's drought and reflects climate statistics based on evaluation of a 2,000-year period of tree ring records. A direct reference to a report by S. S. Papadopulos & Associates will be added on page II-2.

Chapter: 1 Starting DEIS Page #: Starting DEIS Line #:

Comment: High quality of analysis. Overall, I found the quality of the analysis in this study sound, scientifically-based, understandable, and thorough. In a highly important matter such as the future of freshwater resources, thorough analyses that consider all factors are particularly appreciated.

Submitted by: Laura Kinsel-Baer

Response to Comment: Noted.

Chapter: 1 Starting DEIS Page #: Starting DEIS Line #:

Comment: Excellent organization. This Review and DEIS appear very well-organized, utilizing a structured hierarchical system and formal models to aid in the selection and analysis of decision criteria. The Joint Lead Agencies also appeared to make a conscientious effort to involve many additional stakeholders. Public participation and scoping sessions, as stipulated in NEP A, were apparently achieved through the many public meetings held over the last few years. It seems that the process was very effective at yielding the document.

Submitted by: Laura Kinsel-Baer

Response to Comment: Noted.

Chapter: P Starting DEIS Page #: Starting DEIS Line #:

Comment: The DEIS should disclose in the text of Appendix P that the use of URGWOM loss rates to route water supply to users may not be statistically rigorous enough to ensure satisfactory water operations, rather than relying upon the reader to obtain a copy of this reference to discover this information. In addition, the DEIS text itself should acknowledge that there is a limitation to applying URGWOM loss rates as an absolute value, when seeking flexibility in water operations. By disclosing this limitation in the body of the DEIS, those seeking flexibility in water operations would be fully informed and more supportive of the need to field adjust operations when required.

Submitted by: Lawrence Gutierrez, Pueblo of Sandia

Response to Comment: These loss rates were estimated for each month based on daily flow between gages for days with no precipitation (i.e., no local inflow) considering any measured inflow/outflow within each reach (refer to URGWOM documentation). It is not known that these loss rate over or under estimate the downstream flow since these are the best available information and no study has been done to indicate otherwise. This EIS does not specifically address supplies for individual water users.

Chapter: P Starting DEIS Page #: Starting DEIS Line #:

Comment: The URGWOM's limitations due to data quality uncertainties are not sufficiently disclosed. For instance, Appendix P) Section 2.4.1, discusses the data quality of the URGWOM by referencing a 2002 publication by Thomas. When this Thomas publication is examined, one finds that the error bars on the actual loss rates from Cochiti to San Acacia are larger than the total amount of water that is used by some of the different water users in that reach. For water users whose supply availability is routed using URGWOM loss rates, this is a serious limitation.

Submitted by: Lawrence Gutierrez, Pueblo of Sandia

Response to Comment: URGWOM, like any model, has its limitations due to uncertainties and data quality. URGWOM is based on the best available information. This EIS does not specifically address supplies for individual water users

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Chapter: S **Starting DEIS Page #:** **Starting DEIS Line #:**

Comment: As noted in a few of the above resource sections, NMED is concerned that the summary table exaggerates the difference between alternatives in some instances. While understanding the need to summarize for ease of comparison, the impact of this summary table is large since many reviewers will just utilize this table, so additional scrutiny of the ranking system is warranted. One idea would be to expand the summary table by reach.

Submitted by: Marcy Leavitt, NM Environment Department

Response to Comment: Noted.

Chapter: 4 **Starting DEIS Page #:** **Starting DEIS Line #:**

Comment: Although "adaptive flexibility" is used to determine the preferred alternative, no requirement of low-flow augmentation or peak-flow augmentation is included in the document. There have been efforts to quantify the water use and benefit to the environment of periodic peak flows on the Rio Grande in this reach (Tetra Tech, Inc., 2004), but further analysis based on new information on flood inundation area, groundwater/surface water interaction, and changes to river channel characteristics following high flows is now available. This new information should be incorporated to update planning and adaptive management strategies.

Submitted by: SW Region Director, US Fish and Wildlife Service

Response to Comment: Low-flow augmentation and peak flow augmentation are among the important biological resource indicators that are used to evaluate impacts of the alternatives. As part of the analyses they would '...assist in the design and implementation of detailed adaptive management plans for future specific agency acting.' (IV-95).

Chapter: 4 **Starting DEIS Page #:** **Starting DEIS Line #:**

Comment: Diversions to the LFCC cause the most impacts to the San Acacia reach and the fish and wildlife resources of the area. The Refuge recommends that prior to selection of an alternative for water operations, the following be accomplished: A thorough evaluation of the LFCC is necessary prior to selection of any of the alternatives listed in the DEIS. This evaluation must include a summary of past performance of the LFCC and a complete evaluation of the current and future operation of the LFCC as it is currently configured. An analysis of the current design of the channel and an analysis of the possible future alternatives to the current configuration of the LFCC, including delivery options for the reach from San Acacia to Elephant Butte Reservoir, are needed. This has not been accomplished within or outside of this DEIS effort. Important aspects of the system to be included in this comprehensive evaluation are delivery of water to the MRGCD and Refuge, drain return flows from these two water users, water losses associated with each delivery option, bank storage available for each option, the range of flows that alternatives would be operating within, sediment management (including outfall operation and predicted life span of each alternative design), and impacts and benefits to the river ecosystem for each alternative.

Submitted by: SW Region Director, US Fish and Wildlife Service

Response to Comment: The riparian team elected to use USACE wetland definitions and identified wetland acreage, FLO 2D modeling, and MOD branch groundwater-surface water models for analysis, representing the best available data at the time of the analysis. The additional data presented in the Tetra Tech 2004 report does not substantially contribute to the analysis except as it may increase our understanding of already significant adverse impacts from diversion of water to the LFCC in the San Acacia Section. Threatened and endangered species management and riparian habitat are called out as resources that may require additional environmental commitments if and when a specific alternative is selected for action (IV-93). This would be a more appropriate time to incorporate new data useful in designing more detailed environmental commitments for the San Acacia Section. Noted. Diversions to the LFCC are currently authorized under the No Action alternative and all other alternatives. The EIS only examines the operation of 4 possible ceilings to diversion operations at the LFCC while assuring that the terms or the 2003 BO are met and up to 250 cfs is maintained in the main stem if it is available in the river. Detailed evaluation of any future operation plan for the LFCC would need to be completed prior to any contemplated change from the current operations.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: Diversions to the LFCC cause the most impacts to the San Acacia reach and the fish and wildlife resources of the area. The Refuge recommends that prior to selection of an alternative for water operations, the following be accomplished: the study must take into account a changing reservoir level. This evaluation is important because the LFCC is utilized as a delivery channel under all alternatives in the DEIS. These diversions have had, and will continue to have, a detrimental impact on fish and wildlife resources, riparian habitat, and the safe channel carrying capacity of the river. Continual low flows in the river channel below San Acacia Diversion Dam will result in limited ability of the river to pass high flows safely downstream which may endanger the local communities and the infrastructure of the Refuge. Further research into the impacts to the river from the present configuration of the LFCC, possible remediation of those impacts, and advantages to both water delivery and riparian and river health by changing LFCC current figuration should be carried out.

Submitted by: SW Region Director, US Fish and Wildlife Service

Response to Comment: Noted. Page IV-93 acknowledges that additional environmental commitments may be required to avoid, mitigate, or compensate for adverse impacts to riparian resources.

Chapter: 1 Starting DEIS Page #: Starting DEIS Line #:

Comment: An overemphasis on Compact obligations, with a consequent overlooking of other legal obligations under statute, contract and trust duty, occurs throughout the document. The Introduction, for example, stresses the Compact, but mentions no other applicable law. Section 1.7.2 on laws specific tile Act of March 13, 1928, 45 Stat. 312, wherein Congress recognized the prior and paramount rights, and certain rights associated with newly reclaimed lands, of the six Middle Rio Grande Pueblos. Other laws, such as the federal Flood Control Acts, are simply listed. Without any discussion of the provisions of these laws, such as those preserving tribal rights, the list is meaningless.

Submitted by: Vilma Ruiz, Pueblo of Santo Domingo

Response to Comment: Table N1.9 indicates that there is no significant difference between NA and action alternatives with regard to irrigation deliveries. The primary factor responsible for irrigation shortfalls is hydrologic variability – or overall availability of water. Hydrology, not water operations, creates the annual seasonal shortfalls on the order of 32 percent. Tables 4-19 and 4-20 show that

alternative B-3 performs slightly better than No Action along the Rio Chama, with no difference noted in the Central and San Acacia Sections.

1.6 Cultural Resources

Chapter: 4 Starting DEIS Page #: 62 Starting DEIS Line #: 24

Comment: The second two performance measures are some percent of something. What are they percentages of? Then the Scores in the bottom portion of this table are developed by dividing the lowest value in the upper portion of the table (using the same rows) by the other values of the other alternatives. This table does NOT compare the other alternatives to the NA. In fact, it seems that the TOTAL score in Table 4-18 is 333%, which is the lowest; THEREFORE, the NA should be the best, for the other alternatives have higher total scores; implying that much more inundation occurs. THEREFORE, the rankings should be the opposite: NA (lowest), I-1 (next lowest), B-3 (highest).

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: We can delete the Scores portion of table 4-18 to minimize confusion. However, the ranks and scores are correct-- the highest percentage reflects the most desirable condition. For example, the least sites inundated under D-3 received the highest score of 100%; the lowest percentage of sites inundated, 67%, received the highest score, etc. Thus, the rankings for cultural resources do reflect the desired condition of minimal inundation for cultural resources sites. The percentages feed into the decision criteria or overall ranking of the alternatives. Impacts to ITAs are discussed separately on p. IV-62, lines 14-19.

Chapter: 4 Starting DEIS Page #: 62 Starting DEIS Line #: 21

Comment: The 55% (E-3) and 90% (I-1) aren't found, particularly since the performance measure is not known by this writeup.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The details are in the Cultural Resources Technical Report, Appendix O, which discusses the data and statistical analyses in detail. The summary is reported in Chapter 4

Chapter: 4 Starting DEIS Page #: 63 Starting DEIS Line #: 1

Comment: Why does each River Section have six different sets of # of sites inundated versus for at least two different Sections of the River. It looks like NA has five different # or years inundated versus # of sites inundated (Why?).

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Figure 4-28 depicts the relationship between # of sites and the years of inundation. There are multiple bars for each alternative to show varying duration per number of sites over the 40-year sequence. For example, under the No Action Alternative in the Rio Chama Section, the graph shows that 4 sites are inundated in 5 years of the 40-year sequence, 3 sites are inundated in 10 years, 1 site is inundated in 20 years, 1 site in 25 years, and 3 sites in 30 of the 40 years in the planning period.

Chapter: 4 Starting DEIS Page #: 61 Starting DEIS Line #:

Comment: Very hard to check out this material, since the 55 to 90% of the affected by the alternatives can't be found at all.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The details are in the Cultural Resources Technical Report, Appendix O, which discusses the data and statistical analyses in detail. The summary is reported in Chapter 4.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: The discussion of Indian Trust Assets in the DEIS is surprisingly deficient. Section 1.7.3 on trust responsibilities, for example, is a short boilerplate statement ("federal laws and treaties established reservations. . ."). There is no consideration of the actual circumstances of, and obligations to, the Middle Rio Grande Pueblos, including the Santo Domingo Tribe. Although the DEIS recognizes in passing that water rights are Indian Trust Assets, it fails to evaluate the impacts of the alternatives on these trust assets. Water is of the highest importance for the cultural and economic survival of the Tribe, and the Indian Trust Assets analysis must take this into account.

Submitted by: Vilma Ruiz, Pueblo of Santo Domingo

Response to Comment: Indian Trust Assets are discussed not only in Section 1.7.3, but are also addressed in Sections 3.5 and 3.6 and Section 4.4.4. Water rights were beyond the scope of this EIS.

1.7 Editorial/Format

Chapter: 1 Starting DEIS Page #: 11 Starting DEIS Line #: 39

Comment: Page I-II, line 39, under Other Laws Affecting the Rio Grande. A suggestion is made to add the following: U. S. Section of the International Boundary and Water Commission 1906 Convention between the United States and Mexico on Equitable Distribution of the Waters of the Rio Grande. Article I - The United States shall deliver to Mexico a total of 60,000 acre-feet of water annually, in the bed of the Rio Grande at the point where the head works of the Acequia Madre, known as the Old Mexican Canal now exist above the city of Juarez, Mexico. However, in case of extraordinary drought or serious accident to the irrigation system in he United States, the amount delivered to the Mexican Canal shall be diminished in the same proportion as the water delivered to the lands under said irrigation system in the United States. Article IV - It is agreed that in the consideration of such delivery of water, Mexico waves my and all claims to the waters of the Rio Grande for any purpose whatsoever between the head of the present Mexican Canal (Acequia Madre) and Fort Quitman, Texas.

Submitted by: Carlos Pena, International Boundary and Water Commission, U.S. Section

Response to Comment: The 1906 Convention between the United States and Mexico on Equitable Distribution will be included in Appendix G in the FEIS.

Chapter: S Starting DEIS Page #: 1 Starting DEIS Line #: 25

Comment: change sentence to state: "Several inter- and intra-state agreements and international treaties mandate..."

Submitted by: Carlos Pena, International Boundary and Water Commission, U.S. Section

Response to Comment: While this is true, the intent of this sentence in the Summary and in Chapter 1 is to describe water management authorities within the scope of the lead agencies, in order to set the stage for the EIS. International treaties will be listed later in Chapter 1 and will be added to Appendix G in the FEIS.

Chapter: S Starting DEIS Page #: 10 Starting DEIS Line #: 9

Comment: Page S-10, line 9, under No Action Alternative. Ten (10) water operations facilities (page S-8) in the basin were mentioned. However, only nine (9) are listed, Caballo Dam is missing. A suggestion is made to add the following: Caballo Dam (Reclamation/USIBWC) - Flood storage capacity is reserved for the temporary storage of flood waters, between elevation 4,172.4 and 4,182.0 feet, which provides the USIBWC's 100,000 acre-feet of flood control storage. The USIBWC, in cooperation with the U.S. Bureau of Reclamation, is responsible for directing flood control operations and determining flood releases from the dam when storage exceeds the top of the conservation pool at 4,172.4 feet. Flood release is required from June 1 through October 31, each year.

Submitted by: Carlos Pena, International Boundary and Water Commission, U.S. Section

Response to Comment: The list on page S-10 is the same as that in Chapter 2, beginning on page 2-5. The same narrative and bullet for Caballo Dam that is in Chapter 2 will be added to the Summary for the FEIS.

Chapter: S Starting DEIS Page #: 15 Starting DEIS Line #:

Comment: Page 5- 15, Table 5-3,- correct the typo "Rio Grand" in the project column.

Submitted by: Carlos Pena, International Boundary and Water Commission, U.S. Section

Response to Comment: This change has been made.

Chapter: 4 Starting DEIS Page #: 72 Starting DEIS Line #: 37

Comment: Page IV - 72, line 37. Change: "International Water Boundary Commission" to "United States Section, International Boundary and Water Commission."

Submitted by: Carlos Pena, International Boundary and Water Commission, U.S. Section

Response to Comment: This change has been made.

Chapter: 4 Starting DEIS Page #: 24 Starting DEIS Line #: 31

Comment: Page IV -24, line 31. Change: "RSGM" to "RGSM."

Submitted by: Carlos Pena, International Boundary and Water Commission, U.S. Section

Response to Comment: This change has been made.

Chapter: 3 Starting DEIS Page #: 63 Starting DEIS Line #: 35

Comment: Page III-63, line 35, please note with the construction of the American Canal Extension Project, Riverside Diversion Dam is no longer serving its intended purpose. In September 2003, the U.S. Bureau of Reclamation removed the walkway and vertical gate falls. At present, the remaining structure is serving as a weir and grade control structure.

Submitted by: Carlos Pena, International Boundary and Water Commission, U.S. Section

Response to Comment: This change has been made.

Chapter: 3 Starting DEIS Page #: 1 Starting DEIS Line #: 38

Comment: Page III-I, line 38, makes reference to the lBWC. IBWC refers to the binational organization, please make a global change and use USIBWC when referencing the United States Section only.

Submitted by: Carlos Pena, International Boundary and Water Commission, U.S. Section

Response to Comment: This change has been made.

Chapter: 2 Starting DEIS Page #: 3 Starting DEIS Line #: 4

Comment: Page II-4, line 4, "The area shown to the right is the extent of this model." There is no area shown on the page.

Submitted by: Carlos Pena, International Boundary and Water Commission, U.S. Section

Response to Comment: Corrected in FEIS.

Chapter: 4 Starting DEIS Page #: 32 Starting DEIS Line #: 31

Comment: It seems that HEC-RAS and some GIS was used in the methods that generated the discussion and summary items on pages 33-37. They are not mentioned here.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: They are mentioned at the end of the next paragraph.

Chapter: 4 Starting DEIS Page #: 32 Starting DEIS Line #: 36

Comment: 'Similarly, if flows at San Acacia permit' - this seems to be an issue that was addressed later?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: This is describing how the analysis through URGWOM modeling was completed. It is a function of the model rules, not an issue.

Chapter: 4 Starting DEIS Page #: 32 Starting DEIS Line #: 29

Comment: This sentence would be helpful to describe the bullet items on lines 21-28. Move it to line 20.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: This change has been made.

Chapter: 4 Starting DEIS Page #: 33 Starting DEIS Line #: 12

Comment: Already has been stated elsewhere.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted.

Chapter: 4 Starting DEIS Page #: 31 Starting DEIS Line #: 1

Comment: Pertaining to the 'mobile sand bed river', which is really steep upstream, has 'relatively large areas of young to intermediate-aged...'. What is the Issue?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The issue is a dynamic river system subject to changes in vegetation mix that favors fairly young stands.

Chapter: 4 Starting DEIS Page #: 33 Starting DEIS Line #: 14

Comment: The 'riparian resources' mentioned here are the ‘Rio Grande riparian resources’.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted.

Chapter: 4 Starting DEIS Page #: 33 Starting DEIS Line #: 29

Comment: It looks like this paragraph should go ahead of the discussions on the LFCC?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Paragraph will be moved.

Chapter: 4 Starting DEIS Page #: 34 Starting DEIS Line #: 1

Comment: 'Perce' in the Units column needs to be divided to ‘Per cent’.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: 'Percent' will be used.

Chapter: 4 Starting DEIS Page #: 95 Starting DEIS Line #: 12

Comment: Take out the adaptive management plans for 'and adaptive management'. The activities don’t have to caused only by adaptive management.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: That is the subject under discussion in this section.

Chapter: 4 Starting DEIS Page #: 32 Starting DEIS Line #: 21

Comment: These should be identical to the performance measures in Table 4-7 and should hopefully be applied to address an issue from page 31.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Table 4-7 includes all of the indicators in the performance measures column.

Chapter: 4 Starting DEIS Page #: 32 Starting DEIS Line #: 5

Comment: This paragraph might be an Issue?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Will be moved to section above for FEIS.

Chapter: 4 Starting DEIS Page #: 31 Starting DEIS Line #: 5

Comment: Most of the sentences are the same as the existing conditions covered in Chapter III. It is very hard to locate the Issues that have been addressed in the Results concerning riparian habitat.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The issues presented are intended to provide a general guide to the analysis that follows. The section will be edited to better describe how the impacts were evaluated and what was used to determine impacts.

Chapter: 4 Starting DEIS Page #: 95 Starting DEIS Line #: 17

Comment: Take out 'data quality' in the first sentence. Add ‘Future’ before the beginning of the second sentence. It MUST BE assumed that the Rio Grande Compact Commission already does current adaptive management and they have done that since 1938! In fact, so has the U.S./Mexican Treaty of 1906 and 1944.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The discussion is about data quality and how future adaptive management and monitoring activities can fill in data gaps. It stresses that these activities must be coordinated with other activities in the Basin, including the Compact Commission.

Chapter: 4 Starting DEIS Page #: 106 Starting DEIS Line #: 21

Comment: Why not list all of the potential mitigation measures, etc. that could be done! Put a Revised Table 4-3 at this location and only include the ones that could be accomplished.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The reference to Table 4-3 was in error and has been removed.

Chapter: 4 Starting DEIS Page #: 34 Starting DEIS Line #: 2

Comment: 'overbank flooding' (possible measured by 'mean annual maximum acres flooded' in the San Acacia Section) is used again, but this performance measure is not in Table 4-7 or Figure 4-18.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Overbank flooding is identified as an impact indicator earlier in the section and measures of flooding (acres, acre-days, frequency) are identified in Table 4-7, which summarizes performance measures.

Chapter: 4 Starting DEIS Page #: 29 Starting DEIS Line #: 21

Comment: For your information, 'target flows' or 'supplement flows' is not defined in the Glossary. When 'carryover' is used, it probably should always be 'carryover storage provision' and that is defined in the Glossary.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Target flows will be defined in the Glossary.

Chapter: 4 Starting DEIS Page #: 44 Starting DEIS Line #: 1

Comment: The figure should be labeled 'Mean Wetted Floodplain Area (acres). Reaches 10, 12, and 13 are in the Central River (or RG) Section and Reach 14 is in the San Acacia RG Section.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The figure caption will be changed to 'Wetted Floodplain Area versus Peak Flows below Cochiti' in the FEIS.

Chapter: 4 Starting DEIS Page #: 32 Starting DEIS Line #: 9

Comment: This paragraph could be combined with the Summary/Comparison subsection.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted.

Chapter: 4 Starting DEIS Page #: 43 Starting DEIS Line #: 5

Comment: These should be Ohmart Type III, I, and V; not 3, 1, and 5 (see Table 4-8).

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Change will be made in FEIS.

Chapter: 4 Starting DEIS Page #: 10 Starting DEIS Line #: 1

Comment: We have 4.4.1.2 General Conclusions and 4.4.1.5 Summary/Comparison by Alternative. Shouldn't they be the same and aren't they to appear after 4.4.1.3 Impact Indicators and 4.4.1.4

Discussion of Results. In any case, it is very difficult to see the order of preference to be I-3, E-3, D-3, and B-3 in Figure 4-3 or Figure 4-4, etc. It sure seems that B-3 is best in Figure 4-3 (the annual maximum and Median are higher than the others!). Figure 4-4 shows that the NA is the best; then I-1. The second paragraph refers to no figures or table and no cited material of an appendix. The extremely short relationship expressed for I-2, I-1, and the NA in this paragraph does not seem to exist in the previous section. Figure 4-6 has I-2 and I-1 deviating from the NA; BUT how does this 'offer fewer opportunities fro storage that reduce operating flexibility in managing water for multiple benefits'? The paragraph dealing with 'Geomorphologic impacts' discusses items like 'Sediment volume decreases', 'Aggradation/degradation changes', etc.: BUT there is NO cited material or figures, etc. in this write-up. Where are the analyses?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: General Conclusions were intended to provide a quick summary of major impacts discussed in more detail in the subsequent sections. The summary/comparison of alternatives was intended to provide amore detailed discussion of significant similarities or differences among alternatives. The material presented in this section highlights the extent of analysis performed. Figures 4-3 and 4-4 are simply showing days at channel capacity. Depending on the issue or resource evaluated, a high number of days at channel capacity may or may not be desired. For example, if the concern is flooding of agricultural diversions, a smaller number of days at capacity would be preferable, whereas if the issue is support for riparian vegetation, a higher number of days at capacity may be viewed as more favorable. Figure 4-6 looks at cumulative credits/debits - alternatives with lesser credits impede the flexibility to potentially use NM credit waters to the benefit of other resources. All resource sections refer to the appropriate technical reports for further detail as directed on pages 4-10 and 4-11.

Chapter: 4 Starting DEIS Page #: 58 Starting DEIS Line #: 33

Comment: 'greater than 10 percent were viewed as potentially significant' - therefore, if a value is only 100% times the 5% level of error; it is 'significant' of only 5% above the 'percentage of days' estimated by the regression modeling.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The determination of significant impacts varies for each resource. The percentage of difference from No Action should not necessarily be consistent for all resources. A 10% difference between alternatives for a specific measure may be significant for one resource but a 1% difference may be significant for another.

Chapter: 4 Starting DEIS Page #: 58 Starting DEIS Line #: 25

Comment: Governmental 'standards' is used. Apparently, these might be Water Quality Standards as generated by the Clean Water Acts of the U.S. Congress?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The sentence identifies state, tribal, and compact standards.

Chapter: 4 Starting DEIS Page #: 58 Starting DEIS Line #: 21

Comment: Why not mention this information came from Appendix M somewhere in this section of the document?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: This change has been made.

Chapter: 4 Starting DEIS Page #: 58 Starting DEIS Line #: 6

Comment: This paragraph seems to fit best under the Methods of Analysis.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Change will be made in FEIS.

Chapter: 4 Starting DEIS Page #: 44 Starting DEIS Line #:

Comment: All in all, when these are compared, nothing really changes much; in fact, the alternatives that give the greatest number of Total Habitat Areas (ft squared or acres) are the NA options!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted.

Chapter: 4 Starting DEIS Page #: 44 Starting DEIS Line #:

Comment: Table 4-12 might be best arranged according to the actual comparisons made in Lines 14-23 on page 48; i.e. I-1 versus NA-0 and NA-500 cfs (seem to be better summarized on page 55). It also appears that I-2 versus NA (1000) is a solid comparison.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted.

Chapter: 4 Starting DEIS Page #: 44 Starting DEIS Line #:

Comment: Tables 4-10 and 4-11 don't need the Rio Chama information. The values in Table 4-11 in the Central Section probably don't need to be included, since they really show nothing in comparison to NA (0 flow).

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: There was an aquatic habitat model site in the Rio Chama and the information from that is included in this section. Noting the minor differences in the Central Section provides useful information for the analysis.

Chapter: 4 Starting DEIS Page #: 44 Starting DEIS Line #:

Comment: The sentence on Lines 35 & 36 of the Methods of Analysis is an Issue!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: This is describing how the analysis was performed.

Chapter: 4 Starting DEIS Page #: 44 Starting DEIS Line #:

Comment: It seems that only a few alternatives should be compared versus NA (0 flow), NA (1000 cfs), etc. (See the General Conclusions on page 45). Some sentences under the Impact Indicators on RGSM aren't needed (they don't relate to any Issue).

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted.

Chapter: 4 Starting DEIS Page #: 43 Starting DEIS Line #: 7

Comment: This overbank flowing is caused 'by releases of Cochiti Peak Flow (cfs) as shown in the figure. This paragraph should be on the same page as Figure 4-25.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Title changed to read 'Wetted Floodplain Area versus Peak Flows below Cochiti.' This overbank flooding is not caused by releases from Cochiti.

Chapter: 4 Starting DEIS Page #: 43 Starting DEIS Line #: 9

Comment: The sentence is not correct at all.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Some text is missing and will be corrected to read: Reaches 10, 12, and 13 are in the Central Section and Reach 14 is the San Acacia Section.

Chapter: 4 Starting DEIS Page #: 37 Starting DEIS Line #: 5

Comment: The 'low flow augmentation' is related to an additional 150 cfs release from Cochiti Reservoir and this needs to be mentioned in this sentence, not just in the figure as a note.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Text will be changed to reflect the following: No Action alternative is unable to augment low flow days at all. All other alternatives are able to augment all low flow days in the Central Section that result from hydrologic variability. Only Alternative B-3, however, provides adequate storage to augment all low flow days in the San Acacia Section. I-1 and I-2 have the least capability for low flow augmentation due to limited storage of native water at Abiquiu Reservoir.

Chapter: 4 Starting DEIS Page #: 42 Starting DEIS Line #: 6

Comment: This information in the paragraph should be on the same page as Figure 4-24.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted. Will try to paginate differently in the FEIS. Figure 4-24 immediately follows this paragraph.

Chapter: 4 Starting DEIS Page #: 41 Starting DEIS Line #: 3

Comment: It seems that this paragraph would be best placed on the same page as Figure 4-23. The last sentence only deals with the San Acacia Reach (not Section), but the Central Reach is least affected (less change in Percent of Resources Supported) as shown in the figure.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Figure 4-23 follows this paragraph. Pagination can be corrected if possible in the FEIS. The San Acacia Section contains only one reach, Reach 14. See definition of sections in Chapter 1. The description of the graph is correct and it is unclear what the commenter thinks should be changed.

Chapter: 4 Starting DEIS Page #: 41 Starting DEIS Line #: 1

Comment: This needs 'Table' before the 4-9.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Change will be made in FEIS.

Chapter: 4 Starting DEIS Page #: 40 Starting DEIS Line #: 1

Comment: Where is 'with 250 cfs bypass' in the title of the middle photo? Where is the legend for these photos? It is very hard to recognize any locations on these photos without a few land marks!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: All alternatives were modeled with a 250 cfs bypass. The photos all show the same stretch of river and the shaded squares show the areas where groundwater is above land surface at different diversions to the LFCC. Bosque del Apache will be labeled in the FEIS.

Chapter: 4 Starting DEIS Page #: 38 Starting DEIS Line #: 39

Comment: The title of Figure 4-21 needs 'in 2001' in it.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted.

Chapter: 4 Starting DEIS Page #: 1 Starting DEIS Line #: 36

Comment: There should be a subheading on 'Hydrologic Impacts Analysis'. There are three paragraphs on this and only one paragraph on 'Geomorphologic Impacts Analysis', which needs to be a subheading on page 11.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Headings have been added for FEIS.

Chapter: 4 Starting DEIS Page #: 38 Starting DEIS Line #: 12

Comment: The value of '250 cfs bypass' isn't shown in Figure 4-22 at all. In fact, it is very hard to see any of the # of acres mentioned in the paragraph.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The colored squares reflect areas where water occurs above land surface. The model assumed there was no 250 cfs bypass and that all flows were diverted to the LFCC for the 2,000 cfs analysis.

Chapter: 4 Starting DEIS Page #: 38 Starting DEIS Line #: 8

Comment: The value of 500 cfs needs to be in the LFCC diversions list in this sentence. The sentence should end with 'in 2001'. Figure 4-21 only has year 2001, which isn't one of the 40-year planning period years!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The analysis shown on Figure 4-22 was not done at the 500 cfs diversion and is correct as stated. We can add reference to modeling flows from the year 2001 as this was a seasonal wetland sensitivity analysis. The surface water/groundwater analysis was done only for a single representative year and not the entire planning period due to limitations in modeling. The goal was to examine seasonal groundwater fluctuations as they relate to surface water flows and diversions to the LFCC.

Chapter: 4 Starting DEIS Page #: 38 Starting DEIS Line #: 4

Comment: Title of the figure needs 'from Abiquiu' after 'Low Flow Augmentation'.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted. Figure title will be revised.

Chapter: 4 Starting DEIS Page #: 38 Starting DEIS Line #: 4

Comment: Under I-3 in Figure 4-20; the left bar must be 'Days Storage...'. This figure should not have two # days less than 100 cfs San Acacia for I-3.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The left bar for I-3 should be shaded to reflect days of storage available.

Chapter: 4 Starting DEIS Page #: 15 Starting DEIS Line #: 9

Comment: Each reservoir needs the word behind the Name of the Reservoir throughout the paragraph. The first two sentences of the paragraph have to do with Figure 4-7 information.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Figures 4-7 and 4-8 are presented as a summary of the information provided in this section.

Chapter: 4 Starting DEIS Page #: 20 Starting DEIS Line #: 1

Comment: The mention of Table 4-3 on line 29 implies where the summary of the information occurs; BUT it seems that the four paragraphs above this three line sentence should have other cited sources of that information! The sentence in lines 20 and 21 should be at the beginning of this section along with the paragraph of lines 22-26. The summary/conclusions are influence by the uncertainty and due to the selected 40-year hydrology that didn't produce greater deviations between the alternatives; BUT apparently that is caused by the constraints of the authorizations and this doesn't need repeated throughout the document?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The results in the paragraphs of the section are summarizing the conclusions derived from the analyses in the EIS. They therefore do not have a source other than this document and citations are not needed. Reference to the technical appendix for details is made earlier in the section. It is not due to the 40-year hydrograph that there are not great differences between the alternatives, but due to the lack of flexibility in order to comply with federal authorities. Where relevant to the effects analysis of each resource, this has been pointed out.

Chapter: 4 Starting DEIS Page #: 94 Starting DEIS Line #: 2

Comment: This is better titled, 'Goals and Objectives for Upper Rio Grande'

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted.

Chapter: 4 Starting DEIS Page #: 24 Starting DEIS Line #: 17

Comment: How are the changes mentioned in lines 31-36 really measured in Table 4-4? Does some habitat change value from one alterative to the next and what were the values in each alternative - not just slightly change or 'would increase slightly! Something is less than sometime else by 4% or sometimes less; meaning this probably isn't really an issue that wasn't mentioned in the Issue portion of the section. Many of these sentences say that sometime is happening to 5-6 species and they are NOT in Table 4-4. The data must be elsewhere?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Table 4-4 relates specifically to RGSM and riverine habitat. This adds to the discussion and leads to the conclusions for aquatic habitat that rank the alternatives, using the decision support software. The details of the analyses and conclusions are in Appendix L.

Chapter: 4 Starting DEIS Page #: 24 Starting DEIS Line #: 17

Comment: Apparently, one is to read the information; then realize they should be NOW be referring to Table 4-4 and analyze the interpretation of the numbers so that 'slightly lessor', 'No significant', 'increase', 'ranks third overall' should mean something to the reader! First of all - there should be the Reservoir Impacts paragraphs and the Riverine Impacts and they are represented by the information in Table 4-4, etc with some uncertainties that are mentioned in every result subsection in Chapter 4, and the summary/comparison will be mentioned at least twice in this subsection and it will likely refer to the

Complete Summary or Results table at the end of Chapter II (but all of this isn't know or realized by the reader).

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Table 4-4 is one of the tables summarizing the results discussed in this section. It is referenced at the bottom of Page 24. The summary of the effects analysis in Chapter 2 is derived and simplified from the discussion in Chapter 4, per CEQ guidance for the organization of an EIS.

Chapter: 4 Starting DEIS Page #: 24 Starting DEIS Line #: 11

Comment: All the 'Thresholds for Significance' are very similar and should be only early in Chapter IV.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The Thresholds for Significance are presented for each resource because they may be different from one resource to another.

Chapter: 4 Starting DEIS Page #: 17 Starting DEIS Line #: 12

Comment: 'Maximum daily flows' is used in the first bullet; BUT this isn't on the scales of the figures in Figure 4-7! All of the information in these bullets apparently refer to Figure 4-7 (which isn't mentioned in the bullets); BUT most of the sentences are very hard to follow in this figure. Some reference to approximate values might clarify the wording and results mentioned.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: This section summarizes the detailed analysis presented in Appendix I. Values are presented in the appendix, as well as on Figures 4-7 and 4-8, where the approximate values can be found. This section is just putting the results into narrative form for the reader to understand the conclusions.

Chapter: 4 Starting DEIS Page #: 17 Starting DEIS Line #: 19

Comment: This entire paragraph should be placed in the section about geomorph. On page IV-18. All of the geomorph sentences should go to this location of information on geomorphologic analysis.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Moved paragraph and Figure 4-12 down under heading of Geomorphology.

Chapter: 4 Starting DEIS Page #: 19 Starting DEIS Line #: 12

Comment: The 'Sources of Uncertainty and Data Gaps' is not really Results; they are items that might affect the Results. This subsection might be best placed at the beginning of the Chapter, but at least at the beginning of the Results or General Conclusions sections. Therefore, any results that have variance by 10% or less doesn't need to be mentioned in the results.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The sources of uncertainty are related to the data and analyses for each resource, which is why they are included in each section, not at the beginning. Variance by 10% may be determined to be significant for a resource, but it may still be relevant to identify impacts that don't reach the level of significance. No change recommended.

Chapter: 4 Starting DEIS Page #: 19 Starting DEIS Line #: 34

Comment: The word 'were' should be replaced with 'are'.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: This change has been made.

Chapter: 4 Starting DEIS Page #: 59 Starting DEIS Line #: 1

Comment: Can we use 'River Section' in place of 'Section'. The 'Reach' is defined in the layout figure and so are the River Sections. The D-3 alternative has right justified numbers and the ranking is on the table!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The convention to use the terms Section and Reach are established and defined in Chapter 1 and are used consistently throughout the EIS. The number alignment will be changed in the FEIS.

Chapter: 4 Starting DEIS Page #: 24 Starting DEIS Line #: 1

Comment: All of this material comes from somewhere - Table 4-6 or what appendix?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: It comes from Appendix L as stated on page 24 of the DEIS.

Chapter: 4 Starting DEIS Page #: 12 Starting DEIS Line #: 7

Comment: Speaking of B-3; the detail of Figure 4-5 (which is also on Figure 4-7) and the information from page IV-8 is needed in this paragraph. It should be dropped on that page.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Inserted reference to Figure 4-5 in this paragraph.

Chapter: 4 Starting DEIS Page #: 19 Starting DEIS Line #: 40

Comment: It seems that these two sentences could be worked in to the beginning of the second paragraph of this section. Also, the figure values and number need to be put in parenthesis at some location within the paragraphs. It is very hard to 'check' the information in these paragraphs if we don't know where they come from (previous sections or info out of the figures?)

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted, no change made because the data are in the technical appendix as well as the summary information in Table 4-3.

Chapter: 4 Starting DEIS Page #: 26 Starting DEIS Line #: 1

Comment: The word 'Fish' needs to be added to the column heading ahead of 'Habitat'. I imagine that the source was some appendix?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The table title states that it is fish habitat. It is stated previously in the section that Appendix L provides the detailed information.

Chapter: 4 Starting DEIS Page #: 23 Starting DEIS Line #: 32

Comment: Reservoir habitats should be reservoir aquatic habitats, it is the water elevation of the reservoir that has a 'rate of change' and this might be stability per the list of Reservoir Impacts. The reservoir exchange rate should be reservoir water exchange rate. What is Habitat stability? It might have to do with Fish habitat area?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The entire section is labeled aquatic habitat so it is assumed that is the type of habitat referenced in this section. Details of the parameters evaluated are in the appendices referenced.

Chapter: 4 Starting DEIS Page #: 23 Starting DEIS Line #: 24

Comment: High is Peak in the Riverine Impacts list? 'suitable aquatic fish habitat' isn't in the Riverine list, but in the sentence. 'supplementing flows' seems to be important but not defined on in the indicator lists!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Peak flow is the indicator, but high and low flows are just used to describe what was analyzed. Supplemental flows were not developed as a performance measure but was analyzed and evaluated for mitigation.

Chapter: 4 Starting DEIS Page #: 20 Starting DEIS Line #: 30

Comment: This is a Major statement; BUT it is very hard to get by looking at Table 4-3 (must be provided in an appendix along with the evaluation scheme to get this order of preference from the performance measures used?) This list doesn't agree with the list on page IV-10, line 2! If Table 4-3 is used; then something about adding scores, dividing scores, or whatever needs to be shown to get the ranking? It could be clarified by referring to a previous section of the method used for getting the Preference!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The list on Page IV-10 refers to alternative preference considering only threshold criteria. The list on page IV-20 refers to alternative rankings considering hydrologic and

geomorphic impacts. The rankings are based on weighted performance measures. Details of weight-based ranking are found in Appendix P.

Chapter: 4 Starting DEIS Page #: 23 Starting DEIS Line #: 21

Comment: Apparently the impacts where mentioned elsewhere and the indicators came out of some reference? Which appendix covers the Impact Indicators? The information 'Riverine' should be 'Riverine Impacts' and 'Reservoir' should be 'Reservoir Impacts' In fact, this entire section on Aquatic Habitat assumed that the reader knows exactly where all of the wording came from and the values used to arrive at all the paragraphs! 'Peak' is used for high, none of the values mentioned are defined as they are in the tables and figures a person must assume that everything is mean, averages, reservoir aquatic habitats; one even can't find glossary terms for habitat stability, suitable aquatic fish habitat, overbank (inside of outside of levels or what) flooding, etc.. In fact, 'riverine' hasn't been defined.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: This section provides a summary of the general conclusions that are presented in a little more detail in the following Discussion of Results, and in great detail in Appendix L. It affords the reader to get a feel for the conclusions without going into detail. Peak flows are used correctly and the indicators do include the types of figures like average peak flow, so the comment is unclear. We will add the term riverine to the glossary.

Chapter: 4 Starting DEIS Page #: 23 Starting DEIS Line #: 14

Comment: The percentages used on these lines came from somewhere - what table or appendix and page number?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The reference to the appendices is included towards the bottom of the page under Methods of Analysis.

Chapter: 4 Starting DEIS Page #: 23 Starting DEIS Line #: 1

Comment: This information came from somewhere - Need to cite the tables used to create these sentences and paragraphs with specific values for increased channel capacity, less storage available, amount of diversion, etc.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The results in the paragraphs of the section are summarizing the conclusions derived from the analyses in the EIS. They therefore do not have a source other than this document and citations are not needed.

Chapter: 4 Starting DEIS Page #: 2 Starting DEIS Line #: 2

Comment: Provide the Source - InfoHarvest 2001 behind the figure title.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The figure was developed for this EIS and has no external source to cite.

Chapter: 4 Starting DEIS Page #: 1 Starting DEIS Line #: 7

Comment: Replace 'our' with 'the'.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: This change has been made.

Chapter: 4 Starting DEIS Page #: 22 Starting DEIS Line #: 16

Comment: A 'general conclusions' subsection and a 'summary/comparison by alternative: Aquatic Riverine and Reservoir Habitats' subsection for each Resource seems to be duplication? It is possible that some of the material in the 'General Conclusions' subsection could really be part of the Issues? It is also possible that the 'General Conclusions' are in the Summary Chapter already; in this isn't so - they should be at that location!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Comment is unclear. Riverine and reservoir habitat impacts are not separated into subsections, other than the summary tables presenting impacts. The information in the Summary chapter is derived from the EIS, so there will and should be duplication between the EIS and the Summary.

Chapter: 4 Starting DEIS Page #: 93 Starting DEIS Line #: 25

Comment: Section 4.10.1 looks like an Introduction to Adaptive Management; not a summary of future activities, which is currently 4.10.4.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: It is identified as a summary for the Adaptive Management section.

Chapter: 4 Starting DEIS Page #: 94 Starting DEIS Line #: 1

Comment: Figure 4-39 has a source and it needs a cited reference!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: It is identified as a summary for the Adaptive Management section. This was created as an original general diagram of adaptive management for this EIS.

Chapter: 4 Starting DEIS Page #: 19 Starting DEIS Line #: 39

Comment: This sentence would be best placed at the end of the first paragraph of this Summary/Comparison by Alternative section.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The discussion is organized, as in all other sections, from north to south, starting with the Rio Chama, then to the Rio Grande. The referenced sentence relates to the Rio Grande so follows discussion of the Rio Chama.

Chapter: 4 Starting DEIS Page #: 95 Starting DEIS Line #: 21

Comment: This sentence could be the continuation of Line 20. Add '(section 2.2.8)' after 'area'. Aren't the listed items below the activities that may be done (not include!).

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The listed items are, as stated, the sources of uncertainty and data gaps that need to be researched in the future.

Chapter: 4 Starting DEIS Page #: 11 Starting DEIS Line #: 26

Comment: The first portion of 4.4.1.4 should have a subtitle of Hydrologic Analyses, similar to the information on page IV-18 that has Geomorph Analyses.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Added Heading level 5 for both Hydrology and Geomorphology.

Chapter: 4 Starting DEIS Page #: 11 Starting DEIS Line #: 32

Comment: Some flows are monthly and some are daily flows in Figure 4-7. It is very hard to tell in the portions of the figure and in the text.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: All graphs depict monthly flows. Peak monthly flows are indicated by the thicker bar behind the percentile box plots. Text will be checked to ensure proper reference to monthly flows.

Chapter: 4 Starting DEIS Page #: 11 Starting DEIS Line #: 38

Comment: The full sentence provides information that isn't shown anywhere, unless it comes from an appendix!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The appropriate appendices with the technical reports are referenced in the paragraphs preceding this sentence.

Chapter: 4 Starting DEIS Page #: 11 Starting DEIS Line #: 39

Comment: 'daily flow near 5000 cfs'; this should be labeled peak monthly flow.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The correction should be made to reflect a peak monthly flow.

Chapter: 4 Starting DEIS Page #: 28 Starting DEIS Line #: 11

Comment: What sections or tables are used to observe this information? More values need to be used in the sentences to show the differences or the rank of the alternatives. Why is a one to five percent change significant for some alternatives over the NA?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The discussion of results refers to Table 4-4. Appendix L provides more detailed analysis. Data on Table 4-4 provide the basis for percentage changes mentioned. A lesser threshold percentage of change for endangered species is considered significant.

Chapter: 4 Starting DEIS Page #: 11 Starting DEIS Line #: 40

Comment: it seems that 400 cfs should be used instead of 288 cfs.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The median flow is 288 cfs.

Chapter: 4 Starting DEIS Page #: 11 Starting DEIS Line #: 44

Comment: the full sentence should follow the material on line 43.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Unclear.

Chapter: 4 Starting DEIS Page #: 12 Starting DEIS Line #: 6

Comment: Beginning with Line 6 - Is this for 'any' contractor of the San Juan-Chama waters or native waters?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Waivers are related to contractors, not native water.

Chapter: 4 Starting DEIS Page #: 15 Starting DEIS Line #: 16

Comment: Recurrence interval doesn't need to be defined here. It could be part of the Glossary!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted.

Chapter: 4 Starting DEIS Page #: 12 Starting DEIS Line #: 47

Comment: This full sentence would be best placed in the previous paragraph about the Abiquiu storage. The 10 to 20 ft elevation change in the last El Vado paragraph should go in this paragraph.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted.

Chapter: 4 Starting DEIS Page #: 15 Starting DEIS Line #: 14

Comment: 'all' implies that the NA and I-1 aren't the same; BUT they are!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The No Action and Alternative I-1 are not the same.

Chapter: 4 Starting DEIS Page #: 25 Starting DEIS Line #: 1

Comment: Table 4-4 could be on the page by itself and the Impact Items across the top should be the same as the ones listed on page 23. RGSM could be spelled out in the title? The value of 0 might be zero or 'none'.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The impact indicators are represented in the column headings. They are abbreviated to make room in the table, but are in the same order as listed on page 23. There is no need to spell out zero, and none may be interpreted as the same as no data when the answer is 0.

Chapter: 4 Starting DEIS Page #: 95 Starting DEIS Line #: 6

Comment: It seems that a better title would be, '4.11 Summary of Future Activities' - adaptive management is just part of them? Line 11 (at the end) needs 'when they' are"

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted.

Chapter: 4 Starting DEIS Page #: 25 Starting DEIS Line #: 3

Comment: Apparently table 4-5 is for aquatic habitat and not fish habitat? The second sentence might only refer to table 4-4 and not table 4-5. The third sentence can't refer to table 4-5 since we have diversions that aren't mentioned in 4-5. The last sentence in this paragraph came from some other reference and nothing in Figure 4-13 is associated with such!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Aquatic habitat and fish habitat are used interchangeably. The discussion is an explanation of the trends shown in Table 4-5. The explanation in the last sentence expands the discussion and is not intended to repeat the information in the figure.

Chapter: 4 Starting DEIS Page #: 15 Starting DEIS Line #: 18

Comment: This doesn't seem to provide an answer on any issue at all. However, some of the last sentences might need to be moved to the Mainstem Rio Grande at Otowi subsection on the next page.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: This is included as part of the effects analyses.

Chapter: 4 Starting DEIS Page #: 27 Starting DEIS Line #: 24

Comment: This would be the place to add a 'Reservoir Impacts' heading.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Results are not completely separated by river and reservoir habitat. The section would have to be reorganized before the headings could be inserted, and not considered to be necessary.

Chapter: 4 Starting DEIS Page #: 27 Starting DEIS Line #: 18

Comment: This paragraph seems out of place! It only needs to be in the Introduction section. There is no Issue pertaining to these reservoirs?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Paragraph will be deleted for FEIS.

Chapter: 4 Starting DEIS Page #: 94 Starting DEIS Line #: 12

Comment: Section 4.10.3 could be titled, 'Current Process'. Line 15 needs 'within the Rio Grande Project' after Council. Line 19 needs 'URWOPS' after formal. Line 24, last sentence might be best to say, 'The purpose of an URGWOPS adaptive...might include:

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The URGWOPS acronym is not official and should not be used in the EIS. Any use of this acronym will be deleted in the FEIS.

Chapter: 4 Starting DEIS Page #: 27 Starting DEIS Line #: 1

Comment: Where does all of this information come from? - there is references and the material must be from an appendix or something.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: It is stated previously in the section that Appendix L provides the detailed information.

Chapter: 4 Starting DEIS Page #: 27 Starting DEIS Line #: 1

Comment: There are words missing in the last 10 spaces in these three lines.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Change will be made in FEIS.

Chapter: 4 Starting DEIS Page #: 26 Starting DEIS Line #: 3

Comment: Figure 4-13 has more information in it than just for 'Longnose Dace Habitat! It has four different species.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The words Longnose Dace will be deleted in the FEIS.

Chapter: 4 Starting DEIS Page #: 16 Starting DEIS Line #: 19

Comment: The last sentence that begins with 'Figure 4-11 shows' - should be the first sentence in the LFCC Diversions and Flow at San Acacia Gage subsection. Line 26 has a sentence beginning with 'Hydrology' (this is the 40-year planning period?) or is this something else that should be defined? Lines 27-30 have values that can't be determine where they came form! Since Figure 4-11 doesn't have the NA in it; how does one really compare the I alternatives to the NA? It seems that the values in this section came from an appendix?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The reference to the figure is intended to immediately precede the figure in the text and is used to introduce it. The reference to hydrology is a general statement regarding how LFCC diversions are controlled, although all of the effects analyses are based on modeling the 40-year sequence. Figure 4-11, as stated in the text, shows only the I alternatives in order to illustrate the range of flows if the diversions were limited to less than the maximum included in the other alternatives, including No Action. As stated previously, the values are shown in more detail in the technical report included in the appendix.

Chapter: 4 Starting DEIS Page #: 17 Starting DEIS Line #: 5

Comment: The flows mentioned in this paragraph are likely 'peak flow'?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The flows are the 75th, 50th, and 25th percentile monthly flows over the 40-year period of analysis.

Chapter: 4 Starting DEIS Page #: 26 Starting DEIS Line #: 2

Comment: The items on the right side of the figure (in the small highlighted box) need to be in the same order as the curves in the figure. For example, the 'Channel Catfish Adult + Juvenile legend should go at the top of the box. Below the box is the 40-year planning period time series (1-40) data - It isn't the years 2003-2042 or even these predicted years!

S**ubmitted by:** Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Change will be made in FEIS.

Chapter: 4 Starting DEIS Page #: 11 Starting DEIS Line #: 13

Comment: The 'calibration accuracy of about 5 percent' is found at over 10 places in Chapter 4. It only needs to be once and the Thresholds for Significance should be moved to the beginning of section 4.4 - It only needs to be mentioned once or twice in the entire document. It really isn't an issue OR it doesn't affect the Results or even discussions about the relationship of the alternatives. Also, it is really hard to see that 'greater than 10 percent from NA' is 'potentially significant impact'! What would happen if we used 25% deviation from the NA? This could be an Issue!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The term 'calibration accuracy' is only found in Chapter 4 in the discussion of URGWOM data. Accuracy and thresholds for significance are discussed relative to the data used for analysis of each resource because it does affect the results of the analyses and should be considered by the decision makers. Because URGWOM output formed the basis for much of the effects analyses, some of the basic URGWOM error affects any analysis using the data. The determination of significant impacts varies for each resource. The percentage of difference from No Action should not necessarily be consistent for all resources. A 10% difference between alternatives for a specific measure may be significant for one resource but a 1% difference may be significant for another.

Chapter: 4 Starting DEIS Page #: 24 Starting DEIS Line #: 7

Comment: 'reservoir exchange rate' must be values of ‘net reservoir elevation range of change’ and it could be in Table 4-6 - What are the values? What is 'low' exchange; from 3 to 5?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Reservoir exchange rate is shown in Table 4-6 with units of acre-feet per year (AFY). The definition of 'reservoir exchange rate' will be added to the Glossary, Appendix C.

Chapter: 4 Starting DEIS Page #: 74 Starting DEIS Line #: 10

Comment: 'are prone to flooding at under certain' - doesn’t make sense; but it sure doesn’t agree with 'nor anticipated' on page 72.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Will delete the word 'at' in FEIS. The point on page 72 is that flooding was not directly caused by any of the changes in operations under the alternatives, but did result and was analyzed as part of the 40-year hydrologic sequence.

Chapter: 4 Starting DEIS Page #: 70 Starting DEIS Line #: 12

Comment: Add ‘Percentage’ at the beginning of the title of Table 4-22 or footnote 'Access'.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Table caption will be changed in FEIS.

Chapter: 4 Starting DEIS Page #: 70 Starting DEIS Line #: 14

Comment: The value of '52 percent' doesn’t appear in Table 4-23!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The text will be changed to reflect the table in the FEIS.

Chapter: 4 Starting DEIS Page #: 83 Starting DEIS Line #: 4

Comment: By the Way, it seems that N/A is better for use of Not analyzed than NA (which is used for No Action on pages of this chapter).

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: This change has been made.

Chapter: 4 Starting DEIS Page #: 71 Starting DEIS Line #: 5

Comment: The footnotes 1 and 2 need to be placed in the heading of the two columns somewhere!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: This change has been made.

Chapter: 5 Starting DEIS Page #: 4 Starting DEIS Line #:

Comment: There were NO line numbers in this Chapter 5. Second line of section 1.3.USFWS is used here, but only FWS is in Acronyms.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Acronym list will be corrected.

Chapter: 5 Starting DEIS Page #: 1 Starting DEIS Line #:

Comment: As indicated earlier; the sections should start with '5'.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: This change has been made.

Chapter: 4 Starting DEIS Page #: 87 Starting DEIS Line #: 4

Comment: Appendix R is not listed in the Table of Contents.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: This will be changed to Appendix P in the FEIS.

Chapter: 4 Starting DEIS Page #: 72 Starting DEIS Line #: 43

Comment: Use '40-year planning period', not 40-year modeling analysis.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: This change has been made.

Chapter: 4 Starting DEIS Page #: 86 Starting DEIS Line #:

Comment: It should show that the 'Weights' at the top of the columns are in %. In fact, if every item was converted to %, then this could be shown in the title of this table. Even 'Fair & Equitable' could be converted to %, if Rank 1 is 100%. The left column 'Weights' don't seem to agree with any of the column of ranks in Table 4-1; somehow they managed to change from a full number to a decimal number!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The "weights" come directly from the decision model and were derived by the JLAs, steering committees, and resource teams. The "ranks" assigned in table 4-1 were converted to weights as shown in Table 4-29. A rank of 1 with nine items to be considered is worth 9 times that of the bottom-ranking measure.

Chapter: 4 Starting DEIS Page #: 85 Starting DEIS Line #: 1

Comment: Figure 4-33 or the information in section 4.5.2 should refer to Figures 4-1 and 4-2 since it is the extension of such.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted.

Chapter: 4 Starting DEIS Page #: 70 Starting DEIS Line #: 6

Comment: The references listed in these sentences don't agree completely with the ones listed in the Notes of Table 4-22. Corps (2001c) doesn't appear in the table, but Kirkpatrick (2001) does?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Change will be made in FEIS.

Chapter: 4 Starting DEIS Page #: 73 Starting DEIS Line #: 37

Comment: Why does the subtitle of Value of Property need to be used; isn't this the only Impact Indicator for Flood Control on page 73?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: This will be deleted in the FEIS.

Chapter: 4 Starting DEIS Page #: 70 Starting DEIS Line #: 19

Comment: Add 'Reservoirs' behind there names. Take out '#' in the heading of the second column and use 'Number of days ... over the 40-year planning period' as adequately used in Table 4-24. The footnote numbers need to be raised and in a different font within this table that lies on two pages. Actually, 'Notes' for Table 4-23 are the numbers of footnotes 1, 2, or 3. I imagine that footnotes 2 and 3 could be combined in to one footnote.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Changes to caption and heading will be made in FEIS. Notes will not be combined as they are different.

Chapter: 4 Starting DEIS Page #: 74 Starting DEIS Line #: 21

Comment: Page 72 indicates that NO analysis is to be done! Just drop this bullet?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: This was part of the methods of analysis used to evaluate flood damages. Even if they weren't caused by proposed changes in water operations, they were analyzed.

Chapter: 4 Starting DEIS Page #: 74 Starting DEIS Line #: 33

Comment: Need to say, 'in the three sections of...'

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: No change made because the Sections are identified in the table that is introduced by this sentence.

Chapter: 4 Starting DEIS Page #: 75 Starting DEIS Line #: 1

Comment: It seems that 'Residual' and the three sections OR five reaches need to be mentioned in the title of Table 4-25.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Residual will be added to the caption in the FEIS.

Chapter: 4 Starting DEIS Page #: 74 Starting DEIS Line #: 2

Comment: Cochiti is not mentioned in Table 4-25. Need 'planning' after '40-year' in at least two places in the paragraph. Why not use the word 'residual' with flood damages in the paragraph?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Planning will be added to the 40-year period phrase. Residual is not always used in the discussion but the type of flood damages is defined previously.

Chapter: 4 Starting DEIS Page #: 58 Starting DEIS Line #: 35

Comment: Line 43 should be 'fifth of seven alternatives', not the sixth as stated?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The sentence is correct as presented. There are 7 alternatives and 6 action alternatives.

Chapter: 4 Starting DEIS Page #: 83 Starting DEIS Line #: 4

Comment: It would be best to move some of this to the Methods of Analysis (if the verbal ratings are to really be used) and to place in the Notes at the bottom of Table 4-28.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The information presented in this paragraph explains how to understand the table (4-28) that it introduces. These are qualitative ratings because impacts cannot be quantified.

Chapter: 4 Starting DEIS Page #: 77 Starting DEIS Line #: 14

Comment: It is amazing the Hydropower is part of Flood Control for EB and Caballo Reservoirs!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Hydropower is an affected resource that deserves analysis. It was not modified under the alternatives.

Chapter: 4 Starting DEIS Page #: 80 Starting DEIS Line #:

Comment: anyone that mentions EB Reservoir releases or Caballo Reservoir releases that are not associated with Flood Control.

Submitted by: Conrad Keys

Response to Comment: Effects on hydropower generation were evaluated, although no operations changes were proposed in the alternatives at this facility. It is recognized that there could be impacts to hydropower resulting from changes in operations upstream, so the results are presented.

Chapter: 4 Starting DEIS Page #: 81 Starting DEIS Line #: 21

Comment: Drop the EB columns.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted, no change made as hydropower was analyzed at Elephant Butte even though no operations changes were proposed in the alternatives.

Chapter: 4 Starting DEIS Page #: 82 Starting DEIS Line #: 12

Comment: According to Table 4-28; the impacts were considered in Aquatic-Riverine and Aquatic-Reservoir and these should be used in the material in this section.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The analysis of impacts related to environmental justice are always derived from the effects on other resources that are of potential importance to minority and low income populations.

Chapter: 4 Starting DEIS Page #: 84 Starting DEIS Line #: 24

Comment: It really seems that either this section should be located here; BUT not in section 2.2.7 or even section 2.5. However, the Process of Selecting the Preferred Alternative could be shown in Chapter II and Table 4-29 could remain here. Table 2-4; 'Comparison of Impacts under Each Alternative', which is what Chapter IV does should go at this location! I would presume that Figure 4-33 is really part of the

process of evaluation and it should go to Chapter II. Section 4.5.2 uses both and probably can be eliminated or parts moved to 4.5.1 or 2.5. Section 2.6 is probably already covered in 4.5.1 or 4.5.3.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: NEPA guidance from CEQ requires that a comparison of impacts under each alternative be presented in Chapter 2. This is typically presented following the detailed description of each alternative evaluated and is derived from the environmental consequences in Chapter 4.

Chapter: 4 Starting DEIS Page #: 67 Starting DEIS Line #: 26

Comment: It does seem that Appendix N should be mentioned somewhere in the Discussion of Results or in the Summary/Comparison of Alternatives!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The FEIS will reference Appendix N.

Chapter: 4 Starting DEIS Page #: 60 Starting DEIS Line #: 1

Comment: The bars in the figure must be color-coded, for they are impossible to read. The shades are all the same!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Change will be made in FEIS.

Chapter: 4 Starting DEIS Page #: 63 Starting DEIS Line #: 1

Comment: By the way, it is pretty hard to read the different shades of grey and/or black on this figure. I think that the same legend of bars should be used as in Figure 4-10 throughout this document. It might be possible to only use the color codes for the 4-5 different NA options?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Change will be made in FEIS. It will either be printed in color or the graph modified.

Chapter: 4 Starting DEIS Page #: 67 Starting DEIS Line #: 10

Comment: This concern doesn't include Reservoir Recreation, which is included in 4.4.5.3. The end of this bullet might best be 'recreational land use opportunities'.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Recreation is treated as a land use, but considered in more detail in 4.4.5.3.

Chapter: 4 Starting DEIS Page #: 67 Starting DEIS Line #: 11

Comment: There is only one conclusion!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Correct.

Chapter: 4 Starting DEIS Page #: 71 Starting DEIS Line #: 16

Comment: This line needs to add 'and I-1', since this alternative is almost the same as the results shown in Table 4-22. Also, this is on EB Reservoir as indicated on line 19 of this paragraph. 'Lake' is used again on line 15 and 17. Elephant Butte is used, I think it should be EB Reservoir?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: B-3 is not the same as I-1. The term Elephant Butte Lake is appropriate for the recreation discussion.

Chapter: 4 Starting DEIS Page #: 67 Starting DEIS Line #: 18

Comment: This should become the first bullet as indicated in Table 4-21. Whatever the order is to be; they need to be the same as in the table on the Impact Indicators or the Criteria.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted.

Chapter: 4 Starting DEIS Page #: 68 Starting DEIS Line #: 17

Comment: This table is only for the Rio Chama, Central, and San Acacia River Sections and that should be mentioned on the table somewhere. Furthermore, the Criteria should add 'to lands' after the first criteria, 'Use' behind 'Promotes Recreation', and 'Use' after agriculture. This wording would relate to the Impact Indicators mentioned on page 67.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Section names and row headings will be added to caption in FEIS.

Chapter: 4 Starting DEIS Page #: 67 Starting DEIS Line #: 15

Comment: The title for this paragraph is 'Impact Indicators' and 'overall criteria' is used for the description of the bullets. This is also confusion on line 20 below. Apparently, the 'Degree to which' things are done is criteria and the Impact Indicators are something else? The beginning sentence about Table 4-21 implies that the criteria is the same as Impact Indicators?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The term 'criteria' will be changed to 'indicators' in the FEIS.

Chapter: 4 Starting DEIS Page #: 68 Starting DEIS Line #: 20

Comment: This section should be titled, 'Reservoir- & River-Based Recreation' or vice-versa to best describe the material presented. See line 27 on page 69.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The types of recreation are described in the section. This is parallel construction to what is presented in Chapter 3.

Chapter: 4 Starting DEIS Page #: 12 Starting DEIS Line #:

Comment: At some point in the report (here or elsewhere), an explanation of 'waivers' would be beneficial to the reader. At the least, it could be included in the Glossary.

Submitted by: Darrell Eidson, US Army Corps of Engineers

Response to Comment: Will add waivers to the Glossary (Appendix C).

Chapter: 4 Starting DEIS Page #: 12 Starting DEIS Line #:

Comment: Page IV-11 provides a description of the graph legend for Fig. 4-7. A similar description for Fig. 4-8 would be helpful, particularly to explain the difference between the open vs. the filled 'boxes'.

Submitted by: Darrell Eidson, US Army Corps of Engineers

Response to Comment: The legend applies to both graphs, which are similar. Will add note to the legend referencing both Figures 4-7 and 4-8 and a filled box to the legend to explain.

Chapter: 4 Starting DEIS Page #: 20 Starting DEIS Line #: 7

Comment: This sentence talks about San Acacia gage data but seems to be discussing modeled (future) results for which gage data does not yet exist. Suggest rewording this, such as saying 'The projected San Acacia gage flows...'

Submitted by: Darrell Eidson, US Army Corps of Engineers

Response to Comment: This change has been made.

Chapter: 3 Starting DEIS Page #: 64 Starting DEIS Line #: 3

Comment: Suggest adding 'in/near' to the parenthetical location examples, since the subject is tributaries.

Submitted by: Darrell Eidson, US Army Corps of Engineers

Response to Comment: The sentence specifically references tributaries, so this should be clear. No change.

Chapter: 3 Starting DEIS Page #: 13 Starting DEIS Line #: 23

Comment: Suggest adding 'provide local base lever controls' to this dams bullet since, like irrigation diversion structures, they produce this effect.

Submitted by: Darrell Eidson, US Army Corps of Engineers

Response to Comment: This change has been made.

Chapter: 3 Starting DEIS Page #: 8 Starting DEIS Line #:

Comment: This graph is very difficult to make sense of, with its many variables. Suggest using colors or patterns to differentiate the variables in the legend. The grey shades are too similar to discern.

Submitted by: Darrell Eidson, US Army Corps of Engineers

Response to Comment: Figure 3-5 will be printed in color for the FEIS.

Chapter: 2 Starting DEIS Page #: 3 Starting DEIS Line #: 15

Comment: Suggest replacing 'estimated' with 'facilitated estimation of'. FLO-2D was used to obtain hydraulic parameters for sediment transport calculations (outside of the program).

Submitted by: Darrell Eidson, US Army Corps of Engineers

Response to Comment: Changed to "and helped to estimate sediment transport."

Chapter: 1 Starting DEIS Page #: 9 Starting DEIS Line #: 11

Comment: Suggest using the word 'replace' in lieu of 'relocate' for the railroad bridge. It will be a new bridge.

Submitted by: Darrell Eidson, US Army Corps of Engineers

Response to Comment: Change will be made in FEIS.

Chapter: 4 Starting DEIS Page #: 19 Starting DEIS Line #: 5

Comment: The aggradation values should be shown as annual by using 'feet/year' for the units.

Submitted by: Darrell Eidson, US Army Corps of Engineers

Response to Comment: This change has been made.

Chapter: 4 Starting DEIS Page #: 16 Starting DEIS Line #:

Comment: A section heading appears to be missing here. Is this a continuation of the 'Abiquiu Native Conservation Water Storage:' discussion?

Submitted by: Darrell Eidson, US Army Corps of Engineers

Response to Comment: Discussion is a continuation from Abiquiu Native Conservation Water Storage, but figures were inserted in between. Will try to keep sections together for FEIS.

Chapter: E Starting DEIS Page #: 23 Starting DEIS Line #:

Comment: The sample newspaper ad is missing.

Submitted by: Darrell Eidson, US Army Corps of Engineers

Response to Comment: Will add for FEIS.

Chapter: E **Starting DEIS Page #: 48** **Starting DEIS Line #:**

Comment: The 'CARDS DEVELOPED TO EXPLAIN ALTERNATIVES', listed on page E-27, are missing.

Submitted by: Darrell Eidson, US Army Corps of Engineers

Response to Comment: Will add for FEIS.

Chapter: H **Starting DEIS Page #: 93** **Starting DEIS Line #:**

Comment: Equation (1) on this page uses the variable 'dt', which is designated as 'Dt' just below. Should be 'dt' in both instances.

Submitted by: Darrell Eidson, US Army Corps of Engineers

Response to Comment: Change to "dt" in both instances.

Chapter: 2 **Starting DEIS Page #:** **Starting DEIS Line #:**

Comment: Alternative G-3 in Table 2-2 differs from G-3 in Table 2-1. Please Correct.

Submitted by: Kara Gillon, Defenders of Wildlife

Response to Comment: G-3 in Table 2-2 is shown as No Change from current operations because it is the No Action Alternative. In Table 2-1, the detailed operations are described. No change is made as these tables serve their intended purpose.

Chapter: 3 **Starting DEIS Page #:** **Starting DEIS Line #:**

Comment: The reference to Section 3.2.4.1 is incorrect; please change it to Section 4.4.2.3 (if that is the correct section).

Submitted by: Kara Gillon, Defenders of Wildlife

Response to Comment: This change has been made.

Chapter: 2 **Starting DEIS Page #: 2** **Starting DEIS Line #:**

Comment: Please correct the website for URGWOM documentation on page II-2.

Submitted by: Kara Gillon, Defenders of Wildlife

Response to Comment: The website URL for URGWOM is correct as listed.

Chapter: 1 **Starting DEIS Page #: 7** **Starting DEIS Line #:**

Comment: Please correct the citation in the third bullet on page I-7.

Submitted by: Kara Gillon, Defenders of Wildlife

Response to Comment: Will change to 2004 for FEIS.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: Several figures do not effectively support the document. Tables in the document are for the most part understandable. However, some of the figures are difficult to understand due to the sheer amount of data included in them or their unconventional style. This renders them ineffective in graphically depicting the data to readers of the DEIS. For example, Figure 4-17 on p. IV-31 is unconventional and contains too many lines to be comprehensible. The use of different colors is largely ineffective in improving their clarity. Another problematic example would be Figure 4-28 on p. IV-63. The graph is too small and there are too many lines to be able to easily and quickly discern the data being conveyed. On the other hand, certain figures convey their information very effectively, particularly when graphics were used, such as in Figures 3-9 and 3-10 on pp. III-23, 24.

Submitted by: Laura Kinsel-Baer

Response to Comment: Noted.

Chapter: 4 Starting DEIS Page #: 67 Starting DEIS Line #:

Comment: Remove Land Use section from resource analysis. Since agriculture, recreation, and flood control each have their own dedicated sections and the Land Use section (Section 4.4.5.2 of Chapter 4) is made up of issues of agriculture, recreation, and productive land use promotion and preservation, the Land Use section should be removed due to its redundancy and unimportance to the overall analysis.

Submitted by: Laura Kinsel-Baer

Response to Comment: Noted.

Chapter: 1 Starting DEIS Page #: Starting DEIS Line #:

Comment: Create an Appendix just for figures and tables. Having the figures and tables embedded in the text is useful but makes it difficult to find them later. An additional file that includes all figures and tables in order would have been useful.

Submitted by: Laura Kinsel-Baer

Response to Comment: The figures and tables out of context are not useful to the flow of the discussion or without the explanatory text. The Table of Contents identifies their location.

Chapter: N Starting DEIS Page #: Starting DEIS Line #:

Comment: Also, Appendix N doesn't have a references section.

Submitted by: Rhea Graham, Pueblo of Sandia

Response to Comment: Noted. This was fixed for the appendix on the DEIS website and will be added in the FEIS.

Chapter: P **Starting DEIS Page #: 35** **Starting DEIS Line #:**

Comment: There is listed a reference of Thomas, 2002, which isn't in the list of references for Appendix P, on page P-41, as per the Table of Contents. Is it possible to be provided a copy of that reference, or an electronic link to it, prior to our government-to-government meeting?

Submitted by: Rhea Graham, Pueblo of Sandia

Response to Comment: Provided to commenter and will be added to the FEIS.

Chapter: N **Starting DEIS Page #: 32** **Starting DEIS Line #: 7**

Comment: Describes WSR designation as covering 6 miles. The actual length of WSR designation is 30.4 miles.

Submitted by: Sam DesGeorges, Bureau of Land Management-Taos Field Office

Response to Comment: Change will be made in FEIS.

Chapter: 3 **Starting DEIS Page #:** **Starting DEIS Line #:**

Comment: Figure 3-5 is confusing and needs clarification.

Submitted by: Sam DesGeorges, Bureau of Land Management-Taos Field Office

Response to Comment: Noted - we will consider providing a color image to add clarity.

1.8 EIS and Scoping Process

Chapter: S **Starting DEIS Page #: 10** **Starting DEIS Line #: 3**

Comment: Page S-10, line 3, states that "release of water (below Elephant Butte Dam) for delivery to the downstream entities was not addressed in the Review and EIS," however, page S-5 line 14 states that the intent of the DEIS is to address: "The adoption of an integrated plan for water operations at existing Corps and Reclamation facilities in the Rio Grande above Fort Quitman, Texas." The DEIS needs to re-consider the overall planning area to indicate no changes below Elephant Butte and Caballo Dams, or correct the discrepancies as needed.

Submitted by: Carlos Pena, International Boundary and Water Commission, U.S. Section

Response to Comment: The FEIS will be revised to indicate that this EIS focused only on coordinated flood control operations and not water delivery below Elephant Butte and Caballo Dams. There were no significant impacts observed below Elephant Butte and Caballo Dams.

1.9 Environmental Justice

Chapter: 4 **Starting DEIS Page #: 84** **Starting DEIS Line #: 3**

Comment: 'high populations' - By what method of analysis?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: This is a general statement that does not relate to a specific method.

Chapter: 4 Starting DEIS Page #: 82 Starting DEIS Line #: 32

Comment: According to line 5 on page 83; there is some sort of 'conversion of verbal ratings', BUT nothing was mentioned about this in the Methods of Analysis! Also, what verbal ratings come from Whom or even Where?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Where resource team members could not quantify alternative performance, they were given the option to provide qualitative rankings. These qualitative rankings were entered through the decision support software and are converted to numerical equivalents for purposes of analysis.

Chapter: 4 Starting DEIS Page #: 82 Starting DEIS Line #: 28

Comment: This indicates 'potentially requiring mitigation'; BUT the is nothing about it on page 84!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The mitigations for the resources listed are provided in the chapter 4 sections discussing the resource: ex. Page IV-29, IV-43, IV-57, IV-60, and IV-63

Chapter: 4 Starting DEIS Page #: 84 Starting DEIS Line #: 11

Comment: 'No mitigation' doesn't seem appropriate - see line 29 on page 82 and some items in Table 4-28 that would need mitigation under B-3 (the 'Beneficial' alterative?)

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: There are no specific mitigation measures for possible environmental justice impacts - instead mitigation measures are proposed for specific resources affected.

Chapter: 4 Starting DEIS Page #: 84 Starting DEIS Line #: 1

Comment: Relation between effects on resources and environmental justice not clear. In lines 1-6 on p. IV-84, it is clear that the effects of the proposed actions on certain resources could disproportionately affect minority populations, and who those minority populations are in this region. However, it is never stated specifically what the environmental justice concerns are in this region. A description of what the concerns are and how they can be addressed should be included.

Submitted by: Laura Kinsel-Baer

Response to Comment: Noted.

1.10 Hydrology and Hydraulics

Chapter: 4 Starting DEIS Page #: 8 Starting DEIS Line #: 1

Comment: So why is this paragraph an issue? If it is, where does the information come from? I know that the reservoir storage was greater than 2 million AF for much more than 9 days in the past 40-year period. It might be true for only the 40-year planning period; but unlikely! In 1988 - both EB Dam and Caballo were completely full for over 60 days.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Deleted sentence listing 9 days over 40-year period due to insignificance and reworded the following sentence.

Chapter: 4 Starting DEIS Page #: 6 Starting DEIS Line #: 28

Comment: The sentence of Alternatives D-3, E-3, I-3, I-2 information does not come from either figure 4-3 or 4-4. There is nothing about 17 of 40 years in either figure. The items in figure 4-3 are annual maximum and median days. Nothing in figure 4-4 shows 7000 cfs and 8500 and 10000 cfs as provided for B-3 and E-3, respectively (In fact, this figure indicates that B-3, E-3, and I-3 are not shown at all!) The information on these lines came from something else; not figures 4-3 and 4-4 and it is very hard to SEE the 4.4.1.1 Issues related to these figures. Actually, B-3 has the most annual maximum days at channel capacity below Abiquiu Dam (whatever the issue is for such).

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Modified text (Ch. 4-IV, 30-34) to compare changes to the No-Action alternative and to refer the durations described in the text to the technical appendix.

Chapter: 4 Starting DEIS Page #: 11 Starting DEIS Line #: 19

Comment: Replace 'erosion' with 'energy'. This refers to the Bank Energy Index analysis, as described in Appendix H.

Submitted by: Darrell Eidson, US Army Corps of Engineers

Response to Comment: Sentence uses the term "erosion energy" and seems to be clear. No change made.

Chapter: 4 Starting DEIS Page #: 12 Starting DEIS Line #: 11

Comment: This sentence implies that Fig. 4-8 makes the rapid pool elevation decreases obvious, but this is not the case for Heron Reservoir, perhaps because of the scale. For example, alternative E-3 does not look much different from the No Action elevations, though it employs a waiver.

Submitted by: Darrell Eidson, US Army Corps of Engineers

Response to Comment: This sentence will be edited as the scale on Figure 4-8 does not allow the reader to discriminate these changes.

Chapter: 4 Starting DEIS Page #: 15 Starting DEIS Line #: 7

Comment: Are the assumptions made described any where? If so, a reference to where would be appropriate.

Submitted by: Darrell Eidson, US Army Corps of Engineers

Response to Comment: Assumptions made for the use of conservation storage by resource teams are discussed on page IV-30.

1.11 Land Use

Chapter: 4 Starting DEIS Page #: 67 Starting DEIS Line #: 6

Comment: These land use concerns were not addresses herein!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The issues cited are addressed by the impact indicators evaluating recreational uses, agricultural land uses, and damage to various types of property. Additional details were considered in the Agriculture, Land Use, and Recreation sections.

Chapter: 4 Starting DEIS Page #: 68 Starting DEIS Line #: 19

Comment: I don't believe that the Total Score in Table 4-21 couldn't be increased by land use methods currently used or by some adaptive management in these alternatives; but this is what this sentence implies!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Revised text.

Chapter: 4 Starting DEIS Page #: 67 Starting DEIS Line #: 38

Comment: Why is Abiquiu Lake used instead of Abiquiu Reservoir?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Changed text to be consistent with Abiquiu Reservoir.

Chapter: 4 Starting DEIS Page #: 68 Starting DEIS Line #: 14

Comment: Is 'best balance' imply that the Highest Total Score was achieved? OR is balance described by about equal scores among the Impact Indicators?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Revised text.

1.12 Other Issues

Chapter: 6 Starting DEIS Page #: 5 Starting DEIS Line #:

Comment: Section 6.2 adequately described the existing authorities But Outside Scope. It is apparent that someone should mention the Potential Use of the Over 800,000 AF of space above elevation 6220 feet in Abiquiu Reservoir that has been used under the Rio Grande Compact limitations in 1986-1988 and could possibly be used in conjunction with the EB and Caballo Flood Control Operations, if Mexico

agrees according to the U.S./Mexico Treaty of 1906 and 1944. In fact, I understand that one U.S. Congressman asked for such approval during the 1986 appropriation language for the Corps of Engineers (Corps 1987).

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Will be adding text regarding a 1987 Corps report per Energy and Water Appropriations bill requesting a study to look at storage above elevation 6220 feet above mean sea level to reduce flood impacts to the south.

1.13 Public Involvement

Chapter: 5 Starting DEIS Page #: Starting DEIS Line #:

Comment: With regard to my reading of the draft EIS, my comments are limited to the involvement of interested stakeholders/public involvement. In less populated areas i.e., locales within the Socorro Reach, agencies and entities need to be proactive in engaging citizens beyond the banks of the Rio Grande. Reaching out to interested stakeholders and the public in general needs to go at less 50 mile radius beyond the path of the river. The Rio Grande is a recreational, cultural, agricultural and life sustaining resource to these rural areas and efforts must be made beyond advertising public meetings in the Las Cruces, El Paso and ABQ papers to engage input from impacted areas. The Alamo Reservation lies about 50 miles west of Socorro and they have a vested interested in the Rio Grande along with non tribal parties who do not reside along its banks. The RM 114-113 project ignited public concern once it got underway and the comments stressed the lack of knowledge of the public meetings and dissemination of project information during its planning stages. Agencies need to welcome public inquiry, suggestions and comments to gain support in the use of tax dollars and public resources. People living in rural areas do so because they perceive the quality of life to be better than what they would experience in urban areas and makes one more concerned about changes that may occur. Collaboration means working teamwork...go above and beyond to recruit the whole team.

Submitted by: Bev Junger, US Bureau of Reclamation

Response to Comment: The Upper Rio Grande Basin Water Operations Review and EIS has involved a total of 28 public meetings throughout the basin, as well as newsletters, presentations and group meetings, meetings with pueblo technical staff and elected officials, inclusion of interested stakeholders in the Steering Committee, and a variety of other public outreach efforts.

Chapter: 1 Starting DEIS Page #: Starting DEIS Line #:

Comment: I would like to request a 30 day extension of the review period for the Upper Rio Grande Basin Water Operations DEIS. The BLM has a lot of interest in this document because of Wild and Scenic River status on the Rio Chama. Given the large size of the DEIS and supporting documents, we would prefer to have extra time to carefully review the alternatives and analysis of impacts.

Submitted by: Greg Gustina, Bureau of Land Management-Taos Field Office

Response to Comment: This request was honored and a 30-day extension was granted by Reclamation.

1.14 Purpose and Need

Chapter: 1 Starting DEIS Page #: 1 Starting DEIS Line #: 34

Comment: Two out of five purposes not fulfilled. In reviewing the DEIS, I continually came back to the purposes set out in Chapter 1 (p. 1-1, lines 34-43; p. 1-2, lines 1-4) to determine whether they were being fulfilled. In two cases, the document did not completely fulfill the purpose. That two of the five purposes are left unclearly supported by the documentation is alarming and must be corrected.

1. To identify flexibilities in operations. This was clearly achieved in the analysis. Each facility was assessed for its flexibility toward operative change and this information was used in the final Preferred Alternative selection.

2. To better understand how facilities can be operated more efficiently and effectively as an integrated system. The document did not adequately reflect the support of this purpose. There was very little discussion of how the various operations would actually be coordinated between agencies to run the system more efficiently.

3. To formulate a plan for the future that complies with the existing authorities and the law, The document very clearly stated how the plan would comply with existing operations and laws.

4. To improve decision-making processes through better interagency ommunication/coordination and facilitation of public input. This purpose was not supported by the document. No discussion of how agencies would improve communication and/or coordination was included, nor was there discussion of future facilitating of public input.

5. To support compliance of laws. Discussion of how the project would comply with NEP A and ESA, in addition to other laws, was included and clear.

Submitted by: Laura Kinsel-Baer

Response to Comment: The draft EIS identified alternatives that looked at a combination of flexibilities in facilities that had previously been operated individually, without regard for other upstream or downstream operations. The act of undertaking this comprehensive water operations review to look at how facilities could be managed in concert with one another meets the second purpose. The improved communication and coordination protocols used to coordinate facility operations is one outcome of this integrated systems review. The fourth purpose - to improve interagency communication and coordination was described in Appendix I - Attachment B. Annual water operations are coordinated among the JLAs, irrigation districts, and other agencies and stakeholders. Flood control is coordinated using a slightly different process, as explained in this appendix. Public scoping and outreach meetings were held throughout the review process.

1.15 Purpose and Need

Chapter: 1 Starting DEIS Page #: Starting DEIS Line #:

Comment: Section 1.2, Purpose and Need, does not include any discussion of ecosystem requirements and could be interpreted to prevent even minimal benefit to natural resources by the failure to include a complete definition of an "integrated system", It is the opinion of the Department, taking into consideration other management directives (e.g., ESA Collaborative Program), that this definition must include the ecological needs of the Rio Grande.

Submitted by: Lisa Kirkpatrick, NM Department of Game and Fish

Response to Comment: Section 1.2, Purpose #5 discusses supporting compliance for applicable laws and regulations including compliance with environmental obligations, including the National Environmental Policy Act, the Endangered Species Act, and other environmental laws and regulations.

Chapter: 1 Starting DEIS Page #: Starting DEIS Line #:

Comment: For example analysis of impacts of leaving even 50 cfs in the river past the Low Flow Conveyance Channel (LFCC) was eliminated because "it limits potential operational flexibility by essentially setting a minimum flow rate below San Acacia Diversion Dam, which is contrary to the goals of Water Operations Review".

Submitted by: Lisa Kirkpatrick, NM Department of Game and Fish

Response to Comment: As indicated on page II-16, a 250 cfs bypass was included for all alternatives - thus at least 250 cfs was flowing in the main river channel before diversion would occur to the LFCC.

Chapter: 1 Starting DEIS Page #: Starting DEIS Line #:

Comment: It is a basic requirement for an Environmental impact Statement ("EIS") to clearly state the purpose and need for the proposed action, as this purpose and need determines the range of alternatives, which in turn are the "heart" of the EIS. Here, the purpose and need statement identifies a number of laudable objectives, including meeting Rio Grande Compact obligations, but oddly, it does not clearly include the purpose for which the facilities and operations in question exist: to deliver water for irrigation and other purposes to water users in New Mexico, particularly the Santo Domingo Tribe.

Submitted by: Vilma Ruiz, Pueblo of Santo Domingo

Response to Comment: The purpose and need statement is described on page I-1 & I-2. The first need statement on page I-2 identifies the storage and delivery of water for agricultural, domestic, municipal, industrial, and environmental uses. This statement includes delivery of water for irrigation by Tribal and non-Tribal water users

1.16 Recreation

Chapter: 4 Starting DEIS Page #: 72 Starting DEIS Line #: 14

Comment: Mitigation measures are only employed on EB according to page 70!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The mitigation measures make no mention of Elephant Butte Reservoir.

Chapter: 4 Starting DEIS Page #: 69 Starting DEIS Line #: 27

Comment: One major question might be, was this already covered in recreation land use? The largest potential appears to be the same on alternatives as shown in that category. However, it does seem that this might not be true at Heron Reservoir!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: There is some overlap within the Land Use sections.

Chapter: 4 Starting DEIS Page #: 72 Starting DEIS Line #: 19

Comment: Whose AOP is mentioned here?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Inserted reference to the Corps' AOP.

Chapter: 4 Starting DEIS Page #: 70 Starting DEIS Line #: 5

Comment: This should not imply that 40 years is used, only the 40-year planning period. This definitely needs to be corrected in Table 4-22 and 4-23. It is done properly in Table 4-24.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Reference to the 40-year planning period will be inserted in the FEIS.

Chapter: 4 Starting DEIS Page #: 69 Starting DEIS Line #: 43

Comment: Can the section 2.2.1 on URGWOM model data be mentioned to show what method is actually used to evaluate the Impact Indicators?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: This section would not clarify the methods used. This can be found in the technical report, Appendix N.

Chapter: S Starting DEIS Page #: Starting DEIS Line #:

Comment: In Table S-2, recreation is assigned "substantial improvement" for Alternative B-3 and "no significant impact" for Alternative I-1. NMED questions whether these are appropriate ratings since the Alternative I-1 scored higher than B-3 in "supports recreational uses" in Table 2-3. Also, Alternative I-1 scored higher than B-3 with respect to "supports recreation - summer rafting" in Table 4-3.

Submitted by: Marcy Leavitt, NM Environment Department

Response to Comment: The tables mentioned are intended for different uses. The conclusions do not conflict, but the purpose and source of the information must be considered. The information in Table 2-3 was based on a preliminary assessment by the Water Operations Technical Team in order to screen the alternatives. The evaluations shown in Tables S-2 and 2-4 (same table) present a summary of the effects analysis completed using the detailed modeling and analysis described in Chapter 4 and Appendix N. Table 4-3 only shows the days of suitable flows for summer rafting from a water operations perspective, and does not consider the full analysis of recreational uses for each alternative. The days of summer rafting flows shown in Table 4-3 are very similar across all alternatives.

Chapter: N Starting DEIS Page #: 60 Starting DEIS Line #: 27

Comment: Predictability of flows has not been a hallmark of recent water years, though the BLM has been working with operators and users to improve communication.

Submitted by: Sam DesGeorges, Bureau of Land Management-Taos Field Office

Response to Comment: Noted.

Chapter: 1 Starting DEIS Page #: Starting DEIS Line #:

Comment: Yes I appreciate you getting back to me and the chance for input--but I have been down this road before and from my observation--it's all talk because the flows always come out with no concern for the environment or fisherman. The rafters obviously get the water they want at El Vado. Why is this different than any other past input from fisherman--input that has had no real effect on flow rates? By the way the fishing at Abiquiu was the best fishing in the state--besides the San Juan--20 years ago. High flows and silt since then have ended that fishery (although it is better this year then it has been) thanks

Submitted by: Taylor Streit

Response to Comment: Noted.

1.17 Riparian and Wetland Ecosystems

Chapter: 4 Starting DEIS Page #: 37 Starting DEIS Line #: 9

Comment: Not sure what this sentence is referring to; in fact, the remaining sentences could be changed to say what is next herein. Figure 4-20 might imply that all of the alternatives in the Central Reach have approximately the same number of days with less than 100 cfs flows = 35 days and these could be all augmented. In fact, within the San Acacia Reach all of the alternatives have over 105 days with less than 100 cfs flows and they could be augmented with releases of 150 cfs. It is apparent that I-1 and I-2 are really the only alternatives that could use 'low flow augmentation' in both reaches with the water stored in Abiquiu Reservoir.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Text will be changed to reflect the following: No Action alternative is unable to augment low flow days at all. All other alternatives are able to augment all low flow days in the Central Section that result from hydrologic variability. Only Alternative B-3, however, provides adequate storage to augment all low flow days in the San Acacia Section. I-1 and I-2 have the least capability for low flow augmentation due to limited storage of native water at Abiquiu Reservoir.

Chapter: 4 Starting DEIS Page #: 34 Starting DEIS Line #: 2

Comment: Furthermore, 'acres and duration of inundation' aren’t performance measures in Table 4-7.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Mean annual acre-days of flooding is the selected performance measure, which includes acres and duration of overbank flooding.

Chapter: 4 Starting DEIS Page #: 42 Starting DEIS Line #: 6

Comment: It seems that 'wetlands' has no difference on all of the alternatives. If the total differences, excluding Wetlands, is only 7-8%; why mention this information in the summary of impacts; particularly saying some are 'significant'?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Stakeholders concerned about wetlands values wish to see the results of our analysis of wetlands impacts to assure themselves that there are no adverse impacts.

Chapter: 4 Starting DEIS Page #: 42 Starting DEIS Line #: 4

Comment: The word 'significant' hasn't really been defined and this only applies to 'Fauna and Hydrologic Variability' on Figure 4-24. The other resources don't have much difference between the NA-0 Div and I-1.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: A discussion of significance and thresholds of significance appears on page 33, lines 6-9. Figure 4-24 shows that overall

-Wetlands resources do not show significant change;

-Riparian habitat measures show significant adverse impacts (>10% change) for 4 alternatives and significant beneficial impacts for 1 alternative (I-1);

-Natural Management areas show significant adverse effects with 5 alternatives;

-T&E species show significant adverse impacts with 3 alternatives;

-Faunal resources shows significant adverse impacts with 1 alternative and significant benefits with 2 alternatives;

-Hydrologic variability show significant beneficial impacts with all action alternatives. Both I-1 and I-2 exceed the No Action alternative for overall riparian performance.

Chapter: 4 Starting DEIS Page #: 41 Starting DEIS Line #: 2

Comment: There is only one description under this Note. Shouldn't 'benefits' be defined, what about the definition of 'Significant adverse impacts'?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: A discussion of significance and thresholds of significance appears on page 33, lines 6-9. A second note will be added to Table 4-9 to reiterate the threshold for significance.

Chapter: 4 Starting DEIS Page #: 44 Starting DEIS Line #: 5

Comment: The Major question is what alternatives can provide the bulleted mitigation measures? For example, 'Secure carryover storage' can't be done under the NA options at all? Just place the appropriate alternatives within a ( ) after each bullet.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Only the No Action would be unable to provide these measures, and mitigation is not required under No Action. Line 4 will be corrected to read '...beyond the March 2003 Biological Opinion if the top ranked alternative or any action alternative are implemented.'

Chapter: 4 Starting DEIS Page #: 33 Starting DEIS Line #: 19

Comment: It says 'test the potential effects of four sets of operational rules for the LFCC'. Apparently the Issue on page 31 had to do with Criteria for Four Sets of Operational Rules? What was the Issue?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The phrase 'four sets of operations rules' will be replaced with four different levels of diversion to the LFCC...' The variable most significant in its impacts to riparian resources in the San Acacia Section is the level of diversion to the LFCC. However, each alternative had separate results depending on the flow characteristics delivered to the diversion point for the LFCC. The potential for specific alternatives to increase or decrease specific riparian habitats or vegetation types based on diversions to the LFCC could not be fully evaluated without a matrix of 24 FLO-2D model runs for each alternative and each diversion level at the LFCC…

Chapter: 4 Starting DEIS Page #: 34 Starting DEIS Line #: 1

Comment: By the way, 'Peak Flow Augmentation Capability' isn't an indicator on page 32 - it is only 'Flow augmentation'. Apparently, the method of analysis for 'rank' can be obtained from the FLO-2D model of 'overbank inundation', not overbank flooding?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Flow augmentation was handled as average annual days available for low flow augmentation (Figure 4-20) land peak flow augmentation (Table 4-7) was an indicator for the riverine habitat assessment.

Chapter: 4 Starting DEIS Page #: 34 Starting DEIS Line #: 2

Comment: It seems that 'overbank flooding' in provided in Figure 4-18; it really is 'Wetted Floodplain (acres)' and/or Cochiti Peak Flow (cfs).

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: This chart describes the extent of overbank flooding (as wetted floodplain acres) relative to mean daily peak flow below Cochiti.

Chapter: 4 Starting DEIS Page #: 34 Starting DEIS Line #: 1

Comment: Under Rio Chama reach, there are two '3' rankings - this could either be two '2' rankings OR one of them is #2?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Alternative E-3 should be ranked #2. Change will be made.

Chapter: Starting DEIS Page #: 34 Starting DEIS Line #: 2

Comment: Does all of the inundation only take place in the 'spring' - it seems that the high flows could occur when New Mexico is delivering large amount of flow to reduce their debit in EB Reservoir?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: For the 40-years of simulation there were no summer flows that would cause overbanking. New Mexico does not deliver large amounts of water that can cause overbank flooding to reduce its debit. Spring flow is the only chance for spring runoff to happen and FLO-2D routed this hydrograph to estimate areas of over bank flooding. FLO-2D results included Fall releases-See Tables in Appendix J.

Chapter: 4 Starting DEIS Page #: 32 Starting DEIS Line #: 40

Comment: It might be apparent that the additional models were not used to evaluate the Impact Indicators on page 32 and there were some other indicators evaluated?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: All 8 riparian indicators were evaluated. Flow augmentation was handled as average annual days available for low flow augmentation (Table 4-20) and peak flow augmentation (Table 4-7). Groundwater models were examined as supplemental data for understanding wetland impacts in the San Acacia Section, but this type of data was not uniformly available for other river sections. No other indicators were used.

Chapter: 4 Starting DEIS Page #: 33 Starting DEIS Line #: 4

Comment: What is meant 'to evaluate the effects of [overbank] flooding ((or inundation)) greater than 0.5 foot'? The method can analyze the ‘effects of releases from Cochiti Reservoir’ even if it isn’t 'flooding'.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Greater detail on FLO 2D modeling is provided in Appendix J. Also see response to comment 917. The word 'flooding' on Line 4 will be replaced with 'inundation' for clarification.

Chapter: 4 Starting DEIS Page #: 33 Starting DEIS Line #: 15

Comment: What is the Indicator used with these statements? 'Best overall support' must have a combination of indicators? Are they the ones on lines 11-12 above?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Best overall support refers to performance of multiple indicators listed on page 32, lines 21-28. Line will be changed to include, '...based on riparian impact indicators...'

Chapter: 4 Starting DEIS Page #: 34 Starting DEIS Line #: 2

Comment: One might mention that the range of 'Mean Wetted Floodplain acreage could be from 5000 in alternative I-1 to less than 1500 acres in NA-2000cfs and D-3.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: This is already covered on p. 35, lines 3-8.

Chapter: 4 Starting DEIS Page #: 33 Starting DEIS Line #: 21

Comment: The sensitivity analyses (plural) were mentioned in the Method of Analysis (singular) earlier? BUT the next sentence says 'only limited data available allowing direct comparison'. It might be that 'Diversion to the LFCC has the greatest range of effects on acres inundated' is the biggest Issue to be evaluated for increase or decrease in riparian habitat?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The variable most significant in its impacts to riparian resources in the San Acacia Section is the level of diversion to the LFCC. However, each alternative had separate results depending on the flow characteristics delivered to the diversion point for the LFCC. The potential for specific alternatives to increase or decrease specific riparian habitats or vegetation types based on diversions to the LFCC could not be fully evaluated without a matrix of 24 FLO-2D model runs for each alternative and each diversion level at the LFCC.

Chapter: 4 Starting DEIS Page #: 33 Starting DEIS Line #: 35

Comment: This sentence could imply that 'higher channel capacities proposed' can be found in Table 4-7 since that is the table that covers the Central Section's data (mean annual maximum acres flooded between an average of one acre per day to two acres per day for B-3 and E-3?). Therefore, most of the data in Table 4-7, under the Central Section, doesn't show much variability between the alternatives (even though D-3 and I-3 has the highest frequency of Spring flooding, which are different alternatives than the ones mentioned above). Therefore, using a different indicator in the Central Section could provide a different result than what was mentioned in this paragraph.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Channel capacity below Cochiti Dam varies by alternative, from 7,000 cfs in the No Action, to 8,500 cfs in B-3, to 10,000 cfs in E-3, as described in Chapter 2. The analysis using the selected indicators shows that varying channel capacity has only a small effect on many measures of riparian health in the Central Section. Changing the indicator to 'find differences' would only further confuse the results.

Chapter: Starting DEIS Page #: 34 Starting DEIS Line #: 2

Comment: How are higher flows accommodated in D-3 and I-3, which are the lowest high flows and D-3 is in fact one of the lowest 'Mean acres inundated'.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Higher 75th percentile flows (flows greater than 2,000 cfs on Table 4-7) were observed under the alternatives permitting native conservation storage in Abiquiu. Text will be revised to provide reference to the 75th percentile flows.

Chapter: 4 Starting DEIS Page #: 33 Starting DEIS Line #: 37

Comment: Lines 37-39 talks about 'these alternatives, negative trends'; but the NA had the highest 'Days greater than 75th percentile flows' - could greater communication and adaptive management create better effects of the other indicators in this Reach?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Tables 4-7 and 4-8 show that many factors affecting riparian indicators would not change significantly in the Central Section regardless of the selected alternative operations. Perhaps a combination of greater communication and adaptive management, along with restoration efforts being undertaken in this section, will create better effects over time.

Chapter: 4 Starting DEIS Page #: 43 Starting DEIS Line #: 9

Comment: Reaches 10, 12, & 13 don't obtain wetted floodplain acres until after 5200 cfs release from Cochiti and the maximum in Reach 13 would be about 2800 cfs for a release of 7500 cfs from Cochiti. However, Reach 14 would be blessed with over 200 acres when a release of 3500 cfs occurs and about 8000 acres when a release of 7500 cfs occurs (they look like straight line equations?) The Major question is: what alternatives give these situations of best releases?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: It only takes a single high flow event to produce the maximum wetted floodplain acres in a given year, whereas plants and animals require a more complex hydrological pattern in time, space, and duration. This pattern can only be measured with several related indicators. Therefore, wetted floodplain acres was only used as a last resort when full FLO 2D data was not available for the San Acacia Section. The response to the last question, this depends on whether one Section only or for the entire study area is being considered. Alternatives I-1 and I-2 provided the best overall performance for riparian measures-as shown in Figure 4-24 and Table 2-4.

Chapter: 4 Starting DEIS Page #: 34 Starting DEIS Line #: 2

Comment: The Biological Opinion(s) - Is this one or two (must be more that the one in 2001 - see References? Can one provide a quotation about this diversion?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Parentheses will be removed to clarify plurality. The 2003 BO did not contemplate diversions to the LFCC, therefore no suitable quote can be included.

Chapter: 4 Starting DEIS Page #: 33 Starting DEIS Line #: 29

Comment: Likewise, it would be nice to provide the values of increase of the overbank (not used in table 4-7 at all) flooding, i.e., from 347 acre-days during the NA alternative (or the average of one acre-day/day) to the value of about 2900 acre-days (or 8 acre-days/day on average per year) during the I-1 alternative. This happens at the same time that the 'Acres of Overbank Flooding (acres)' is largest for NA, D-3, and I-3 in Table 4-4 but for the Riverine Habitat?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Acres of overbank flooding were calculated differently for riverine resources. In particular, this measure did not require a 0.5 foot threshold exceedence as was required in the riparian analysis. Therefore the results were slightly different. In addition, acres of inundation and days of inundation vary independently depending on the channel morphology, flow, and upstream storage. The riparian team elected to use mean annual acre-days of inundation at a minimum level of 0.5 feet and mean annual acres of inundation at a minimum level of 0.5 ft. depth.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: The predicted area of overbank flooding is significantly lower in both the Rio Chama and San Acacia sections (Table 4-4, and component of Table 4-11) for Alternative 8-3 as compared to Alternative 1-1, Overbank flooding is necessary to maintain the form, function, and processes of a healthy riverine environment and associated riparian area. The lower amount of overbank flooding will result in a reduction in habitat, as noted in Table 4-5. This reduction seems unacceptable given the endangered species issues in the Rio Grande. This reduction may also lead to new listings in the Rio Chama section.

Submitted by: Marcy Leavitt, NM Environment Department

Response to Comment: Noted.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: NMED is concerned with the predicted moderate decrease in riparian habitat associate with Alternative B3 in Tables S-2 and 4-8. Riparian health is a critical component of ecosystem health. Healthy riparian areas also provide recreational and aesthetic value. According to Tables 4-8 and 4-9, the Rio Chama could experience significant adverse impacts under the preferred alternative.

Submitted by: Marcy Leavitt, NM Environment Department

Response to Comment: Table 4-9 is incorrect and will be revised. Data provided in Tables 4-7 and 4-8 indicate that Alternative B-3 provides slightly better support for riparian vegetation types in the Rio Chama and Central Sections compared to No Action.

Chapter: 4 Starting DEIS Page #: 36 Starting DEIS Line #:

Comment: The impacts identified in Table 4-9 do not seem to correlate to changes in habitat shown in Table 4.8 and % inundation in Figure 4-19.

Submitted by: Sam DesGeorges, Bureau of Land Management-Taos Field Office

R**esponse to Comment:** True. Table 4-9 will be corrected.

Chapter: 4 Starting DEIS Page #: 43 Starting DEIS Line #:

Comment: TAFO supports mitigation if the chosen alternative reduces the riparian resources.

Submitted by: Sam DesGeorges, Bureau of Land Management-Taos Field Office

Response to Comment: Noted.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: The acreage noted for historical wetlands in the URGWOPs DEIS underestimates the expanse of groundwater or surface water wetlands currently existing in the San Acacia reach of the Rio Grande (see Tetra Tech, Inc. 2004) including two large wetlands on the Refuge. This error results in an underestimate of the negative impacts to this reach for all alternatives.

Submitted by: SW Region Director, US Fish and Wildlife Service

Response to Comment: The EIS used the wetland definitions and mapping provided by USACE as the best available information for the analysis. Additional new information may exist that could be used for design of additional environmental commitments when a specific action alternative is decided upon.

1.18 River Geomorphology

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: It seems that 4.4.1.5 Summary/Comparison by Alternative [for Hydrology and maybe Geomorphology] could be a very important section. However, Table 4-3 doesn't really show the "preference among alternatives", unless the lower the scores the better the alternative! The other sections in Chapter IV have this type of section with the Resource within the subtitle of the section.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The following clarification of sediment management performance measures will be added to the end of the issues section: 'The following value judgments were applied to sediment/erosion information provided for this DEIS: Aggradation was favored for the Central Section; Degradation was favored in the San Acacia Section 2. A stable bank energy index was desired for the Central and San Acacia Sections; a decreased bank energy index was desired for the Rio Chama Section.'

Chapter: 4 Starting DEIS Page #: 21 Starting DEIS Line #: 12

Comment: No where is this Geomorphologic Analysis section is the cited reference to an appendix of outside material that produced the working about the analysis! Words like historically (needs a cited reference) or slightly (needs the range of values) or level lowering of the pool elevations (which figure?). Apparently many of the bars in Figure 4-12 relate to the major footnote in that figure; BUT there is nothing in the Issues section that indicates what relates to this Percent Change in the figure. There is nothing in Table 4-2 on geomorphologic criteria - what degradation rate is acceptable? What isn't? It seems that a separate acceptance table is needed on page IV-18? In fact, the information at the top of page IV-19 implies that the results of Figure 4-12 may not be needed in this section (only need to reference the information in an appendix?).

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted. Reference to Appendix H. Bars in this Figure represent the NA and action alternatives and the text describes the percent change of each alternative. The note '(see appendix H for more detail on results)' will be added at the end of the paragraph. MEI 2002 will be added as a reference after historically and 'recent base level lowering' will be changed to 'drop'. The following clarification of sediment management performance measures will be added to the end of the issues section: 'The following value judgments were applied to sediment/erosion information provided for this DEIS:

1. Aggradation was favored for the Central Section; Degradation was favored in the San Acacia Section

2. A stable bank energy index was desired for the Central and San Acacia Sections; a decreased bank energy index was desired for the Rio Chama Section.'

Chapter: 4 Starting DEIS Page #: 22 Starting DEIS Line #: 25

Comment: This paragraph's information CAME From Somewhere? This probably would come from appendix H? Question - Is the bed elevation changes of 0.01 to 0.03 ft really the noise or uncertainty of the model runs for the alternatives? The range of flows during the 40-year planning period doesn't change anything from the NA?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted. Reference to Appendix H will be added, mainly it is an analysis of Fig 4-12. The note -- (see appendix H for more detail on results) -- will be added at the end of the paragraph. As noted in the paragraph, the changes above San Acacia are relatively insignificant over the 40-year simulation period. The predicted 0.01 to 0.03 feet values indicate a very slight aggradation trend, but these changes are likely within the error bands of the analysis.

Chapter: 4 Starting DEIS Page #: 16 Starting DEIS Line #: 4

Comment: Except for the BEI impacts, the Rio Chama geomorphic changes are not discussed in Appendix H. {Note: I believe more analysis was done, but it is not included in App. H.}

Submitted by: Darrell Eidson, US Army Corps of Engineers

Response to Comment: BEI impacts were the only geomorphic changes evaluated on the Rio Chama.

Chapter: 4 Starting DEIS Page #: 20 Starting DEIS Line #: 20

Comment: This statement that none of the changes exceeded 10% is in conflict with Figures H-1.9 (reaches 12a, 14c, 14c) and 4.10b ('19 Outside') and 4.11b (reaches 2 through 14b), all contained within Appendix H. Some clarification or refinement of the statement is needed. This would support the last sentence on the page (lines 36-38), as well.

Submitted by: Darrell Eidson, US Army Corps of Engineers

Response to Comment: The ten percent exceedance is identified as a minimum threshold for significant change due to uncertainties in data and modeling. Changes in the San Acacia Section reflect LFCC usage - as No Action allows for a range of diversions from - to 2,000 cfs, all alternatives would behave within this range. Figure H.1.9 reflects a comparison of alternative performance against No Action with only zero diversions to the LFCC.

1.19 Sedimentation

Chapter: 3 Starting DEIS Page #: 12 Starting DEIS Line #: 8

Comment: The statement 'Bank protection slows formation of in-channel habitat.' seems oddly out of place. It might be more appropriate within a discussion of habitat, rather than the sediment supply and transport section.

Submitted by: Darrell Eidson, US Army Corps of Engineers

Response to Comment: Noted.

Chapter: 4 Starting DEIS Page #: 21 Starting DEIS Line #: 1

Comment: Sediment issues should be further addressed. Since sediment management will slightly decrease under all alternatives (Table 4-3, p. IV-21), the consequences of increased sediment load should be further examined and discussed.

Submitted by: Laura Kinsel-Baer

Response to Comment: Noted. More geomorphic investigations will be needed before adopting action that will change sediment load. The following clarification of sediment management performance measures will be added to the end of the issues section: The following value judgments were applied to sediment/erosion information provided for this DEIS:

1. Aggradation was favored for the Central Section; Degradation was favored in the San Acacia Section

2. A stable bank energy index was desired for the Central and San Acacia Sections; a decreased bank energy index was desired for the Rio Chama Section.' Table 4.3 shows aggradation /degradation trends that are favorable or no change from No Action results for all alternatives in the Central Section and favorable results for all alternatives in the San Acacia section. No further discussion is required.

Chapter: 3 Starting DEIS Page #: Starting DEIS Line #:

Comment: Sediment deposition in the Rio Grande channel from approximately San Marcial downstream will continue for the duration of the 40-year life of this EIS. Sediment deposition in the LFCC below San Marcial will continue when the head gates at the San Acacia diversion dam are open. Neither the river nor the LFCC currently function in a manner desirable to any stakeholder. Continuing to divert water into the LFCC under the action alternatives will not address silt deposition n the LFCC or reduced functioning of the structure. Continuing to divert water into the LFCC under the action alternatives will not address the continuing siltation of the Rio Grande channel or the long-term proper functioning of the riverine, riparian, or floodplain systems of the Rio Grande. The Joint Lead Agencies will have no options left in the foreseeable future to address these problems using current infrastructure and operational functions, and will be forced to take a reach-wide approach that recognizes the importance of maintaining ecosystem integrity as the only viable way to manage river operations.

Submitted by: Lisa Kirkpatrick, NM Department of Game and Fish

Response to Comment: Noted. The LFCC would need to be reconstructed below San Marcial before diversions to the LFCC resume.

1.20 Threatened and Endangered Species

Chapter: 4 Starting DEIS Page #: 44 Starting DEIS Line #:

Comment: The following is a situation that some alternatives can ONLY be compared to one or more options of the NA alternative! First, the Issue concerning the RGSM indicates that the Rio Chama RG Section is considered, but WHY and then minimum habitat areas, etc that are less than 5% changes don't need to be mentioned in the General Conclusions, Impact Indicators (which doesn't mention the Rio Chama Section anyway), Method of Analysis, Discussion of Results of Analysis, etc.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The threshold of significance with regard to threatened and endangered species such as the Rio Grande Silvery Minnow was decreased to reflect enhanced sensitivity to changes.

Discriminating between impacts caused by varying levels of diversion to the LFCC required comparison of alternatives against the appropriate level of LFCC diversion under No Action such as the impacts analysis summarized in Tables 4-12, 4-13, and 4-14.

Chapter: 4 Starting DEIS Page #: 44 Starting DEIS Line #:

Comment: The final values, 'Percent RGSM Habitat at Model Sites' doesn't seem to be mentioned anywhere throughout these 13 pages, even in the Mitigation Measures section of the chapter. Assumption by Keyes - it seems appropriate that a similar condition would exist in the subsections for Southwestern Willow Flycatcher, Bald Engle, and NM Meadow Jumping Mouse; but the descriptions will not be looked at further due to time constraints.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Table 4-12 summarizes Minnow habitat at model sites in the San Acacia section -- where diversions to the LFCC under NA and Action alternatives have the greatest potential to affect the Minnow. Table 4-11 summarized changes relative to No Action for the other river sections. Similar analyses were performed for the southwestern willow flycatcher (Tables 4-13 and 4-14) and the NM meadow jumping mouse (Table 4-15). No impacts were identified for the bald eagle.

Chapter: 3 Starting DEIS Page #: 42 Starting DEIS Line #:

Comment: Is this New Mexico state listed species? I believe then that this should include Rio Grande cutthroat and chub.

Submitted by: Sam DesGeorges, Bureau of Land Management-Taos Field Office

Response to Comment: Neither Rio Grande cutthroat trout or Rio Grand chub are listed by New Mexico as endangered or threatened.

Chapter: 4 Starting DEIS Page #: 51 Starting DEIS Line #:

Comment: TAFO has identified river icing as a threat to Bald Eagle in the Rio Chama between EI Vado and Abiquiu if winter minimum flows are not maintained.

Submitted by: Sam DesGeorges, Bureau of Land Management-Taos Field Office

Response to Comment: Current conditions will not change in this reach. Icing would occur regardless of the alternative.

1.21 Tribal Consultation/Indian Trust Assets

Chapter: 2 Starting DEIS Page #: Starting DEIS Line #:

Comment: In addition to the obligation to consult, the federal agencies have a trust duty to the Tribe. Under this duty, adverse effects on tribal trust resources must be avoided or fully mitigated. The DEIS scarcely begins to identify potential adverse effects on the Tribe's trust resources, much less to meet the obligation of avoidance or mitigation.

Submitted by: Vilma Ruiz, Pueblo of Santo Domingo

Response to Comment: The JLAs fully recognize their trust duty to the Tribes. Federal Trust Responsibilities to Pueblos and Tribes are discussed in Section 1.7.3, and related federal laws and guidance are contained in Appendix G. The impact indicators are limited to those identified in discussions with the BIA and ID-NEPA team participants from various tribes. Impact indicators in the assessment of Indian Trust Assets included: preservation of unique and sensitive sites; minimizing impact to traditional cultural properties; and preserving acequias and other structures. Because this is a programmatic EIS, general mitigation measures were identified, including prevention or mitigation of overbank flooding in the San Acacia Section, the Rio Chama below Abiquiu Dam to the Rio Grande confluence, and below Isleta Diversion Dam in the Central Section.

Chapter: 2 **Starting DEIS Page #:** **Starting DEIS Line #:**

Comment: As part of the revision process, the joint lead agencies, particularly the federal agencies, should address these issues further in government-to-government consultation with the Tribe. Although the joint lead agencies did raise the URGWOPS DEIS at a meeting with the Tribe on other matters last fall, they did not provide the Tribe any specific information or understanding of how the proposed action might affect the Tribe's rust resources. While we do not question the agencies' good intent in raising the matter at that meeting, we must point out that it was not an effective government-to-government consultation effort since meaningful information about effects on trust resources was lacking.

Submitted by: Vilma Ruiz, Pueblo of Santo Domingo

Response to Comment: The JLAs responded directly to the Pueblo of Santo Domingo by letter dated April 28, 2006, regarding government-to-government consultation. The letter discusses the formal government-to-government consultation with the Pueblo in July 2005, and the Alternative Impact Workshop held for the natural resources staff of the Six Middle Rio Grande Pueblos in January 2006. The JLAs are available at the request of the Pueblo of Santo Domingo for further consultation.

Chapter: 2 **Starting DEIS Page #:** **Starting DEIS Line #:**

Comment: These inadequacies in the DEIS are of a nature that must be corrected in order to meet the requirements of the National Environmental Policy Act. The DEIS should be revised and recirculated for comment.

Submitted by: Vilma Ruiz, Pueblo of Santo Domingo

Response to Comment: The JLAs fully recognize their trust duty to the Tribes. Federal Trust Responsibilities to Pueblos and Tribes are discussed in Section 1.7.3, and related federal laws and guidance are contained in Appendix G. The impact indicators are limited to those identified in discussions with the BIA and ID-NEPA team participants from various tribes. Impact indicators in the assessment of Indian Trust Assets included: preservation of unique and sensitive sites; minimizing impact to traditional cultural properties; and preserving acequias and other structures. Because this is a programmatic EIS, general mitigation measures were identified, including prevention or mitigation of overbank flooding in the San Acacia Section, the Rio Chama below Abiquiu Dam to the Rio Grande confluence, and below Isleta Diversion Dam in the Central Section.

1.22 Water Delivery

Chapter: N **Starting DEIS Page #: 10** **Starting DEIS Line #:**

Comment: The Pueblo of Sandia is concerned that the DEIS doesn't sufficiently disclose in the discussion of assumptions and impacts in Appendix N, pages N-10 to N-13, that the curtailment of irrigation deliveries modeled for some of the dry years is based on total water supply availability, as calculated in the Upper Rio Grande Water Operations Model (URGWOM). This discussion should be clarified so that the reader understands the nature of the analysis being applied to the examination of alternatives under this DEIS, given the goal of avoiding quantification of water rights in the basin.

Submitted by: Lawrence Gutierrez, Pueblo of Sandia

Response to Comment: Noted. The text will be modified to explain the analysis.

Chapter: 3 Starting DEIS Page #: Starting DEIS Line #:

Comment: The DEIS does correctly state, at least once, in Section 3.5, that "water storage for prior and paramount lands is not subject to restrictions stated in the Rio Grande Compact." Yet, this statement alone may be incorrectly read to imply that water storage for other Tribal needs is subject to the Rio Grande Compact. The Rio Grande Compact is plainly not so limited in the exclusion of tribal rights from its limitations. As stated in Article XVI of the Compact: "Nothing in this compact shall be construed as affecting the obligations of the United States of America. . . To the Indian tribes, or as impairing the rights of the Indian tribes," Thus, storage for other tribal needs, such as prior and paramount domestic and stock uses and use for irrigation of newly reclaimed lands, is not subject to Compact restrictions.

Submitted by: Vilma Ruiz, Pueblo of Santo Domingo

Response to Comment: Noted. The JLA have revised the text on page III-48 to reflect the actual language of Article XVI of the Rio Grande Compact.

Chapter: N Starting DEIS Page #: Starting DEIS Line #:

Comment: The DEIS assumes full delivery of water to the Pueblos, but does not clearly explain how this assumption is captured in the analysis. The DEIS must be revised to explicitly state the assumptions that provide for full delivery of water to the Pueblos. This assertion that full Pueblo water delivery is assumed is contradicted by the DEIS' finding that shortages will occur to diversions that supply irrigators in the Middle Rio Grande Basin, and the No Action Alternative actually performs slightly better on this score than the action alternatives. See DEIS Appendix N, Section 1.3.1.

Submitted by: Vilma Ruiz, Pueblo of Santo Domingo

Response to Comment: The DEIS assumes that the storage and delivery of P&P waters is not changed. The description of El Vado operations is provided in the URGWOM model documentation. Delivery shortages that occur during the planning period are the result of a dry hydrology and impact all users.

1.23 Water Operations

Chapter: 4 Starting DEIS Page #: 18 Starting DEIS Line #: 10

Comment: It could be apparent that the total capacity or remaining capacity and the elevation differences throughout one year could very well affect the economy of the region and therefore are a Major Issue when dealing with flood operations of EB and Caballo reservoirs. They should be looked at in relation to each alternative, including the NA!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Elevation and capacity issues at EB and Caballo reservoirs also related to water supply deliveries from those reservoirs. Due to ongoing litigation, water supply issues were not addressed in this EIS and therefore elevation fluctuations were not realistically modeled.

Chapter: 4 Starting DEIS Page #: 12 Starting DEIS Line #: 25

Comment: This entire paragraph is very hard to follow from the information in Figure 4-8. In fact, the information in the paragraph really seems to be on Abiquiu rather that El Vado. Shouldn't an appendix be referenced somewhere in this paragraph? The elevation departures of 10 to 20 feet can't be found on the small scale portions of Figure 4-8.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The discussion is specific to El Vado. Unfortunately, there is no specific appendix dealing with these matters. The right-hand graph for El Vado Reservoir average monthly elevation shows the elevation departures ranging from 6875 to 6855 feet, msl.

Chapter: 4 Starting DEIS Page #: 12 Starting DEIS Line #: 33

Comment: The value of 180,000 AF is not shown in Figure 4-8, the max is about 140,000 AF. Apparently all of the storage values are for 'total' amounts. The 25,000 AF mentioned on Line 39 doesn't exist in Figure 4-8. However, some of the items may be the range of values in the bar graphs?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: While the maximum possible storage capacity was 180,000 AF, the median reservoir storage actually attained was less than 140,000 AF due to the limits in hydrology.

Chapter: 4 Starting DEIS Page #: 16 Starting DEIS Line #: 14

Comment: Why isn't the value of 8000 cfs mentioned as the peak flow? Why isn't figure 4-7 mentioned in the paragraph on the ABQ Gage?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted - will add reference to 8,000 cfs peak flows for Alternatives B-3 and E-3 and reference Figure 4-7.

Chapter: 4 Starting DEIS Page #: 12 Starting DEIS Line #: 11

Comment: The waivers aren't provided on the figures. It is very hard to see how the waivers affect the water transfers of 6000 to 7000 AF. The difference between the NA and B-3 is around 9800 AF; what does the waivers have to do with this amount?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Waivers affect the timing of water transfers by allowing more water to be stored in Heron Reservoir at the end of the calendar year rather than being released by December 31 to a downstream destination.

Chapter: 4 Starting DEIS Page #: 16 Starting DEIS Line #: 7

Comment: The results in 'Mainstem Rio Grande at Otowi' are very hard to see in Figure 4-8 (which wasn't cited as the reference in this section). Furthermore, 'flows' doesn't seem to be sufficient; they should be either 'peak flows' or 'median flows' or whatever best describes the occurrence so that people can check the suggested relationships in the figure.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Will add figure reference. Will cite monthly flows, peak flows, as needed in accordance with Figure 4-7.

Chapter: 4 Starting DEIS Page #: 9 Starting DEIS Line #: 1

Comment: Apparently the use of 'Threshold Criteria Evaluation by Alternative' is the Issue; but all of this paragraph and Table 4-2 is really the description of the Results associated with each alternative and should go in 4.4.1.4. The "threshold performance criteria for Compact deliveries - is the real issue and hasn't been described at all in 4.4.1.1. I believe that the only Compact performance criteria having to do with deliveries to EB Reservoir is a function of the flow to Cochiti Reservoir? If the Debit Status from NM gets to 400 KAF; then all flow must released toward EB Reservoir? If the EB Reservoir has less than 400 KAF of useable water; then the upstream states cannot hold native water in their reservoirs without agreement with the downstream states?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted. These conditions are simulated within URGWOM.

Chapter: 4 Starting DEIS Page #: 20 Starting DEIS Line #: 33

Comment: I would suggest that the changing elevation in both Abiquiu and EB reservoirs might need to have mitigating measures. The raising and lowering of the elevations should have some impact on the economy of the regions? I believe the potential of 'Research or Study Space' in Abiquiu Reservoir as suggested by the Texas Rio Grande Compact Commission and his U.S. Congressman in 1988 hasn't been discussed in this document; except in Chapter 6. I do know that the upper elevation of the flood storage space in 1988 exceeded anything mentioned in this chapter. Apparently, the protection of Rio Grande Project space during 1988 will not ever occur and that flood protection situation will never exist again!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Changes in elevation and storage for Abiquiu Reservoir require the purchase of additional easements, which is beyond the current authorities and is therefore mentioned in Chapter 6. Changes in elevation at Elephant Butte were not considered because water supply impacts were modeled in a general way. Page I-87 in Appendix I provides a description of the coordination process for upstream facilities to provide flood control below Elephant Butte and Caballo Reservoirs

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Chapter: 4 Starting DEIS Page #: 13 Starting DEIS Line #:

Comment: Most of the values of 'flow' on the right ordinate are Daily, not Monthly flows. Where are the Waiver months shown in any of the portions of the Figure?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: These values are aggregated monthly flows. Waiver months are not intended to be shown on this figure - this merely shows the range of monthly flows associated with each alternative.

Chapter: 4 Starting DEIS Page #: 18 Starting DEIS Line #: 7

Comment: It seems that the major change in monthly storage @ EB Reservoir versus the Issue of Credits should be explained at this location! The total storage versus minimum evaporation rates in the Basin should be one of the Major Issues to conserve water for all users?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Because water supply issues were not considered in this EIS, the use of elevation changes and evaporation at EB could not be properly evaluated or considered.

Chapter: 4 Starting DEIS Page #: 37 Starting DEIS Line #: 1

Comment: Table 4-8 needs to mention which diversion is associate with each Section (which should be called Reaches). For example, the San Acacia Reach values were determined in relation to the NA with Zero diversion).

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted - the Table will be revised to include the LFCC diversion evaluated against a No Action LFCC diversion of zero cfs.

Chapter: 4 Starting DEIS Page #: 72 Starting DEIS Line #: 28

Comment: 'no property damages sustained' - this doesn't seem appropriate since sections 4.4.5.2, 4.4.4.1, etc. all show some type of damages to property OR something! 'residual flood damages' - must be used in the tables and figures of this section. It doesn't appear in the Impact Indicators or under the Value of Property, etc.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The alternatives did consider tributary inflow and any damages associated from this inflow are estimated as described in Table 4-25.

Chapter: 4 Starting DEIS Page #: 74 Starting DEIS Line #: 28

Comment: This summary doesn't expand on the information provided in the Discussion of Results. I-1 in the Chama river section is very similar to the NA (Figure 4-29)! Residual damages during the 40-year planning period exceed the NA in E-3 and B-3 alternatives in the Central Section (Figures 4-30)

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: No Action and I-1 performance along the Rio Chama should be similar in that both have the same Heron Reservoir waiver dates and the same below Abiquiu channel capacities. Damages in the Central Section are related to changes in channel capacity below Cochiti. In this case B-3 and E-3 both increase capacity resulting in increased flooding and potential increased damages.

Chapter: 4 Starting DEIS Page #: 77 Starting DEIS Line #: 4

Comment: This sentence doesn't appear to be a true statement. Why couldn't some proposed mitigation be undertaken for E-3 and B-3 on Figure 4-30. If the anticipated damages are too unimportant, say so! What is the lower limit that protection can be done in any of the alternatives - the total dollars of damage in Table 4-15 is least in D-3 and I-3, not in B-3 or I-2 or I-1 (the latter two were compared to NA?).

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The comparison statements for all alternatives were relative to No Action.

Chapter: 4 Starting DEIS Page #: 77 Starting DEIS Line #: 7

Comment: Do these Issues come from one of the appendices OR from some reference? Apparently 'Changes in operation' is include in Flood Control, which is the only thing to be evaluated in this portion of the Rio Grande Project under this DEIS?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The issue statement simply identifies that hydropower is produced by various facilities and that changes in operation affect power generation. For Elephant Butte, changes in hydropower production as affected by alternatives were evaluated in a relative manner, assuming the Rio Grande Project operations would be the same under all alternatives analyzed.

Chapter: 4 Starting DEIS Page #: 78 Starting DEIS Line #: 17

Comment: Probably should not be included at all, it is part of the Operation of EB Reservoir.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Hydropower is an affected resource that deserves analysis. It was not modified under the alternatives.

Chapter: 4 Starting DEIS Page #: 79 Starting DEIS Line #: 12

Comment: Should not be included except in Chapter 6 or VI, whichever is to be used.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted.

Chapter: 4 Starting DEIS Page #: 8 Starting DEIS Line #: 15

Comment: This paragraph could be a Major Issue; but "maximizing Compact deliveries to the Texas entities, which includes 57% of those deliveries being in NM, might not be what is best? Having Compact Credit water in EB Dam could mean much more evaporation that NM looses! It is interesting that the NA alternative isn't considered to be an alternative in this paragraph and Table 4-2 implies that the NA alternative has the least amount of Median NM Compact Credit, which could be the best way to reduce evaporation in EB Reservoir? Figure 4-6 should not be 'Deviation from the NA', it should show the Median NM Compact Credit Status of all the alternatives during each of the 40-year planning period. The Issue is 'saving water versus NM Compact Credit status' - the alternative that does this might have the highest ranking? Apparently I-1 provides less 'Deviation from NA' than does I-2 and they both are

much less than the other alternatives - So What? However, it does seem that some of these sentences could be useful in the EB flows that appear on page IV-18?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The compact delivery criterion looked at the accumulation of credits/debits and total water delivered. It did not examine the fate of the water beyond reaching the delivery point at Elephant Butte nor did it suggest that storage should occur at Elephant Butte Reservoir. The decision for how to demonstrate Compact compliance was provided by the New Mexico Interstate Stream Commission.

Chapter: 4 Starting DEIS Page #: 8 Starting DEIS Line #: 22

Comment: First sentence about 'due to lesser capacities of the LFCC and higher delivery losses incurred in the San Acacia section' doesn't seem to come from either Figure 4-6 or Table 4-2 - What is the source and can it be cited at this location? NONE of the other sentences in this paragraph have cited materials; BUT some number of years came from some source and they weren't the figures or table of this sub-section. However, it does seem that the footnotes of Table 4-2 do seem to be important; BUT isn't Waivers the Real Issue?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: The lesser capacities of the LFCC are contained in the description of alternatives discussed in Chapter 2 and summarized in Figure 4-2. The delivery losses are part of the reason for New Mexico credit/debit status as depicted on Figure 4-6. Waivers did not significantly impact New Mexico compact credit/debit status - instead it was the combination of ability to store water in Abiquiu Reservoir and the efficient conveyance of that water to Elephant Butte Reservoir at the higher LFCC capacities.

Chapter: 2 Starting DEIS Page #: Starting DEIS Line #:

Comment: For a variety of reasons, the operations of key facilities, that affect overall river management, were omitted from the URGWOM model. Somehow, these need to be factored in, so that the model provides the most comprehensive tool possible for achieving integrated and adaptive management for the Rio Grande.

Submitted by: Deb Hibbard

Response to Comment: The operation of key facilities was not 'omitted' - all facilities were considered functional in accordance with current operating protocols and facilities with flexibilities were modified according to the changes specified by each alternative. For example, even though no flexibilities were identified due to litigation, operations of El Vado Dam were considered to occur under current operating protocols. Impacts of alternatives on waters passing through El Vado were evaluated in our analysis. The URGWOM models does provided an integrated look at operation of facilities in this basin. It is not clear what 'key facilities' were omitted from the URGWOM model.

Chapter: 2 Starting DEIS Page #: Starting DEIS Line #:

Comment: While I am respectful of acequia communities and traditional farming practices, there appears to be an inherent contradiction between requests to honor and preserve cultural assets (like historic head-gates) and the desire for reducing higher seasonal flows (contrary to historic conditions) to

suit human convenience. Overall, we have grown too accustomed to managing the river to meet human uses and constructs, instead of to assure hydrological and ecological function.

Submitted by: Deb Hibbard

Response to Comment: Noted.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: I am opposed to the reduction of channel capacity for the Chama River Valley, from 1800 cfs to 1500cfs. While the intention of the URGWOM model is to provide for maximum flexibilities, the reduction of channel capacity represents an unnecessary constraint that could have detrimental effects on river dynamic and ecological health. Further, without municipal zoning regulations, such a reduction in channel capacity would allow for additional development in the flood plain, a further constraint to river operations.

Submitted by: Deb Hibbard

Response to Comment: Noted.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: In general, I agree with the preferred alternative with the exception of the recommended change in the channel capacity below Abiquiu Dam to 1,500 cfs. I do not agree with reducing the Corps' defined channel capacity below the current 1,800 cfs. The flood control operations at Abiquiu Dam are the choke point for water operations in the Rio Grande middle valley. Any reduction in the defined channel capacity further reduces the opportunity to pass higher safe flows below Cochiti. Higher safe flows through the middle valley are extremely important to restore more of the natural hydrogragh which will enhance the Rio Grande's riparian plant and animal communities. I was the Corps' Chief of Reservoir Control for many years and have personnally observed, many times, the Rio Chama below Abiquiu when the release was 1,800 cfs and did not see sufficient impacts that would support a reduction in operating criteria during flood operations. There is wear on the diversion structures at 1,800 cfs, but that is the nature of rock diversions. Reducing the Abiquiu channel capacity is a bad idea and a step in the wrong direction for increasing operational flexibility for the system operation.

Submitted by: Dick Kreiner

Response to Comment: Noted.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: In reviewing the Draft EIS two goals are mentioned which the RCAA wholeheartedly supports. The Draft EIS suggests that lowering the maximum allowable flows in the Rio Chama below Abiquiu Dam from 1800 cfs to 1500 cfs would be desirable because it would protect Rio Chama acequia headgates and diversion structures. The RCAA can certainly attest to the damages their acequias suffer when Rio Chama flows approach 1800 cfs. Furthermore lowering the maximum flow rate to 1500 cfs also assists with greater storage of native Rio Chama (Rio Grande) water at Abiquiu Reservoir. This is actually a second goal discussed in the Draft EIS.

Submitted by: Fred Waltz, Rio Chama Acequia Association

Response to Comment: Noted.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: As mentioned above the RCAA acequias have struggled to survive periodic droughts. The storage of some of their existing water rights at Abiquiu Reservoir is a logical proactive step for the acequias to take. As discussed in the Draft ElS the storage of native Rio Chama (Rio Grande) water at Abiquiu Reservoir can operate as a wet water bank for acequias storage. This would result in a greater utilization of Abiquiu Reservoir and Dam and provide direct benefits to the Rio Chama Valley communities which benefits from the San Juan-Chama Project and existing Rio Chama reservoirs have been lacking.

Submitted by: Fred Waltz, Rio Chama Acequia Association

Response to Comment: Consideration of water rights is beyond the scope of this draft EIS.

Chapter: 1 Starting DEIS Page #: 7 Starting DEIS Line #:

Comment: Take, for example, EI Vado Dam and Reservoir. Although the Draft EIS does not identify alternatives to or flexibilities in its operation, its current operation is part of the baseline and part of the No Action and requires inclusion in the Draft EIS. This is made even more true as the Draft EIS asserts there is a "lack of flexibility in operations" at El Vado, see 1-7, without providing any background on current operations or justifying their lack flexibility the public is unable to offer informed comments.

Submitted by: Kara Gillon, Defenders of Wildlife

Response to Comment: The current operation of El Vado Dam and Reservoir is identified in URGWOM model documentation. No flexibilities were considered due to the quiet title litigation that was ongoing during the preparation of this review and EIS.

Chapter: 4 Starting DEIS Page #: 15 Starting DEIS Line #: 7

Comment: Use of a common set of assumptions necessary. On lines 7-8, p. IV -15, it is stated that each resource team worked with different assumptions on the storage level and release of native water in the Abiquiu Reservoir. This works against the collective evaluation and just costs more time in the end when trying to compare conclusions made by each team. These should have been standardized prior to the evaluations.

Submitted by: Laura Kinsel-Baer

Response to Comment: The different assumptions were realistic constraints on availability of waters for environmental purposes. The aquatic team assumed that one half of the stored water was available for aquatic habitat needs. Riparian habitat needs are typically addressed in part by aquatic habitat flows, but an additional, lesser amount was assumed available for solely riparian purposes. Remaining water was assumed to be required by the NMISC for Compact deliveries.

Chapter: 2 Starting DEIS Page #: Starting DEIS Line #:

Comment: More explicit discussion of Heron Reservoir waivers needed. There is some discussion regarding the flexibility provided by waiver application date for water delivery from the Heron Reservoir in Section 2.4.3 of Chapter 2 and Section 4.4.1.4 of Chapter 4. From reviewing the document, it is my

understanding that if waivers are not allowed, or the waiver date remains at April 30, then water levels are high and subsequently drop sharply once delivery occurs, disturbing the overall flow of the river and species that depend on a steady flow. If the waiver date plays such an important role in flow levels, a more detailed discussion of this aspect is needed. For example, how often are waivers sought? Are they used frequently or infrequently as an aid in controlling flow?

Submitted by: Laura Kinsel-Baer

Response to Comment: Waivers are not used to control flow - they are merely an extension of allowed storage granted when requested by a contractor and when that request is also found to be advantageous to the federal government.

Chapter: 3 Starting DEIS Page #: Starting DEIS Line #:

Comment: Larger issue: LFCC use? On a larger note, the analysis seems to be more focused on a comparison between using the LFCC or not, and if so, at what capacity. This is in conflict with the presumed intention of this project, which is to integrate agency activities for more efficiency and effectiveness. Perhaps the process of creating the plan reached the intended interagency integration, but the Alternatives set out do not strongly reflect the question of agency integration versus no integration, but rather whether and how much to reinstate the LFCC.

Submitted by: Laura Kinsel-Baer

Response to Comment: The integration of river operations upstream culminates in the ability to move water downstream in satisfying compact and treaty requirements while avoiding undesirable resource impacts. The San Acacia Section and the LFCC are the section of the river in which conflicting demands are clearly observed. Storing water upstream merely to later spread that water out downstream and let it evaporate decreases the JLA's ability to meet its needs. This is the reason why LFCC use is of such concern.

Chapter: 3 Starting DEIS Page #: Starting DEIS Line #:

Comment: Benefits of reinstating LFCC unclear. Nowhere in the document are the reasons for, advantages, or disadvantages to resuming operation of the Low-Flow Conveyance Channel discussed. It is clear that the No Action Alternative assumes continued inoperation of the LFCC and the various Alternatives would use it to varying degrees, but it is not clear why.

Submitted by: Laura Kinsel-Baer

Response to Comment: The historical LFCC benefits were identified on page II-11. Alternatives I-1, I-2, I-3, and No Action address varying ranges of diversion to the LFCC in order to identify varying degrees of resource impacts from this diversion in the San Acacia Section.

Chapter: 3 Starting DEIS Page #: Starting DEIS Line #:

Comment: Removing the current flows in the existing river channel would hasten the conversion of the existing suitable habitat for Southwest willow flycatcher to unsuitable conditions. Solutions should include development of early successional stages of riparian vegetation prior to removing the current flows from the existing river channel in order to meet the needs of the Southwest willow flycatcher.

Submitted by: Lisa Kirkpatrick, NM Department of Game and Fish

Response to Comment: It is assumed that this comment refers to LFCC diversions from the river channel that occur in the San Acacia Section. While all alternatives include provisions for diversion to the LFCC, the LFCC is not currently operational and active diversion to the LFCC is not contemplated in the near future. Should active diversions to the LFCC be considered in the future, the appropriate NEPA and ESA documents would be prepared considering appropriate actions to limit impacts to the southwest willow flycatcher.

Chapter: 3 Starting DEIS Page #: Starting DEIS Line #:

Comment: Potential alternative approaches to operation of the LFCC include realignment of the river channel and LFCC.

Submitted by: Lisa Kirkpatrick, NM Department of Game and Fish

Response to Comment: Realignment is not an operational change, but a change to the physical structure of the conveyance. This DEIS considered changes in the ranges of operation that could be used to analyze impacts of varying levels of diversion.

Chapter: 3 Starting DEIS Page #: Starting DEIS Line #:

Comment: The current operations of the LFCC provide a water supply, drain, and groundwater management system for the Bosque del Apache NWR. The needs of Bosque del Apache NWR can be met using the LFCC while developing innovative long-term solutions to sediment deposition in the river downstream of Bosque del Apache NWR.

Submitted by: Lisa Kirkpatrick, NM Department of Game and Fish

Response to Comment: Noted.

Chapter: 3 Starting DEIS Page #: Starting DEIS Line #:

Comment: The analysis assumes re-activation and operation of the LFCC, which is very unlikely because it ignores any realistic solution to the ongoing cumulative deposition of sediment in the river from Bosque del Apache National Wildlife Refuge (NWR) downstream. It is realistic to expect the Bureau of Reclamation (BOR) to implement a project on the LFCC to address infrastructure and operational functions in the next 40 years.

Submitted by: Lisa Kirkpatrick, NM Department of Game and Fish

Response to Comment: The DEIS considered a full range of diversions to the LFCC including zero diversions under all alternatives. The inclusion of operating ranges was used precisely because it was unclear whether reactivation and operation of the LFCC was likely. Thus, all alternatives could accommodate the current condition of zero diversions to the LFCC.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: It is NMED's understanding that the desire to narrow the channel through the Rio Chama reach is also being driven by homeowner and pueblo concerns regarding saturation of property and cultural sites. NMED believes some middle ground should be explored with respect to these needs and the ecosystem need for periodic overbank flooding. For exampling, the addition of a seasonal overbank component with limited saturation to the preferred alternative may solve the problem.

Submitted by: Marcy Leavitt, NM Environment Department

Response to Comment: Noted.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: TAFO's main concern is minimum flow requirements to meet our ORV management obligations in the designated WSR sections on the Rio Chama. Changes to waiver date can allow slower releases of water through the winter to maintain minimum instream flows necessary to maintain aquatic and riparian resources. Changes in native water storage in Abiquiu Reservoir could allow TAFO to work with water users to supply ORV flows without entities losing water. However, based on the DEIS Technical Team Reports (volume 2) it is not clear that the proposed changes will result in positive) negative or neutral impacts. Since no analysis is present, no determination of effect can be made.

Submitted by: Sam DesGeorges, Bureau of Land Management-Taos Field Office

Response to Comment: Noted.

Chapter: S Starting DEIS Page #: Starting DEIS Line #:

Comment: I agree with the preferred alternative B-3, but believe the upper release from Abiquiu Reservoir should remain at 1800cfs. This should be the case to allow prudent release of flood waters, insure Compact compliance for New Mexico, prevent water from stacking up in Abiquiu Reservoir and prevent releases of unnatural flows to the river in the fall, potentially negatively impacting the Rio Grande Silvery Minnow.

Submitted by: Steve Vandiver, Rio Grande Water Conservation District

Response to Comment: Noted.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: Similarly, the DEIS asserts that historic operation of El Vado was modeled in evaluating the alternatives, but the assumptions about historical operations are not clearly stated in layperson terms. Moreover, it cannot be assumed that repetition of historical operations would meet storage and delivery obligations to the Middle Rio Grande Pueblos. Other aspects of the impacts, and benefits, analysis are also inadequate and overlook effects on the Tribe. For instance, additional storage of water in Abiqui Reservoir is assumed to be a benefit without any consideration of who benefits, and who may suffer. The DEIS must evaluate the effects of additional storage on tribal water rights. The questions that must be addressed include whether new storage for the minnow or other non-tribal purposes and beneficiaries would occur at the expense of storage for, and/or slow in the river for water deliveries to, the Tribe.

Submitted by: Vilma Ruiz, Pueblo of Santo Domingo

Response to Comment: The URGWOM model documentation considers current protocols for El Vado Reservoir. It was assumed that, when New Mexico has accumulated Compact credits and is able to meet its Compact delivery requirements, flood waters originally stored in Abiquiu Reservoir under Public Law ___ would be stored in a conservation pool at Abiquiu Reservoir. Under current operations, flood water storage in Abiquiu Reservoir is not conducted when it would adversely impact federal storage obligations on behalf of the Middle Rio Grande Pueblos.

Chapter: 2 Starting DEIS Page #: Starting DEIS Line #:

Comment: The omission of EI Vado Operations from the scope of the analysis exacerbates the DEIS ' failure to consider the purposes of the applicable authorizing legislation for the facilities and associated Tribal rights and federal obligations to the tribes. In the case of El Vado, it is questionable whether the stated reason - ongoing litigation - is sound. The operation of other facilities within the system has also been the subject of recent litigation, but they are not excluded from the scope.

Submitted by: Vilma Ruiz, Pueblo of Santo Domingo

Response to Comment: El Vado operations were not omitted from the DEIS. El Vado operations were modeled in the URGWOM model and impacts to El Vado were considered in the evaluation of alternatives. El Vado, Elephant Butte, and Caballo Dams were all excluded from the identification of operational changes due to ongoing litigation. However, the URGWOM model included these facilities in consideration of impacts.

Chapter: 2 Starting DEIS Page #: Starting DEIS Line #:

Comment: Oddly, the DEIS both claims additional storage in Abiquiu as a benefit and asserts that consideration of the purpose for which the water would be stored, such as "Native American storage," is "outside the scope of the DEIS" (DEIS at page VI-2). Both things cannot be true. That is, additional storage cannot be assumed to be beneficial without an examination of the purpose, use and effects of the additional storage. For the same reason, the DEIS ' assertion that "the. Preferred alternative was selected on the basis of combined positive benefits it would afford for the affected resources in the basin" (DEIS at page ll-1) is highly questionable.

Submitted by: Vilma Ruiz, Pueblo of Santo Domingo

Response to Comment: The DEIS considers changes in storing and conveying water. The DEIS makes assumptions about the use of additional storage to various resources, but does not ascribe these uses to individual entities. It does not consider the issue of ownership of stored water and the management of individual water rights.

1.24 Water Quality

Chapter: 4 Starting DEIS Page #: 59 Starting DEIS Line #: 1

Comment: A Note should occur at the bottom of the table to indicate how 'Total Weighted Score' is calculated.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: A statement has been added.

Chapter: 4 Starting DEIS Page #: 58 Starting DEIS Line #: 13

Comment: The only 'significant impact' (What is significant the largest deviation in Total Weighted Score is 8% change?)

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted. Text changed to be more reflective of the magnitude of the difference.

Chapter: 4 Starting DEIS Page #: 60 Starting DEIS Line #: 19

Comment: 'provide more oxygenated waters to the reservoir' - this could also happen with the NA options? Which alternatives can 'easily provide the most opportunity for upstream native conservative storage'?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted. The alternatives that can easily provide the most opportunity for conservation storage are noted in previous sections of chapter 4.

Chapter: 4 Starting DEIS Page #: 60 Starting DEIS Line #: 6

Comment: The information in the figure as mentioned has the same material that is in Table 4-17 (all less than the 100% of NA). The actual DO values might be more interesting? This would also be helpful in speaking to the Mitigation Measures needed to change a DO from 6 down to 3.

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted. The figure provides a graphic of the magnitude of the differences in water quality conditions across alternatives. The actual WQ values are located in the water quality technical report, Appendix M.

Chapter: 4 Starting DEIS Page #: 58 Starting DEIS Line #: 29

Comment: 'percentage of days where WQ was expected' - used in Table 4-17 and it was called the 'Total Weighted Score' = to something. How it was calculated should be part of the Method of Analysis of this section?

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Text will be been modified to be reflective of the process used to assess water quality impacts.

Chapter: 4 Starting DEIS Page #: 58 Starting DEIS Line #: 35

Comment: '100% indicates the best condition' - this is Percentage of Days where WQ is in Compliance with the appropriate governmental standards for the River Section, which varies significantly along the Rio Grande from Cochiti Reservoir to San Acacia! 'Dissolved oxygen is relatively unchanged'; except the NA is still 100% and the other alternatives is equal to or less than 77% (What is the reason for this?)!

Submitted by: Conrad Keyes, Corps Contract No. DACA47-02-P-0026

Response to Comment: Noted. Text will be modified to reflect that dissolved oxygen was relatively unchanged except in the reach below Elephant Butte Reservoir.

Chapter: 3 Starting DEIS Page #: Starting DEIS Line #:

Comment: As you know, the Pueblo of Sandia has water quality standards along the Rio Grande within its Reservation boundary. We understand that the water quality analysis provided in the DEIS was reviewed and deemed insufficient by the joint lead agencies. The revised analysis by the United States Geological Survey remains incomplete, despite extension of the comment period. The Pueblo of Sandia requests an opportunity to review the revised water quality analysis, and requests that the revision be provided prior to preparing the Final Environmental Impact Statement. This is particularly important since the content analysis is concentrated only on parameters that didn't change significantly or show improvement under the alternatives examined. In general, the coverage of water quality issues in Chapter 3 could be improved through additional discussions on point source contributions to the Middle Rio Grande, such as the City of Albuquerque's wastewater treatment plant's effluent discharge. Additional information regarding ambient water quality concerns such as impairment of the river's designated uses (i.e., fecal coliform in the Middle Rio Grande) is also warranted.

Submitted by: Lawrence Gutierrez, Pueblo of Sandia

Response to Comment: Additional water quality analysis was performed by USGS and confirmed the original conclusions in the DEIS. Analysis of point source contributions for the river system is beyond the scope of this EIS. A copy of the USGS analysis was provided to the Pueblo of Sandia following receipt of these comments and will be included in Appendix M in the FEIS.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: It is also important to note that it is difficult to build a water quality model that can incorporate all the potential impacts from the proposed alternatives and their potential impacts on water quality. As noted, only three parameters were modeled due to data limitations to determine the total potential impacts to water quality. We believe when water quality was selected as the third most important decision criteria, the intent was to consider the larger definition of water quality, not just a few chemical/physical parameters that can be successfully incorporated into a numerically model. Water quality standards encompass a host of numeric criteria and narrative statements. Water quality is a broad term - "fishable and swimmable" goals of the federal Clean Water Act, a variety of ecosystem components need to be evaluated. The difficulty of effectively modeling water quality as a whole can be addressed by:

1) modifying the decision hierarchy and analysis (Figure 4-33) to include various elements of other criteria components that relate to water quality in the larger sense,

2} acknowledging the limitations in the analysis by reducing the weight of the results towards the selection of a preferred alternative, and 3) noting the challenges of truly answering the "water quality" concern in the Section 4.10.4 section list of uncertainty and data gaps.

Submitted by: Marcy Leavitt, NM Environment Department

Response to Comment: It is recognized that the parameters that were selected for modeling do not reflect all possible changes to water quality. However, the water quality team believes that these parameters are good indicators of the overall quality of water in the system. The lack of significant differences among the alternatives for these three parameters suggests that most water quality parameters would likely not see significant changes under any of the alternatives. Therefore, the ranking of the alternatives is likely sufficient to reflect the overall trends in water quality that might be expected from any of the alternatives.

Chapter: 4 Starting DEIS Page #: Starting DEIS Line #:

Comment: These impacts could lead to degradation in water quality in parameters not included in the water quality analysis. Since riparian resources are such a vital component of ecosystem needs (the top ranking decision criteria). It seems unacceptable that the alternative with the lowest riparian resource support (Figure 4-24) was selected as the preferred alternative.

Submitted by: Marcy Leavitt, NM Environment Department

Response to Comment: The role of riparian vegetation on overall water quality conditions has not been quantified for the study reaches. It is recognized that degradation could occur for a variety of reasons. However, with the data available for water quality, it is impossible to determine how riparian vegetation might play a role in future water quality conditions.

Chapter: 4 Starting DEIS Page #: 58 Starting DEIS Line #: 9

Comment: line 9 on page IV-58 lists pH as a modeled parameter. Table 4-17 and Figure 4-33 do not include pH.

Submitted by: Marcy Leavitt, NM Environment Department

Response to Comment: pH was not modeled. The statement will be corrected in the FEIS.

Chapter: 4 Starting DEIS Page #: 60 Starting DEIS Line #:

Comment: As noted on page IV-60, the water quality analysis is not complete at this time because the regression models used do not explicitly consider flow-based differences in water quality. Since water quality was identified as the third most important decision criteria, it should be noted in the summary Table S-2 that the water quality analysis is incomplete at this time. As currently summarized, it implies Alternative B-3 could result in a slight improvement in water quality as compared to Alternative I-1. This is largely the result of a predicted 100% (best condition) for Alternative B-3 for temperature through the Rio Chama section, with an 89% predicted for Alternative I-1. These results do not make sense when compared to the predicted impact to the riparian zone. Healthy riparian vegetation should result in increased shading, and therefore lower water temperatures.

Submitted by: Marcy Leavitt, NM Environment Department

Response to Comment: River discharge and/or reservoir volumes were used in each of the original models used to predict water quality. The revised analysis confirms the results contained in the DEIS under each alternative. The water quality models used to differentiate among the alternatives are not sensitive to potential changes in riparian vegetation or other resources. The water quality team recognizes that some of these changes might occur. However, the level of changes that would be expected under each alternative are not possible to predict at this time.

Chapter: 4 Starting DEIS Page #: 58 Starting DEIS Line #: 23

Comment: line 23 on page IV-58 needs clarification because it refers to temperature as both a dependent and independent variable in the linear regression model.

Submitted by: Marcy Leavitt, NM Environment Department

Response to Comment: Text will be modified in the FEIS.

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