GENERAL REEVALUATION REPORT AND

SUPPLEMENTAL ENVIRONMENTAL

IMPACT STATEMENT II:

RIO GRANDE FLOODWAY,

SAN ACACIA TO BOSQUE DEL APACHE UNIT,

SOCORRO COUNTY, NEW MEXICO

APPENDIX C

ENDANGERED SPECIES

ACT CONSULTATION

BIOLOGICAL

ASSESSMENT

DEPARTMENT OF THE ARMY
ALBUQUERQUE DISTRICT, CORPS OF ENGINEERS
4101 JEFFERSON PLAZA NE
ALBUQUERQUE NM 87109-3435

May 8, 2012

Planning, Projects and Program Management Division
Planning Branch

Mr. Wally Murphy
U.S. Fish and Wildlife Service
Ecological Services Field Office
2105 Osuna NE
Albuquerque, New Mexico 87113

Dear Mr. Murphy:

As a follow-up to your office's comments dated January 26, 2012, the U.S. Army Corps of Engineers, Albuquerque District (Corps) is providing clarifying background information for the ongoing consultation with the U.S. Fish and Wildlife Service (Service) on the San Acacia to Bosque del Apache Unit of the Rio Grande Floodway Project. To this end, enclosed is the updated *Programmatic Biological Assessment of U.S. Army Corps of Engineers' Rio Grande Floodway, San Acacia to Bosque del Apache Unit, Socorro County, New Mexico.*

The Biological Assessment (BA) provides supplemental information to clarify project design and the Corps' effects determination of the proposed action on federally listed species and designated and/or proposed critical habitat occurring from the San Acacia Diversion Dam downstream along the Rio Grande to San Marcial.

The Corps appreciates the Service's discussion on our BA provided during our meeting on January 31, 2012. We concur that a programmatic Biological Opinion (BO) is appropriate for the proposed action to provide flexibility for project implementation and species protection over the approximately twenty-year construction period. The Corps has included sections for annual monitoring and reporting to support the programmatic BO, and addressed other comments to the extent possible in the updated BA.

Formal Section 7 consultation on the proposed action was initiated on December 7, 2011, with the submittal of a Biological Assessment. With the submittal of the enclosed clarifying information, the Corps agrees to extend the formal consultation period. The Corps requests that Service provide a draft programmatic Biological Opinion no later than June 11, 2012, in order to stay on schedule to award a construction contract for the project during next fiscal year.

If you have any questions, please contact me at 505-342-3281 or Mr. William DeRagon, Biologist, at 505-342-3358.

Sincerely,

Julie A. Alcon
Acting Chief, Planning Branch

Enclosure

Copies Furnished:

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January 26, 2011

COMMENTS & RECOMMENDATIONS
On the
U.S. ARMY CORPS OF ENGNEERS BIOLOGICAL ASSESSMENT
For the
SAN ACACIA TO BOSQUE DEL APACHE UNIT
SOCCORO COUNTY, NEW MEXICO

General information: The Corps has revised the BA to include the clarifying information requested; and we took the opportunity to edit it for general readability and clarity. The text within a given chapter (especially Chs. 1, 2, and 5) have been rearranged. We attempted to preserve all edits through MS-Word's track-change feature; however, the results quickly became more of a disservice to the reader than a help. Despite substantive revisions in the text, the effects determination regarding the proposed action remains the same. Appendix A has been updated with more detailed information; and Appendix B (floodplains) has been added.

May 4, 2012

1) The BA contains no executive summary. However, this is not a hard and fast requirement, and the introduction includes all of that information.

   Response: The Introduction and the summary of effects section provide a brief summary of the document. An executive summary was not considered in a document of this rather small size and pointed topic.

2) If there were and executive summary, it would include the table on page 86, so suggest adding a sentence to the end of the last paragraph in the introduction to let the reader know that it is there.

   Response: A sentence referring to the summary table was added to end of the Introduction.

3) The table on page 86 needs to be revised to be consistent with the NLAA conclusion on page 78.

   Response: The Table has been revised.

4) The conclusions on page 85 need to be revised consistent with the conclusions on page 78.

   Response: The text has been revised.

5) Maps of the 14 individual reaches would be helpful in supporting the mitigative value of staged construction, and give the reader a better understanding of the project.

   Response: Table 2.2 describes the s six segments of phased construction.

6) Habitat restoration proposed as a conservation measure is not described sufficiently to assess the aggregate effect after considering offsetting measures. A generalized location, total acreage and general habitat type is provided, but more detail is necessary to assess the adequacy in offsetting effects of the proposed action.

   Response: The descriptions of riparian vegetation effects and mitigative plantings has been revised.

7) Timing of construction needs to be clear. Not clear whether all construction activities except vegetation management will occur year-round.

   Response: The text has been revised accordingly.

8) Duration of the consultation is not clear. What is the life of the project? The non-federal O&M extends to perpetuity or when?

   Response: The following was added to Section 2.2.1: The Corps regularly considers 50 years as the functional life of flood control structures. Non-Federal operations and maintenance requirements extend to perpetuity.

9) How long will the temporary river crossing be deployed? Discussion of placing it is included but no discussion of how it will be removed.

   Response: See revised text in Sections 2.2.2 and 5.1.1.

10) The heart of the BA should be analysis of effects of the action on endangered species. Section 5 reads like a summary and covers some aspects of effects but is not comprehensive.

    Response: The text has been revised accordingly.

11) Why are 3 LFCC pumping stations going to be made permanent through the levee? Wouldn't it be better to say there is flexibility depending on the next Water Ops BO and/or future adaptive management?

    Response: Concur. See revised text in Section 2.2.7.

12) There still does not seem to be sufficient detail on some aspects to assess effects – how far are flycatcher territories from construction areas/ from habitat to be removed? Still no description of the effect on the side channel abuting the spoil levee in the refuge reach.

    Response: Additional detail on the location of flycatcher territories was included in Section 5.1.3, and in GIS shapefiles provided under separate cover. The ephemeral channel is discussed in Section 5.1.4.

13) No effect determinations were made for sunflower, falcon, and least tern. This is an action agency responsibility and we generally don't spend time on these species unless we have overwhelming reason to believe there are effects that should be considered.

    [No response necessary.]

14) Candidate species NM meadow jumping mouse and Yellow billed cuckoo were not assessed. This will be a trigger for reinitiation in the future when/if the species are listed. This may occur before construction is completed. While candidate species are not afforded protection under the ESA, and need not be included in the BA, it would be helpful to state that should they become listed species the project would re-initiate consultation for them, if necessary.

    Response: Section 2.2.13 mentions the criteria for reinitiation, including the listing of new species.

15) Difficult to understand if the San Marcial railroad bridge is a limiting factor on flood releases or not. First sentence Section 3.3.3 seems to mean that Corps flood operations are affected by the presence of the bridge but this is followed by lots of narrative of why the Corps did not replace it, and it contradicted by last sentence of this same section.

    Response: The text was revised to clarify that the bridge is a restriction to unregulated flood flows, but does not restrict the regulated flow from upstream reservoirs.

16) Table 2.2 on page 17 is hard to interpret. Does it mean that with the new levee that there will be almost ½ less overbanking flow?

    Response: This table (now Table 5.3) indicates that the new levee would eliminate inundation of lands west of the spoil bank / new levee alignment. The Corps refers to this area as the "floodplain", and uses "overbank" to refer to the out-of-channel area within the floodway.

17) There is no mention of the PCEs for the flycatcher. A discussion of their presence or absence in areas where woody vegetation is necessary in the analysis of effects.

    Response: Chapters 4 and 5 have been revised to include discussion of flycatcher PCEs.

18) There is no monitoring plan.

    Response: Monitoring is now described Section 2.2.13.

19) There is no reporting plan.

    Response: Annual reporting is now described Section 2.2.13.

20) The Collaborative Program deserves a discussion of its own.

    Response: As a long standing participant in the Collaborative Program, the Service is fully informed about the breadth of activities on the Middle Rio Grande. The BA references numerous reports funded by the Program that contribute directly to the baseline and analysis.

21) There is no mention of any coordination with the New Mexico Department of Game and Fish.

    Response: The NM Dept of Game and Fish has been requested to review and comment on the proposed plan, specifically the General Reevaluation Report / Supplemental EIS (GRR/SEIS). There was no specific coordination for Section 7 consultation.

22) The discussion on the placement of riprap states that it will be when the area is dry and should conclude NLAA or no effect to the minnow.

    Response: Concur. See revised text in Section 5.1.5.

23) Relocation of fish from construction areas is a form of take and is adverse.

    Response: Agree. The following text was added to Section 2.2.2: "Cofferdams and silt curtains would be deployed to minimize disturbance to fish in the immediate area. These barriers *would be deployed by Corps biologists from the shoreline into the current to exclude fish from the area where the temporary ramp is constructed. These barriers also would be deployed to exclude fish from the construction activities when the ramp is removed." Service determines effects and take.*

24) The analysis for the soils cement/riprap states that water velocities at SADD are too high for the minnow. The riprap would reduce the velocity of water and create some backwater refugia that could be used by the minnow at lower flows. Since some PCEs are lacking, why the adverse modification conclusion? [There are plenty of minnow near SADD, so perhaps that discussion was an oversimplification. Adverse modification could result from the soil cement and/or the temporary road placed in the river?]

    Response: PCEs for minnow habitat are described in Section 4.1.1. PCE iii is specific to substrate type. The text in Section 5.1.2 has been revised regarding loss of aquatic habitat area, conversion of sand substrate (PCE) to soil cement. Riprap will not be used at this site based on more recent design.

25) 2.1, p. 7: "Prior to LFCC construction, the channel into Elephant Butte Reservoir was obstructed with sediment and vegetation such that no surface flows entered the reservoir...". Does this mean no flows *ever*, or just under some or most conditions?

    Response: The latter condition is implied. The text in Section 1.2 was revised to read: "Prior to LFCC construction, the channel into Elephant Butte Reservoir was obstructed with sediment and vegetation such that surface flows entered the reservoir were reduced, resulting in an estimated water loss of 140,000 acre-feet per year."

26) 2.1, p. 8: "Average annual water salvage ranges from 35,000 to 66,000 acre-feet during full operation." We were told on the field trip that the LFCC and this is verified by other sources that the LFCC is no longer used to divert flows but only captures drainage. Please expand the description of the operation of the LFCC to clarify its current management. Are any of the water saving actually being achieved these days, perhaps consisting of water drained from the agricultural areas?

    Response: The text states accurately that the Bureau of Reclamation does not currently operate the LFCC for its intended purpose. The state water savings refer to the "when-operated" period between 1962 and 1985 (approximately). The LFCC does passively function as an riverside drain currently.

27) 2.1, p. 8: "Elephant Butte Reservoir storage increased in the early to mid-1980s, inundating and burying the last 15 miles of the channel above the reservoir with sediment." Clarify that this, along with difficulties with maintenance of alternate reentry points for the LFCC, are the reasons that diversions into the LDCC have largely or entirely stopped.

    Response: The text in Section 1.2 was revised accordingly.

28) 2.1.1, p. 9: "The new levee cross section is narrower than the existing non-engineered spoil bank...". This is mostly true but not always true. Also, should point out that the new levee is higher than spoil bank. New levee is expected to prevent the spoil bank overtopping or other failure issues that are expected without it.

    Response: The description of the proposed levee was revised accordingly.

29) 2.2.1, p. 11: Text states: "Error! Reference source not found". Please provide reference.

Response: The erroneous links to tables and figures have been corrected.

30) 2.1.1, p. 12: Clarify vegetation and habitat characteristics of Tiffany Basin disposal site. These are not discussed elsewhere in the document. There needs to be a discussion of impacts, or lack thereof as the case may be, for this component of the project at the appropriate locations in the document. This is 300 acres that will receive spoil. It needs to be clear what habitat will be lost and restored or where nearest flycatcher territories are.

Response: The revised BA addresses these topics in Section 5.1.8.

31) 2.2.4, p. 14: Provide more information on the vegetation management zone and levee management. Mowing will be required once or twice a year, forbs will need to be controlled (see below), and rodents will be controlled which will probably mean using poison bait.

Response: More information has been provided within Section 2.2.6 for clarity and understanding.

32) 2.2.7, p. 15: Presumably no vegetation would grow on the soil cement areas. If true, this should be made explicit.

Response: Vegetation would not grow on or within the soil-cement slope after construction. See revised text in Section 2.2.4.

33) 2.2.9, p. 17, Conservation measure 2: Consider rerouting major construction traffic that would travel close to occupied flycatcher nests where this is practical. In some areas alternate access routes are available.

Response: This conservation measure has been reworded and clarified.

34) 2.2.9, p. 17, Conservation measure 3: Please clarify what is meant by flycatchers being present. Does this mean just a sighting of a bird or does it mean nesting activity as on page 77? (also on page 76)

Response: This has been reworded and clarified to indicate that it means any bird present, migrant or territorial.

35) 2.2.9, p. 17, Conservation measure 5: Change "the watercourse" to "any watercourse"; otherwise, specify the Rio Grande if that is the only intended watercourse.

Response: Corrected as suggested.

36) 3.3.2, p. 28: State why flooding of Tiffany Basin is a concern if there are no facilities or farmland within the basin (for example, that water ponded there after a flood would be lost to downstream use).

Response: Section 3.3.2 has been revise accordingly.

37) 4.2.3, p. 56, Flycatcher Breeding Habitat: Provide affiliations for D. Ahlers and M. Sogge.

Response: Corrected as suggested.

38) 4.2.3, p. 63: The lower incidence of cowbird parasitism on flycatcher nests in the Elephant Butte habitat areas may be due to greatly reduced riparian habitat fragmentation in this area due to more favorable conditions for denser and more continuous riparian growth. See Morrison and Hahn (2002). This has implications for the evaluation of both impacts and mitigation.

39) 5.1, p. 71: It would be helpful to include typical cross sections to show the differences between the work upstream and downstream of Highway 380. It would be helpful to include a variety of cross sections of the current spoil levee and the future levee at that location and assess the encroachment.

Response: Typical cross-sections are contained in Appendix A, Sheet C-141.

40) 5.1, p. 71-72: It is not clear how Action 1 and Action 2 are different as described. Both descriptions of the actions primarily address the encroachment of the levee on the floodway. It would make more sense to consolidate encroachment effects under one discussion and construction effects (noise, traffic, temporary disturbance, etc.) under the other.

Response: Chapter 5 has been revised to more clearly describe the effects of different project features and activities.

41) 5.1, P. 73: The NLAA determination needs further rationale. It appears that there are net gains in the floodway area and potential long-term gains in nesting habitat, but some nesting habitat is still lost in the short term. The quality of the habitats lost and gained are not detailed. Generally, if there are losses of habitat occupied by breeding flycatchers, that is an adverse determination; if suitable but unoccupied habitat is lost and is re-created elsewhere that could be not adverse; if there is a drop in groundwater elevation in riparian areas that causes loss in native vegetation (we see this when the river bed elevation drops), this could be adverse if it affects territories. The bigger picture potential effect is the future effect of continuing the river's confinement. The BA acknowledges the negative effects that dams, levees and drains, diversions, and flow regulation have had. This project perpetuates part of those effects.

Response: The discussion of affected vegetation has been clarified in Section 5.1.1.
Regarding the 'future condition: Should the existing spoil bank be breached or damaged, it would be immediately rebuilt on the same alignment. The future condition is the same for the with- and without-Corps-project conditions for discharges less than the breaching/ damaging flow (of approx. 11,800 cfs).The differential effect of the Corps proposed action relates to the confinement of flows greater than 11,800 cfs with the floodway.

42) 5.1, P. 74: ETL 1110-2-571 allows only perennial grasses (paragraphs 4-8), not "grasses and most herbaceous plant species". This implies removal of forbs by means of herbicides, and also negates planting of forbs in the vegetation-free zone.

Response: Section 2.2.6 has been revised accordingly.

43) 5.1, p. 75: Would any of the riparian forest plantings in Tiffany Basin be close enough to water to potentially serve as willow flycatcher habitat? This piece of information is essential to determining whether any of these plantings may qualify as mitigation for project impacts to this species.

Response: The location and type of plantings in Tiffany Basin are discussed in Section 5.1.8. These would consist of upland vegetation and would not likely be utilized by the flycatcher.

44) 5.1, p. 76: Why is the amount of riparian forest to be removed by the project exactly equal to the amount of space that is *suitable* for riparian forest mitigation?

Response: Their numeric similarity was coincidental.

45) 5.1, Action 5, p. 77: Text states that "This offset would replace..." does not explain what the offset it. Presumably this refers to the excavation work on the east bank discussed lower on the page; if so, this work should be referenced here. Also, the reference to water velocities should compare these to the no-action condition. I also note that the habitat removed by the excavation of about 12.4 acres is not described. For minnow, the construction of this excavation is very important for determining potential take of minnow. Needs details.

Response: The text clarifies this discussion in Sections 2.2.2 and 2.2.4, and in Sections 5.1.1 and 5.1.2.

46) 5.1, Rio Grande Silvery Minnow, p. 77: The statement that the west bank for 0.75 mile downstream of the SADD is "generally unsuitable for silvery minnows and other fish species because of very high water velocities in this area" seems to refer to flood flows. This bank currently has riparian forest along its entire length and may provide habitat for this species under low-flow conditions. Habitat conditions here under varying flow conditions and their relationship to the vertical location of proposed channel modifications should be clarified. (also on page 79)

Response: This analysis focuses on in-channel baseflow along vertical bankline. The aquatic habitat where the soil cement wall would be installed has high water velocities as a function of river width, local slope, etc. The high water velocity is why a soil cement wall is appropriate for bank protection, and why this area is unsuitable as minnow habitat.

The comment is correct in stating that as flow increases, there will be increased area of low-velocity habitat in other areas of the channel. There is an area of low velocity habitat across the channel.

47) 5.1, Action 7, p. 79: The discussion of the 1% and 10% floods does not adequately address the effects under the no-action alternative of such a flood (or any flood large enough to cause the spoil bank to fail). In such an event, the river would flood the agricultural lands normally protected by the spoil bank. This would leave large amounts of sediment on these lands, and in the downstream reaches large amounts of water unable to return to the floodway. The flow predictions are confusing – a quick online search reveals that there have been no discharges above 9,500 cfs at San Acacia at least since 1959 (the plot downloaded).

Response: The revised text in Section 5.1.6 discusses these topics.

Regarding flow predictions: The flood discharges and frequencies (Table 3.1) were based on standard Corps methodology, including the annual peak discharge series, and certified hydrology. These are explained in detail in the GRR/SEIS and its appendices.

48) Breaches in the spoil bank and resulting flooding could have a variety of effects, including temporary scouring, down-cutting, and loss of riparian forest near breaks in the spoil bank, stranding of fish in the agricultural area, channel avulsion from the floodway into the agricultural area (at least until corrected by Reclamation), habitat impacts due to prolonged flooding on the BDANWR, or abandonment of some agricultural lands after an extreme flood event due to soil and infrastructure damage. Such effects could have both negative and positive impacts on listed species.

Response: The revised text in Section 5.1.6 discusses these topics.

49) The proposed project would not eliminate the potential for these flooding effects and their potential impacts on listed species. However, it would greatly decrease their probability in any one year and the number of times they occur over the life of the project, relative to the no-action alternative.

Response: This has been acknowledged in Section 4.2.3.

50) Another consideration is the extent to which this change in flood regime could affect river and floodplain morphology and dynamism. While upstream dams and reservoirs reduce flood peaks, keeping more of the remaining flood flows within the remaining floodway and habitat area through levee construction may partially compensate for this condition. The return of somewhat higher flood peaks may result in a more dynamic river channel and floodplain. Losses of riparian vegetation due to floods may increase but this could also mean greater regeneration and development of more of the young age classes of riparian vegetation which can provide nesting habitat for the willow flycatcher.

Response: The revised text in Section 5.1.6 discusses these topics.

51) There is also the question of the long-term sustainability of the current and future project area. Is sediment accumulation in the floodway expected to continue, worsening the problem of the elevation differential between the floodway and the agricultural area and the drain in downstream areas? In the long term this would be expected to make the existing floodplain on the west bank of the river less and less suitable for riparian forest due to the ground surface continuing to elevate in relation to the water table which is controlled by the LFCC. This also might or might not affect the amount of surface flow in the river, depending on whether infiltration would increase or not in response to the water table being deeper.

Responses: The information for this comment has been updated and can be found within Section 3.03.2.

52) The discussion of effects on the silvery minnow should relate the <2 feet/second criterion used in the discussion with known responses of the silvery minnow to water velocities. I am not convinced that the flood flows will occur enough to cause high velocities often enough to even be considered as an effect on silvery minnow. Plus I thought it was stated that there are plenty of low velocity habitats available even at the highest peaks. Similarly, the increase in river stage due to high flow is so infrequent that it probably cannot be considered of any benefit to riparian vegetation.

Response: Concur. High water velocities occur within the normal range of flow at this site. See Section 5.1.2 and 5.1.6.

53) 5.4, p. 85: Discussion of Pecos sunflower should address the potential for this species to be found in the impact area. Given the lowered water table caused by the LFCC this is very unlikely, but this reason should be stated.

<u>Editorial Clarifications and Corrections</u>

General

1) Suggest that the indicative mood (will, etc.) or subjunctive mood (would, etc.) be used consistently throughout the document as appropriate rather than interchangeably.

Response: "Will" has been replaced with "would" throughout the document for consistency.

Specific

1) 1.4, P. 5: Change the name of NEPA to National Environmental *Policy* Act.

Response: Corrected as suggested.

2) 2.1, p. 7, line 36: insert "to" in front of "the Rio Grande".

Response: Corrected as suggested.

3) 2.2.7, p. 15, line 22: Text states "2.5 to 1 foot side slopes". Does this mean 2.5 to 1 side slopes, or side slopes that are 1 to 2.5 feet tall?

Response: 2.5 ft horizontal to 1 ft vertical, corrected in text.

4) 2.2.8, p. 15: Text states "This condition exists from approximately the city of Socorro and increases in the downstream direction...". Insert "downstream" after Socorro. Also, text states "For the 1% chance flood, depth in the floodway floodplain averages approximately 3 feet with some low lying areas reaching depths of up to 10 feet." Please reword to show this is the future condition with the project, not the present condition.

Response: The text in Section 5.1.6 has been revised accordingly.

5) 2.2.9, p. 17, Conservation measure 9: Insert "would" before "include".

Response: Corrected as suggested.

6) 2.2.9, p. 18, Conservation measure 10: Text states "..no leaks or discharges or lubricants, hydraulic fluids, ...". Is this supposed to read "...no leaks or discharges of lubricants..."?

Response: Corrected as suggested.

7) 3.3.2, p. 27: "The existing spoil bank limits meandering to the areas within the spoil banks...". The significant spoil bank is on only on one side of the river so this does not make sense. Suggest rewording to "limits meandering to the area east of the spoil bank". Corrected as suggested.

8) 4.2.3, p. 64: "Levees drains have greatly restricted..." Please clarify text.

Response: Sentence was revised to read: "Spoil banks have restricted the extent of floodplain inundation from discharges up to 7,000 or 10,000 cfs and, along with their attendant riverside drains, have functionally separated the river from most of the historical floodplain."

9) 4.5.2, p. 69: Correct Sporobolus airoide to Sporobolus airoides.

Response: Corrected as suggested.

10) 5.1, P. 74: Change “with the Tiffany Basin” to “within Tiffany Basin”.

Response: Corrected as suggested.

11) 5.1, p. 79: Change “29.900 cfs” to “29,900 cfs”.

Response: Corrected as suggested.

Reference used in Comments

Morrison and Hahn (2002) Geographic Variation in Cowbird Distribution, Abundance, and Parasitism, IN Effects of Habitat Fragmentation on Birds in Western Landscapes: Contrasts with Paradigms from the Eastern United States, T. Luke George and David S. Dobkin, ed. Studies in Avian Biology No. 25, Cooper Ornithological Society.